

CITY OF BOULDER
CITY COUNCIL MEETING
MUNICIPAL BUILDING, 1777 BROADWAY
Boulder, Colorado 80302
Tuesday, November 1, 2016
6 p.m.

AGENDA

1. CALL TO ORDER AND ROLL CALL

A. Presentation of the **Library of the Year Award**

B. Presentation of the **Earth Hour City Challenge Award**

2. OPEN COMMENT and COUNCIL/STAFF RESPONSE (limited to 45 min.)

Public may address any city business for which a public hearing is not scheduled later in the meeting (this includes the consent agenda and first readings). After all public hearings have taken place, any remaining speakers will be allowed to address Council. All speakers are limited to three minutes.

3. CONSENT AGENDA (to include first reading of ordinances) Vote to be taken on the motion at this time.

A. Consideration of a motion to **approve the August 16, 2016 City Council Meeting Minutes**

B. Consideration of the **following items relating to the 2017 Budget;**

1. Third reading, and consideration of a **motion to adopt Ordinance 8144 that adopts a budget for the City of Boulder, Colorado, for the fiscal year commencing on the first day of January 2017 and ending on the last day of December 2017**, and setting forth details in relating thereto; and

2. Second reading and consideration of a **motion to adopt Ordinance 8145 that establishes the 2016 City of Boulder property tax mill levies** which are to be collected by the County of Boulder, State of Colorado, within the City of Boulder in 2017 **for payment of expenditures by the City of Boulder**, County of Boulder, State of Colorado, and setting forth details in relation thereto; and

3. Third reading and consideration of a **motion to adopt Ordinance 8146 that appropriates money to defray expenses and liabilities of the City of Boulder, Colorado, for the 2017 fiscal year of the City of Boulder, commencing on the first day of January 2017, and ending on the last day of December 2017**, and setting forth details in relation thereto; and

4. Third reading and consideration of a **motion to adopt by Emergency, Ordinance 8147 that amends Section 3-8-3 and Chapter 4-20 of the B.R.C. 1981 changing certain fees**, and setting forth details in relation thereto

C. Third reading and consideration of a motion **to amend and adopt by emergency** the following:

1. Emergency Ordinance 8139 related to the **annexation and initial zoning of enclaves in the vicinity of 55th and Arapahoe**; and

2. Emergency Ordinance 8140 related to **an amendment** to Subsection

11-52-11(a), 11-2-33(a) and 11-5-11(a), B.R.C. 1981 regarding stormwater and flood control utility plant investment fees and water and wastewater fees

D. Introduction, first reading and consideration of a motion to order published by title only, Ordinance 8152 amending Chapters 8-9 “Capital Facility Impact Fees,” 3-8 “Development Excise Tax,” and 4-20 “Fees,” concerning changes to Impact Fees and Excise Taxes, and setting forth details in relation thereto

4. POTENTIAL CALL-UP CHECK IN

Opportunity for Council to indicate possible interest in the call-up of an item listed under 8A. No Action will be taken by Council at this time.

8A. Potential Call-Ups

1. **Boulder Community Health Riverbend Site- Site and Use Review**
2. **9th & Broadway Civic Area – Floodplain Development Permit and Stream, Wetland, and Water Body permit**

ORDER OF BUSINESS

5. PUBLIC HEARINGS

Note: Any items removed from the Consent Agenda will be considered after any City scheduled Public Hearings

- A. **Second reading and consideration of a motion to adopt Ordinance 8148 designating the building and a portion of the property at 2935 19th St., to be known as the Tyler-Monroe-Bartlett Property, as a local historic landmark per Section 9-11-5 of the Boulder Revised Code, 1981. Owner/Applicant: Albert A. and Eleanor Frances Roberts Bartlett Trust**
- B. Consideration of the following items related to **Boulder Community Health (BCH) properties located at 4801, 4855, 4865 and 4885 Riverbend Road** which are associated with **BCH requests to redevelop the sites with a new medical facility and parking structure within the Riverbend Office Park:**
 1. **Request to change the underlying Boulder Valley Comprehensive Plan (BVCP) Land Use Designation on the Riverbend Road site from Transitional Business to Public**
 2. **Second reading and consideration of a motion to adopt Ordinance 8149 amending Title 9, “Land Use Code,” B.R.C. 1981, to rezone the properties from BT-2 (Business Transitional – 2) to P (Public); and**
 3. **Second reading and consideration of a motion to adopt Ordinance 8150 amending Title 9, “Land Use Code,” B.R.C. 1981, to amend Ordinance 8028 amending Appendix J of Title 9 adding BCH properties to areas where height modifications may be considered**
- C. **Second reading and consideration of a motion to adopt Ordinance 8151 to rezone 1.12 acres of land located at 3200 Bluff Street (the AirGas site) from Industrial Mixed Services (IMS) to Mixed Use - 4 (MU-4)**
- D. **City Council consideration of Area I public requests for land use map changes as part of the Major Update to the Boulder Valley Comprehensive Plan (No new testimony will be received)**

6. **MATTERS FROM THE CITY MANAGER**
7. **MATTERS FROM THE CITY ATTORNEY**
8. **MATTERS FROM MAYOR AND MEMBERS OF COUNCIL**
 - A. Potential Call-ups
 1. **Boulder Community Heath Riverbend Site- Site and Use Review**
 2. **9th & Broadway Civic Area – Floodplain Development Permit and Stream, Wetland, and Water Body permit**
 - B. **Mayor Pro Tem Indications of Interest**

9. **PUBLIC COMMENT ON MATTERS**

Public comment on any motions made under Matters

10. **DECISION ON MOTIONS**

Action on motions made under Matters

11. **DEBRIEF**

Opportunity for Council to discuss how the meeting was conducted

12. **ADJOURNMENT**

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Boulder 8 TV (Comcast channels 8 and 880) is now providing Closed Captioning for all live meetings that are aired on the channels. The closed captioning service operates in the same manner as similar services offered by broadcast channels, allowing viewers to turn the closed captioning on or off with the television remote control. Closed captioning also is available on the live HD stream on BoulderChannel8.com. In order to activate the captioning service for the live stream, the "CC" button (which is located at the bottom of the video player) will be illuminated and available whenever the channel is providing captioning services.

Anyone requiring special packet preparation such as Braille, large print, or tape recorded versions may contact the City Clerk's Office at 303-441-4222, 8 a.m. – 5 p.m. Monday through Friday. The Council Chambers is equipped with a T-Coil assisted listening loop and portable assisted listening devices. Individuals with hearing or speech loss may contact us using Relay Colorado 711 (711) or 1-(800)-659-3656. Please request special packet preparation no later than 48 hours prior to the meeting.

If you need Spanish interpretation or other language-related assistance for this meeting, please call (303) 441-1905 at least three business days prior to the meeting. Si usted necesita interpretación o cualquier otra ayuda con relación al idioma para esta junta, por favor comuníquese al (303) 441-1905 por lo menos 3 negocios días antes de la junta.



**CITY OF BOULDER
CITY COUNCIL AGENDA ITEM**

MEETING DATE: November 1, 2016

AGENDA TITLE:

Introduction, first reading and consideration of a motion to order published by title only, Ordinance 8152 amending Chapters 8-9 “Capital Facility Impact Fees”, 3-8 “Development Excise Tax”, and 4-20 “Fees” concerning changes to Impact Fees and Excise Taxes, and setting forth details in relation thereto.

PRESENTER/S

Jane S. Brautigam, City Manager
David Gehr, Deputy City Attorney
Susan Richstone, Deputy Director for Planning
Chris Hagelin, Senior Transportation Planner
Kristin Hyser, Community Investment Program Manager
Devin Billingsley, Senior Budget Analyst
Lauren Holm, Associate Planner
Chris Meschuk, Project Manager

EXECUTIVE SUMMARY

The purpose of this item is for council to consider the first reading of an ordinance implementing changes to the city’s development Impact Fees and Excise taxes. The second reading and public hearing for this ordinance will be held on Nov. 15, 2016.

This ordinance (**Attachment A**) would implement changes as a part of the development-related impact fees and excise taxes project, which began in May 2015 and is in the decision making phase. The project has had four city council study sessions and one matters discussion, three public meetings, and six technical working group meetings regarding these changes.

Impact Fees and Excise Taxes are one-time payments used to fund capital infrastructure system improvements needed to accommodate new development. Studies to establish the proportionate share of the needed capital improvements must be developed to meet legal requirements. The last time the studies were updated was in 2009.

The city has six existing capital facility impact fees, and a transportation excise tax. This update is an incremental update of the existing fees/tax, based on current master plans and capital plans of the city. The studies for updating these fees were completed by TischlerBise, and are included in **Attachments B-D**. The 2017 recommended budget proposes a 2% inflation factor increase that will take effect January 1, 2017. That increase has been factored into the tables and calculations described below.

For capital facility impact fees, the change based on prototypical developments¹ is a \$0.88/sq. ft. increase for residential, and a \$0.73/sq. ft. increase for non-residential. For the transportation component, council direction in June was to develop a hybrid approach using both the existing excise tax and a new impact fee to fund transportation improvements. With reallocation of the existing parkland excise tax and the new impact fee, the change based on prototypical developments is a \$0.13/sq. ft. increase for residential, and a \$0.24/sq. ft. increase for non-residential. The combined change based on prototypical developments is a \$1.01/sq. ft. increase for residential, and a \$0.97/sq. ft. increase for non-residential.

Staff is recommending the fees become effective on July 1, 2017.

At the Nov. 15, 2016 Public hearing, staff will also be seeking direction regarding changes to the affordable housing commercial linkage fee. The agenda memo for that item will include analysis and a recommendation for changes to that fee.

STAFF RECOMMENDATION

Suggested Motion Language:

Staff requests council consideration of this matter and action in the form of the following motion:

Motion to introduce and order published by title only, Ordinance 8152 amending Chapters 8-9 “Capital Facility Impact Fees”, 3-8 “Development Excise Tax”, and 4-20 “Fees” concerning changes to Impact Fees and Excise Taxes, and setting forth details in relation thereto.

¹ The residential prototype is a 3-unit townhome building totaling 3,655 sq. ft., with a total development cost of \$1,200,000. The commercial prototype is a 61,466 sq. ft. office building, with a small retail and restaurant space, and a total development cost of \$18,500,000.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- **Economic:** Any increase in development-related taxes and or fees will increase the overall cost of residential and non-residential development. Impact fees and development excise taxes directly fund the facilities to serve new development and therefore also directly benefit the residents and employees of new development and redevelopment. Alternatively, if current fees and excise taxes are not adequate, existing residents pay for these facilities through either declining levels of services or by bearing the capital costs.
- **Environmental:** Inadequate funding of the capital facilities to serve new growth may result in overuse of existing facilities, leading to negative impacts to existing land resources such as parks as well as potential traffic impacts if residents need to drive further for facilities or the transportation infrastructure is not adequate.
- **Social:** Impact fees and/or development excise taxes ensure that new growth pays the costs of the facilities needed to adequately serve new development including affordable housing, parks, and city human service facility needs, and conversely, that existing residents do not bear the impacts of new development through decreasing service levels at existing facilities. The prime beneficiaries will be all future city residents who will benefit from the provision of adequate public parks, libraries, senior centers, transportation facilities, and other needed municipal facilities.

OTHER IMPACTS

- **Fiscal:** The cost to date of the studies is \$302,140. The original contracted scopes of work for the project totaled \$262,820. The breakdown by component is:
 - Impact Fee/Excise Taxes: \$69,160
 - Transportation: \$84,160
 - Housing: \$91,900
 - Public Art: \$17,600Additional requests for information and project rescheduling increased the housing scope of work by \$10,000. In April 2016, Council added an economic impact analysis to the project, which cost \$29,320.

The departments that benefit from the study are sharing in the costs to fund the study, and the relevant excise tax/impact fee funds can be used to fund the excise tax/impact fee studies. Increases in excise taxes or impact fees will increase the city's ability to fund needed capital improvements in the city.
- **Staff time:** The Department of Planning, Housing and Sustainability is providing project management and each of the affected departments are providing support to the consultant's work. This was included in 2015 and 2016 work programs. The project was anticipated to be complete by the end of 2016. Due to rescheduling, the project will extend into 2017, and has caused other work plan items in Planning, Housing and Sustainability, and Public Works – Transportation to be delayed and/or slowed down.

PUBLIC FEEDBACK

Recognizing the technical nature of the studies, this project has utilized several methods to gather public feedback. This has included a public introduction session, an information session, a technical working group and targeted outreach to interested community members and organizations. The project has also been highlighted on Inside Boulder News on Channel 8 on several occasions.

Intro Session

A public introductory seminar was held on Feb. 1, 2016 and provided background information on impact fees, excise taxes, and shared examples of recent developments where fees and taxes were paid. The presentation also included a review of the project scope, purpose and timeline. The presentation was livestreamed online, and a [video of the presentation is available](#) as well as the [handout](#).

Technical Working Group

To assist the city and its consultants in developing recommendations for the studies and potential fee or tax changes, the city selected 13 individuals to join a working group to provide input and feedback on the work products being prepared for different components of the project. The selected members represent a diverse set of perspectives to assist in the project. The group was not expected to come to consensus or otherwise come to an agreement or resolution, or to provide a recommendation. The role of the group was to provide a diverse range of opinions and perspectives to assist the city staff and consultants in the project.

Information Session

A public information session was held on Aug. 31, 2016 to provide information on the project to date, findings from the studies, and final options as directed from Council. The information session included staff stations for Development Fees 101, Capital Facility Impact Fees, Transportation and Affordable Housing. A [handout](#) was available at each station.

Targeted Outreach

During the duration of the project the team maintained an interested community member email list, and presented to four community organizations and at two events about the project and topic.

BACKGROUND

Project Information

The City Council directed staff to initiate updates to the development impact fees and excise taxes in May 2015. Staff hired two consulting firms (TischlerBise and Keyser Marston Associates) in August 2015 to conduct studies in four focus areas (project components).

1. Update the 2009 Capital Facility Development Impact Fees
2. Update the Transportation Excise Tax to focus on multimodal improvements
3. Update the 2009 study on Affordable Housing Linkage fee
4. Conduct a study for private development to support public art

In the interim while the study is on-going, annual inflation updates have been factored into the annual budget process for the existing fees. Those updates will occur through Ordinance No. 8147, effective on Jan. 2, 2017. The proposed ordinance as a part of this item is amending the fees as described in Ordinance No. 8147.

City Council has held four study sessions and one agenda discussion on this project:

- [Oct. 13, 2015](#) – council discussed the project scope and approach.
- [April 12, 2016](#) – council reviewed and discussed initial findings and technical working group feedback. The public art component was moved out of this project and into the Community Cultural Plan implementation.
- [June 14, 2016](#) – council discussed and narrowed the fee options.
- [Aug. 30, 2016](#) – council discussed transportation rate structures and affordable housing credits.
- [Sept. 20, 2016](#) – council discussed and provided direction to develop an ordinance and hold a public hearing for final direction on the fee and tax changes.

For the City of Boulder, sales taxes and property taxes are used to primarily support operations and capital maintenance. Impact Fees and Excise Taxes are the mechanism or tool that the city uses to implement the longstanding community policy that growth pay its share of incremental impact on city infrastructure. As shown in the graphic to the right, impact fees must be based on a study that establishes the proportionate share to meet the rational nexus legal requirements.

Studies and Reports

To establish legally supportable fees and taxes, the city conducts studies to establish the connection between the need and the fee levels.

Updating the studies
Typically, impact fee studies look out five to ten years, with the expectation that fees will be periodically updated (e.g., every 6 - 10 years).

-  **Gather background data** - including capital infrastructure needs based on departmental master plans and facility plans.
-  **Update demographic data** - including population and employment numbers based on BVCP projections.
-  **Calculate the fees/taxes** using accepted allocation methodology to determine appropriate fee levels.

ANALYSIS

Capital Facility Impact Fees

The city has six impact fees for capital facilities:

- *Library Impact Fee* – funds library facilities and materials in the library’s collections; charged on residential development.
- *Parks & Recreation Impact Fee* - funds outdoor parks, recreation center and pool facilities and support facilities; charged on residential development.
- *Human Services Impact Fee* - funds senior center facilities and the Children, Youth and Family Center facility; charged on residential development.
- *Municipal Facilities Impact Fee* – funds municipal building space; charged on residential and non-residential development.
- *Police Impact Fee* - funds police station facilities and communication center space; charged on residential and non-residential development.
- *Fire Impact Fee* - funds fire station facilities, land and fire apparatus; charged on residential and non-residential development.

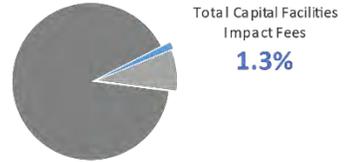
The study completed by TischlerBise (**Attachment B**) has established that an incremental update to the fee levels is necessary based on current capital needs and levels

of service. When the fees are applied to prototypical developments it results in the following fees on a per square foot basis, and as a percent of total development costs:

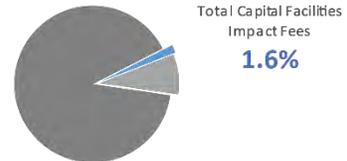
	RESIDENTIAL		
	Current	Proposed	Increase
Capital Facility Impact Fees	\$ 3.89	\$ 4.77	\$ 0.88
Parks & Recreation Impact Fee	\$ 2.62	\$ 3.31	\$ 0.69
Library Impact Fee	\$ 0.38	\$ 0.53	\$ 0.15
Fire Impact Fee	\$ 0.29	\$ 0.24	\$ (0.05)
Police Impact Fee	\$ 0.25	\$ 0.27	\$ 0.02
Municipal Facilities Impact Fee	\$ 0.23	\$ 0.32	\$ 0.09
Human Service Impact Fee	\$ 0.12	\$ 0.10	\$ (0.02)

*Note: The proposed fees have been applied to the prototypical development and are shown here as a cost per square foot factor.

Existing
Total Development Cost Estimate
\$1,200,000.00



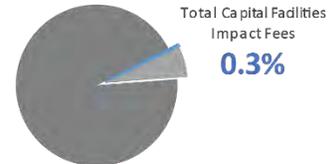
Proposed Update
Total Development Cost Estimate
\$1,200,000.00



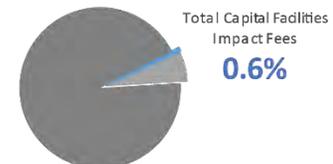
	NON-RESIDENTIAL		
	Current	Proposed	Increase
Capital Facility Impact Fees	\$ 1.00	\$ 1.73	\$ 0.73
Parks & Recreation Impact Fee	n/a	n/a	n/a
Library Impact Fee	n/a	n/a	n/a
Fire Impact Fee	\$ 0.60	\$ 0.87	\$ 0.27
Police Impact Fee	\$ 0.19	\$ 0.31	\$ 0.12
Municipal Facilities Impact Fee	\$ 0.21	\$ 0.55	\$ 0.34
Human Service Impact Fee	n/a	n/a	n/a

*Note: The proposed fees have been applied to the prototypical development and are shown here as a cost per square foot factor.

Existing
Total Development Cost Estimate
\$18,500,000.00



Proposed Update
Total Development Cost Estimate
\$18,500,000.00



Staff is recommending adoption of the new fees as proposed in the 2016 Capital Facility Development Impact Fee Study (**Attachment B**).

Transportation Excise Tax & Impact Fee

The city currently has a development excise tax that funds two categories of capital infrastructure:

- a. *Park Land* – funds park land purchases; charged on residential development.
- b. *Transportation* – funds transportation system capital improvements and enhancements such as road improvements, intersections, bike lanes, underpasses, and pedestrian enhancements; charged on residential and non-residential development.

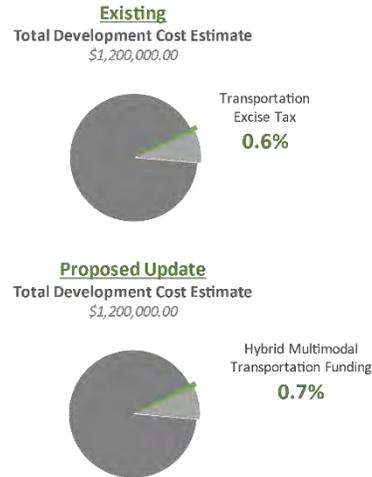
The studies completed by TischlerBise (**Attachments C & D**) have established that the growth share of transportation planned capital improvements is greater than the current development excise tax. Based on feedback from council, a hybrid approach was developed where transportation improvements are split by type, and allocated either to the existing Transportation Excise Tax, or a new Transportation Impact Fee.

Staff is recommending re-allocation of the parkland component of the Development Excise Tax to transportation. This will result in no change in total DET's for a residential development. The addition of a small Impact Fee to both residential and non-residential development is proposed.

When the fees are applied to prototypical developments it results in the following findings on a per square foot basis, and the context of the fees as a percent of total development costs:

	RESIDENTIAL		
	Current	Proposed	Increase
Transportation	\$ 1.90	\$ 2.03	\$ 0.13
Parkland Excise Tax	\$ 0.62	\$ -	\$ (0.62)
Transportation Excise Tax	\$ 1.28	\$ 1.90	\$ 0.62
Transportation Impact Fee	\$ -	\$ 0.13	\$ 0.13

*Note: The proposed fees have been applied to the prototypical development and are shown here as a cost per square foot factor.



	NON-RESIDENTIAL		
	Current	Proposed	Increase
Transportation	\$ 2.48	\$ 2.72	\$ 0.24
Parkland Excise Tax	n/a	n/a	n/a
Transportation Excise Tax	\$ 2.48	\$ 2.48	\$ -
Transportation Impact Fee		\$ 0.24	\$ 0.24

*Note: The proposed fees have been applied to the prototypical development and are shown here as a cost per square foot factor.

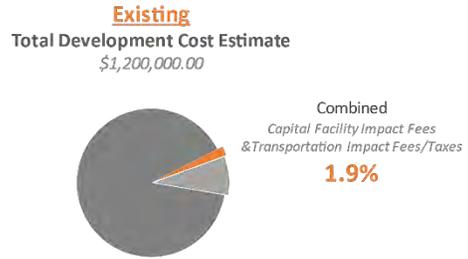


Staff is recommending adoption of a new transportation impact fee as proposed in the 2016 Transportation Impact Fee Study (**Attachment C**), and a slight revision to the allocation of the Transportation Excise Tax to allocate the current Parkland Excise Tax to Transportation, based on the analysis in the 2016 Transportation Excise Tax Study (**Attachment D**).

When the proposed fees are applied combined and applied to prototypical developments it results in the following findings on a per square foot basis, and as a percent of total development costs:

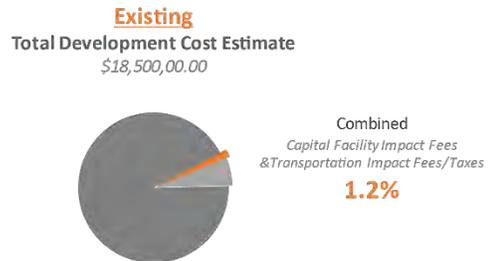
	RESIDENTIAL		
	Current	Proposed	Increase
Combined	\$ 5.79	\$ 6.80	\$ 1.01
Capital Facility Impact Fees	\$ 3.89	\$ 4.77	\$ 0.88
Transportation	\$ 1.90	\$ 2.03	\$ 0.13

*Note: The proposed fees have been applied to the prototypical development and are shown here as a cost per square foot factor.



	NON-RESIDENTIAL		
	Current	Proposed	Increase
Combined	\$ 3.48	\$ 4.45	\$ 0.97
Capital Facility Impact Fees	\$ 1.00	\$ 1.73	\$ 0.73
Transportation	\$ 2.48	\$ 2.72	\$ 0.24

*Note: The proposed fees have been applied to the prototypical development and are shown here as a cost per square foot factor.



Phasing

Staff recommends that the ordinance implementing the capital facility impact fees and transportation fee/tax be effective on July 1, 2017. This timeframe will allow time for developments already in the development review process to plan for these fee changes, and time for the city staff to prepare the software systems for these changes.

Development impact fees and excise taxes are assessed at the time of building permit application and paid at the time of issuance of the certificate of occupancy.

ATTACHMENTS

Attachment A: Ordinance 8152

Attachment B: 2016 Capital Facility Development Impact Fee Study

Attachment C: 2016 Transportation Development Impact Fee Study

Attachment D: 2016 Transportation Development Excise Tax Study

ORDINANCE 8152

AN ORDINANCE AMENDING CHAPTER 3-8
 "DEVELOPMENT EXCISE TAX," SECTION 4-20-62
 "CAPITAL FACILITY IMPACT FEE," AND CHAPTER 8-9
 "CAPITAL FACILITY IMPACT FEES," SETTING THE FEE
 RATES FOR IMPACT FEES AND EXCISE TAXES; AND
 SETTING FORTH RELATED DETAILS

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BOULDER,
 COLORADO:

Section 1. Section 3-8-1, B.R.C. 1981, is amended to read:

3-8-1. - Purpose and Legislative Intent.

- (a) Purpose: The purpose of this chapter is to impose a development excise tax on persons engaged in nonresidential and residential development in the city to fund the costs of growth related capital improvements for transportation ~~and park land acquisition~~. City council intends that the combined tax for ~~park land acquisition and~~ transportation continue to serve the purposes originally set forth for the two revenue sources.
- (b) Legislative Intent: The city council recites the following legislative findings and statements of intent that were taken into consideration in the adoption of this chapter:
- (1) Prior to 1998, the city collected development-related fees and taxes for public services, including parks and recreation, transportation, human services, municipal facilities, libraries, fire and police facilities, through a development excise tax, a transportation excise tax and a park land acquisition and development fee, to help ensure that new development pay for its growth-related impacts on public facilities.
 - (2) In 1998, under a ballot measure in Ordinance No. 6019, the voters authorized the city council to repeal the city's transportation excise tax and park land acquisition and development fee and consolidate them into the development excise tax.
 - (3) The 1998 ballot measure was based in part from the recommendations in a study entitled "Development Excise Tax, Boulder, Colorado - July 29, 1996," prepared by Tischler & Associates, consultants with expertise in fiscal impact analysis, capital facilities analysis and growth policy planning.
 - (4) The city council stated its intent in Ordinance 6019 that the allocation of the funds from the development excise tax could be changed at any time and the ballot measure stated that the proceeds from the authorized tax could be collected and spent without limitation.

- (5) TischlerBise, a fiscal, economic and planning consulting firm, updated the 1996 study which provides the basis for the transportation and park land acquisition excise taxes of this chapter, entitled “Development Excise Tax Study, City of Boulder Colorado - Jan. 9, 2009.”
- (6) TischlerBise also completed an updated 1996 study which provides the basis for the development impact fees that are in chapter 8-9, “Capital Facility Impact Fee,” B.R.C. 1981, which is entitled “Development Impact Fee Study, City of Boulder Colorado - Jan. 9, 2009.”
- (7) TischlerBise, updated the 2009 study which provides the basis for the transportation excise tax of this chapter, entitled “2016 Transportation Development Excise Tax Study, City of Boulder Colorado – Sept. 20, 2016.”
- (8) TischlerBise also updated 2009 study which provides for the basis for the development fees that are in chapter 8-9, “Capital Facility Impact Fee,” B.R.C. 1981, which is entitled “2016 Capital Facility Development Impact Fee Study, City of Boulder Colorado – Sept. 20, 2016”; and “2016 Transportation Development Impact Fee Study, City of Boulder Colorado – Sept. 20, 2016.”
- (9) The city council intends that the taxes collected pursuant to this chapter and chapter 8-9, "Capital Facility Impact Fees" will recover a portion of the costs related to the capital facilities’ needs associated with nonresidential and residential development for transportation, park land acquisition, library, police, fire, human service, parks and recreation and municipal services.
- (10) The development excise tax applies regardless of the value of the property developed. The development excise tax shall be imposed in addition to the capital facility impact fees imposed by chapter 8-9 and water, sanitary sewer and storm water and flood management plant investment fees imposed by sections 11-1-52, “Water Plant Investment Fee,” 11-2-33, “Wastewater Plant Investment Fee,” and 11-5-11, “Storm Water and Flood Management Utility Plant Investment Fee,” B.R.C. 1981, or any other fees, taxes, or charges of the city.

Section 2. Section 3-8-3, B.R.C. 1981, is amended to read:

3-8-3. - Tax Imposed on Nonresidential and Residential Development.

- (a) Tax Rate: No person engaged in nonresidential or residential development in the city shall fail to pay a development excise tax thereon according to the following rates:
 - (1) For new or additional floor area for nonresidential development per square foot of floor area:

Transportation	\$2.48
Total:	\$2.48

(2) For new detached dwelling unit:

Park land	\$1,194.60
Transportation	\$2,323.71
	<u>\$3,518.31</u>
Total:	\$3,518.31

(3) For new attached dwelling unit or mobile home:

Park land	\$830.57
Transportation	\$1,722.02
	<u>\$2,552.59</u>
Total:	\$2,552.59

- (b) Waiver of Tax Imposed on Annexation of Developed Residential Land: For property annexed with existing residential development, the tax imposed by this chapter is prorated in accordance with the following formula: one twenty-sixth of the applicable tax is waived for each full year the residence existed prior to July 17, 1988. The date on which residential development existed for determination of the waiver is the date of the issuance by Boulder County of a certificate of occupancy for the structure.

Section 3. Section 3-8-6, B.R.C. 1981, is amended to read:

3-8-6. - Development Excise Tax Revenues to Be Earmarked.

The city council hereby delegates to the city manager the duty to reflect the historical allocation of the recodified development excise tax in each annual budget. The funds collected will be allocated according to the following:

~~(a) — Transportation Development Fund: A portion of the development excise tax imposed by this chapter shall be deposited in the transportation development fund, which shall be exclusively for the purpose of constructing growth-related transportation capital improvements and collection and administration of the tax.~~

~~(b) — Park Land Acquisition: A portion of the development excise tax imposed by this chapter shall be deposited in the permanent park and recreation fund which shall be exclusively for the purpose of acquiring park land to serve the needs of city residents and collection and administration of the tax.~~

Section 4. Section 3-8-7, B.R.C. 1981, is amended to read:

3-8-7. - Development Excise Tax Credit.

(a) Capital Improvements: The city council may grant a development excise tax credit to a taxpayer on any or all of the tax imposed by this chapter if the city council, after receiving a recommendation from the city manager, finds that the taxpayer has agreed to make and dedicate

1 to the city any police, fire, library, human services or municipal offices capital improvements
 2 beyond those required by any provision of this code that would benefit the public at large to the
 3 same degree as collection of the tax, and that granting the credit will not result in a substantial
 4 increase in the city's costs of providing capital improvements in the future. The amount of the
 5 credit shall be equal to the cost of such improvements to the taxpayer, as determined by the city
 6 manager, and in no event shall the credit be greater than the amount of development excise tax that
 7 would be due on the property. No certificate of occupancy, temporary or otherwise, shall be issued
 for the property until such improvements have been completed to the satisfaction of the city
 manager and dedicated to the city, or a financial guarantee in a form allowed under section 9-12-
 13, "Sub-divider Financial Guarantees," B.R.C. 1981, and in an amount sufficient to secure the
 full costs, as determined by the city manager, of constructing or installing the improvements, has
 been provided by the developer.

8 ~~(b) Park Dedications and Improvements: The city council may grant a development~~
~~excise tax credit to a taxpayer on any or all of the tax imposed by this chapter and deposited in the~~
~~permanent park and recreation fund if the city council, after receiving recommendations from the~~
~~city manager and parks and recreation advisory board, finds that such a credit is in the public~~
~~interest. In making this determination, the council shall consider whether sufficient public~~
~~recreational areas, facilities or park land acceptable to the City has been dedicated to the City or~~
~~provided by the building permit applicant and whether the public receives perpetual use of such~~
~~recreational areas, facilities or additional park land in documents satisfactory to the city attorney.~~
~~But public recreational areas, facilities or park land referred to in this subsection does not include~~
~~yards, setbacks or any other areas required by city zoning and building regulations.~~

14 ~~(e) —~~Transportation Improvements: The city council may grant a development excise
 15 tax credit to a taxpayer on any or all of the tax imposed by this chapter and deposited in the
 16 transportation development fund if the city council, after reviewing a recommendation from the
 17 city manager, finds that such a credit is in the public interest. In making this determination, the
 18 council shall consider whether such improvements to be constructed by a developer are consistent
 19 with the ultimate configuration of the Transportation Master Plan for the Boulder Valley and do
 20 not solely benefit the private interests of the specific development project. No certificate of
 21 occupancy, temporary or otherwise, shall be issued for the property until such improvements have
 been completed to the satisfaction of the city manager and dedicated to the city, or a financial
 guarantee in a form allowed under section 9-12-13, "Sub-divider Financial Guarantees," B.R.C.
 1981, and in an amount sufficient to secure the full costs, as determined by the city manager, of
 constructing or installing the improvements, has been provided by the developer. The amount of
 the credit shall be based on reasonable project costs for constructing the improvement. The amount
 of the credit shall not exceed the total transportation excise tax owed to the city.

22 ~~(d_c)~~ Affordable Housing, Facilities Serving the General Public and Urban Renewal
 23 Areas: The city council may grant a development excise tax credit to a taxpayer on any or all of
 24 the tax imposed by this chapter if the city council finds the public interest is adequately served and
 25 the waiver or reduction is intended to assist in the provision of affordable housing or facilities
 serving the general public or in order to promote development in an urban renewal area established
 under state law. Any such decision by the city council to grant a development excise tax credit is
 at its discretion and is legislative in nature.

(de) Waiver of Tax for Permanently Affordable Housing: The development excise tax does not apply to those permanently affordable units that are provided on site within a single development that are in excess of the number of units required by chapter 9-13, "Inclusionary Housing," B.R.C. 1981. In addition, for every permanently affordable unit provided on site within a single development in excess of the number required by chapter 9-13, "Inclusionary Housing," B.R.C. 1981, the development excise tax will be waived for one of the permanently affordable dwelling units required by chapter 9-13, "Inclusionary Housing," B.R.C. 1981. This waiver applies only if the entire inclusionary housing requirement for the development is constructed on the site within a single development.

(ef) Business Incentive Rebates: The city manager may grant rebates of development excise taxes paid by primary employers in connection with equipment acquisition, construction projects, construction equipment and construction materials when, in the judgment of the city manager, the rebate will serve the economic interests of the city by helping attract or retain a primary employer which contributes to a socially, environmentally and economically sustainable community.

Section 5. Section 4-20-62, B.R.C. 1981 is amended to read:

4-20-62. - Capital Facility Impact Fee.

- (a) Impact Fee Rate: No person engaged in nonresidential or residential development in the city shall fail to pay a development impact fee. Fees shall be assessed and collected according to the standards of Chapter 8-9, "Capital Facility Impact Fee," B.R.C. 1981, and the following rates:

Table 1: Impact Fee Rates for Single Family Residential per Dwelling Unit

<i>Size Range (SF)</i>	IMPACT FEE RATE						
	<i>Library</i>	<i>Parks & Recreation</i>	<i>Human Services</i>	<i>Municipal Facilities</i>	<i>Police</i>	<i>Fire</i>	<i>TOTAL</i>
900 or less	\$226	\$1,549	\$72	\$139	\$145	\$103	\$2,234
901-1000	\$262	\$1,798	\$84	\$160	\$168	\$119	\$2,591
1001-1100	\$294	\$2,013	\$95	\$179	\$190	\$133	\$2,904
1101-1200	\$322	\$2,212	\$104	\$197	\$207	\$146	\$3,188
1201-1300	\$349	\$2,394	\$113	\$213	\$224	\$160	\$3,453
1301-1400	\$373	\$2,562	\$120	\$227	\$241	\$169	\$3,692
1401-1500	\$398	\$2,721	\$128	\$242	\$254	\$180	\$3,923
1501-1600	\$418	\$2,869	\$136	\$257	\$268	\$191	\$4,139
1601-1700	\$438	\$3,010	\$142	\$267	\$282	\$199	\$4,338
1701-1800	\$460	\$3,139	\$147	\$278	\$294	\$208	\$4,526
1801-1900	\$476	\$3,262	\$154	\$291	\$306	\$217	\$4,706
1901-2000	\$493	\$3,379	\$160	\$301	\$316	\$224	\$4,873
2001-2100	\$509	\$3,489	\$164	\$310	\$325	\$231	\$5,028
2101-2200	\$525	\$3,597	\$169	\$320	\$339	\$239	\$5,189
2201-2300	\$540	\$3,698	\$173	\$327	\$347	\$245	\$5,330

1	2301-2400	\$555	\$3,796	\$179	\$340	\$357	\$251	\$5,478
2	2401-2500	\$567	\$3,889	\$184	\$347	\$364	\$259	\$5,610
3	2501-2600	\$581	\$3,978	\$189	\$355	\$371	\$264	\$5,738
4	2601-2700	\$593	\$4,064	\$193	\$362	\$380	\$269	\$5,861
5	2701-2800	\$606	\$4,147	\$196	\$368	\$389	\$275	\$5,981
6	2801-2900	\$617	\$4,228	\$199	\$375	\$397	\$281	\$6,097
7	2901-3000	\$628	\$4,305	\$202	\$383	\$404	\$287	\$6,209
8	3001-3100	\$639	\$4,378	\$205	\$391	\$410	\$292	\$6,315
9	3101-3200	\$651	\$4,452	\$209	\$397	\$417	\$297	\$6,423
	3201-3300	\$661	\$4,522	\$213	\$404	\$424	\$301	\$6,525
	3301-3400	\$671	\$4,591	\$217	\$409	\$430	\$306	\$6,624
	3401-3500	\$679	\$4,657	\$220	\$415	\$436	\$309	\$6,716
	3501-3600	\$690	\$4,722	\$223	\$421	\$441	\$313	\$6,810
	3601-3700	\$700	\$4,784	\$225	\$425	\$447	\$316	\$6,897

Table 2: Impact Fee Rates for Multifamily Family Residential per Dwelling Unit

<i>Size Range (SF)</i>	IMPACT FEE RATE						<i>TOTAL</i>
	<i>Library</i>	<i>Parks & Recreation</i>	<i>Human Services</i>	<i>Municipal Facilities</i>	<i>Police</i>	<i>Fire</i>	
600 or less	\$239	\$1,636	\$75	\$145	\$154	\$177	\$2,426
601-700	\$290	\$1,981	\$94	\$174	\$187	\$215	\$2,941
701-800	\$332	\$2,281	\$107	\$202	\$213	\$248	\$3,383
801-900	\$370	\$2,544	\$120	\$226	\$239	\$277	\$3,776
901-1000	\$406	\$2,778	\$131	\$247	\$261	\$303	\$4,126
1001-1100	\$436	\$2,992	\$142	\$266	\$281	\$325	\$4,442
1101-1200	\$466	\$3,185	\$149	\$284	\$299	\$348	\$4,731
1201-1300	\$492	\$3,365	\$158	\$300	\$314	\$367	\$4,996
1301-1400	\$514	\$3,531	\$166	\$314	\$330	\$385	\$5,240
1401-1500	\$538	\$3,686	\$172	\$326	\$346	\$404	\$5,472
1501-1600	\$559	\$3,829	\$180	\$342	\$359	\$418	\$5,687

Table 3: Impact Fee Rates for Nonresidential

Nonresidential Uses	Impact Fee Rates Per Square Foot of Nonresidential Floor Area				
	<i>Municipal Facilities</i>	<i>Police</i>	<i>Fire</i>	<i>Affordable Housing</i>	<i>TOTAL</i>
Retail/Restaurant	\$0.15	\$0.51	\$0.41	\$7.10	\$8.17
Business Park	\$0.17	\$0.12	\$0.10	\$7.85	\$8.24
Office	\$0.22	\$0.17	\$0.62	\$9.72	\$10.73
Hospital	\$0.18	\$0.16	\$0.53	\$8.39	\$9.26
School	\$0.05	\$0.08	\$0.14	\$2.28	\$2.55

1	Mini Warehouse	\$0.00	\$0.02	\$0.00	\$0.09	\$0.11
2	Warehousing	\$0.07	\$0.05	\$0.05	\$3.16	\$3.33
3	Light Industrial	\$0.13	\$0.06	\$0.08	\$5.73	\$6.00

Impact Fee Rates for Other Nonresidential Uses Based on Unique Demand Indicators

4	<i>Other Nonresidential Uses</i>	<i>Municipal Facilities</i>	<i>Police</i>	<i>Fire</i>	<i>Affordable Housing</i>	<i>TOTAL</i>
5	Nursing Home (per bed)	\$20.60	\$22.89	\$56.07	\$895.19	\$994.75
6	Day Care (per student)	\$8.01	\$20.60	\$25.18	\$397.39	\$451.18
7	Lodging (per room)	\$25.17	\$54.93	\$69.81	\$1,093.89	\$1,243.80

Table 1: Residential Impact Fee Rates per Dwelling Unit

10	<u>Size Range (SF)</u>	IMPACT FEE RATES							
		<u>Library</u>	<u>Parks & Recreation</u>	<u>Human Services</u>	<u>Municipal Facilities</u>	<u>Police</u>	<u>Fire</u>	<u>Trans- portation</u>	<u>TOTAL</u>
11	799 and below	\$432	\$2,709	\$83	\$264	\$220	\$197	\$100	\$4,005
12	800-999	\$544	\$3,404	\$104	\$333	\$276	\$247	\$128	\$5,036
13	1000-1199	\$629	\$3,936	\$121	\$385	\$320	\$286	\$149	\$5,826
14	1200-1399	\$700	\$4,376	\$135	\$427	\$356	\$317	\$167	\$6,478
15	1400-1599	\$759	\$4,746	\$146	\$464	\$387	\$345	\$182	\$7,029
16	1600-1799	\$810	\$5,070	\$156	\$496	\$413	\$368	\$195	\$7,508
17	1800-1999	\$859	\$5,371	\$165	\$525	\$438	\$390	\$206	\$7,954
18	2000-2199	\$896	\$5,603	\$172	\$548	\$456	\$407	\$216	\$8,298
19	2200-2399	\$932	\$5,834	\$180	\$570	\$475	\$423	\$225	\$8,639
20	2400-2599	\$966	\$6,042	\$186	\$591	\$492	\$439	\$234	\$8,950
21	2600-2799	\$1,000	\$6,252	\$193	\$611	\$509	\$454	\$242	\$9,261
22	2800-2999	\$1,029	\$6,436	\$198	\$629	\$524	\$467	\$249	\$9,532
23	3000-3199	\$1,055	\$6,598	\$203	\$645	\$538	\$479	\$255	\$9,773
24	3200-3399	\$1,077	\$6,738	\$207	\$659	\$549	\$490	\$261	\$9,981
25	3400-3599	\$1,103	\$6,899	\$212	\$674	\$562	\$501	\$267	\$10,218
26	3600 and above	\$1,125	\$7,039	\$216	\$687	\$573	\$511	\$272	\$10,423

Table 2: Impact Fee Rates for Nonresidential

23	<u>Nonresidential Uses</u>	Impact Fee Rates Per Square Foot of Nonresidential Floor Area					
		<u>Municipal Facilities</u>	<u>Police</u>	<u>Fire</u>	<u>Affordable Housing</u>	<u>Transportation</u>	<u>TOTAL</u>
24							
25							

Table 2: Impact Fee Rates for Nonresidential

<u>Retail/ Restaurant</u>	<u>\$0.39</u>	<u>\$0.72</u>	<u>\$0.62</u>	<u>\$7.10</u>	<u>\$0.54</u>	<u>\$9.37</u>
<u>Office</u>	<u>\$0.56</u>	<u>\$0.29</u>	<u>\$0.89</u>	<u>\$9.72</u>	<u>\$0.22</u>	<u>\$11.68</u>
<u>Hospital</u>	<u>\$0.46</u>	<u>\$0.34</u>	<u>\$0.72</u>	<u>\$8.39</u>	<u>\$0.27</u>	<u>\$10.18</u>
<u>Institutional</u>	<u>\$0.12</u>	<u>\$0.24</u>	<u>\$0.19</u>	<u>\$2.28</u>	<u>\$0.18</u>	<u>\$3.01</u>
<u>Warehousing</u>	<u>\$0.14</u>	<u>\$0.09</u>	<u>\$0.23</u>	<u>\$3.16</u>	<u>\$0.07</u>	<u>\$3.69</u>
<u>Light Industrial</u>	<u>\$0.36</u>	<u>\$0.17</u>	<u>\$0.57</u>	<u>\$5.73</u>	<u>\$0.14</u>	<u>\$6.97</u>

<u>Other Nonresidential Uses</u>	<u>Impact Fee Rates for Other Nonresidential Uses Based on Unique Demand Indicators</u>					
	<u>Municipal Facilities</u>	<u>Police</u>	<u>Fire</u>	<u>Affordable Housing</u>	<u>Transportation</u>	<u>TOTAL</u>
<u>Nursing Home/Assisted Living (per bed)</u>	<u>\$132.60</u>	<u>\$70.38</u>	<u>\$208.08</u>	<u>\$895.19</u>	<u>\$56.10</u>	<u>\$1,362.35</u>
<u>Lodging (per room)</u>	<u>\$89.76</u>	<u>\$212.16</u>	<u>\$141.78</u>	<u>\$1,093.89</u>	<u>\$168.30</u>	<u>\$1,705.89</u>

Section 6. Section 8-9-1, B.R.C. 1981, is amended to read:

8-9-1. - Purpose and Legislative Intent.

- (a) Purpose: The purpose of this chapter is to charge an impact fee to applicants for nonresidential and residential development in the city to fund capital improvements needed to address demand attributable to new development for police, fire, library, human services, general municipal facilities and parks and recreation. The purpose of this section is to also charge an impact fee to applicants for nonresidential development in the city attributable to new development for affordable housing.
- (b) Legislative Intent: The city council recites the following legislative findings and statements of intent that were taken into consideration in the adoption of this chapter:
- (1) The fees collected pursuant to this chapter are not intended to fund operation, maintenance or replacement costs or otherwise fund the general costs of government.
 - (2) The capital facility impact fee applies regardless of the value of the property developed. The capital facility impact fee shall be imposed in addition to the development excise taxes imposed by Chapters 3-8 and 3-9 and water, sanitary sewer and storm water and flood management plant investment fees imposed by Sections 11-1-52, "Water Plant Investment Fee," 11-2-33, "Wastewater Plant

1 Investment Fee,” and 11-5-11, “Storm Water and Flood Management Utility
2 Plant Investment Fee,” B.R.C. 1981, or other fees, taxes or charges of the city.

3 (3) The capital facility impact fee established in this chapter and Section 4-20-62,
4 “Capital Facility Impact Fee,” B.R.C. 1981, is based in part on the methodology
5 in the “Development Impact Fee Study” prepared by TischlerBise, Fiscal,
6 Economic & Planning Consultants, dated January 8, 2009.

7 (4) TischlerBise updated the 2009 study which provides the basis for the capital
8 facility impact fee established in this chapter and Section 4-20-62, “Capital
9 Facility Impact Fee,” B.R.C. 1981, based in part on the methodology in the “2016
10 Capital Facility Development Impact Fee Study, City of Boulder Colorado - Sept.
11 20, 2016.” and “2016 Transportation Development Impact Fee Study, City of
12 Boulder Colorado - Sept. 20, 2016.”

13 (5) The portion of the capital facility impact fee for affordable housing established in
14 this chapter and Section 4-20-62, “Capital Facility Impact Fee,” B.R.C. 1981, is
15 based in part on the methodology in the “Development Excise Tax” prepared by
16 TischlerBise, Fiscal, Economic & Planning Consultants, dated January 9, 2009.
17 The methodology used in that study is an approach based on the Boulder Valley
18 Comprehensive Plan goal of at least ten percent of the total existing housing stock
19 as permanently affordable housing. The fee is intended to defray the costs of
20 providing permanently affordable housing that is associated with non-residential
21 development.

22 (6) Keyser Marston Associates, a real estate advisory firm with expertise in
23 calculating the nexus between nonresidential development and its impacts on the
24 communities’ need for affordable housing updated the 2009 study which provides
25 the basis for the affordable housing commercial linkage fee established in this
chapter and Section 4-20-62, “Capital Facility Impact Fee,” B.R.C. 1981, based
in part on the methodology in the “2016 Jobs Housing Nexus Analysis, City of
Boulder Colorado - Sept. 20, 2016.”

(57) The city council finds that the development impact fee study and this
chapter define classifications that are generally applicable to broad classes of
property; quantifies the reasonable impacts of proposed development on capital
facilities; and establishes charges at a level no greater than necessary to defray
such impacts directly related to proposed development.

(68) The city council intends that the impact fees collected pursuant to this
chapter are to be used to fund expenditures for capital facilities attributable to
new development.

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Section 7. This ordinance shall be effective July 1, 2017.

Section 8. This ordinance is necessary to protect the public health, safety, and welfare of the residents of the city, and covers matters of local concern.

Section 9. The city council deems it appropriate that this ordinance be published by title only and orders that copies of this ordinance be made available in the office of the city clerk for public inspection and acquisition.

INTRODUCED, READ ON FIRST READING, AND ORDERED PUBLISHED BY TITLE ONLY this 1st day of November, 2016.

Suzanne Jones
Mayor

Attest:

Lynnette Beck
City Clerk

READ ON SECOND READING, PASSED, AND ADOPTED this 15th day of November, 2016.

Suzanne Jones
Mayor

Attest:

Lynnette Beck
City Clerk



DRAFT #3

2016 Capital Facility Development Impact Fee Study

Prepared for:
City of Boulder, Colorado

September 20, 2016



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**Capital Facility
Development Impact Fee Study
City of Boulder, Colorado**

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Executive Summary

The City of Boulder retained TischlerBise to prepare an Impact Fee Study for various infrastructure categories. This report updates the Development Impact Fee Study prepared in 2009 and adopted by the City of Boulder in 2010.

Impact fees are one-time payments used to fund system improvements needed to accommodate development. This report documents the data, methodology, and results of the impact fee calculations. The methods used to calculate impact fees in this study are intended to satisfy all legal requirements governing such fees, including provisions of the U. S. Constitution and the Colorado Development Impact Fee Act. The following infrastructure categories have been developed with methodologies that meet the requirements to be adopted as impact fees.

- Library
- Parks and Recreation
- Human Services
- Municipal Facilities
- Police
- Fire

Impact Fee Summary

As documented in this report, impact fees for the City of Boulder are proportionate and reasonably related to the capital facility service demands of new development. The written analysis of each impact fee methodology, establish that impact fees are necessary to achieve an equitable allocation of costs in comparison to the benefits received. Impact fee methodologies also identify the extent to which newly developed properties are entitled to various types of credits to avoid potential double payment of capital costs. An impact fee represents new growth's proportionate share of capital facility needs. By law, impact fees can only be used for *capital* improvements, not operating or maintenance costs. Furthermore, impact fee revenues can only be used for capital improvements that expand capacity.

Impact fees are subject to legal standards, which require fulfillment of three key elements: need, benefit, and proportionality.

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

TischlerBise documented appropriate demand indicators by type of development. Specific capital costs have been identified using local data and costs. This report includes summary tables indicating the specific factors used to derive the impact fees. These factors are referred to as level of service, or infrastructure standards.

Methodologies and Approach

There are three basic *methods* used to calculate impact fees.

- The **incremental expansion method** documents the current level of service for each type of public facility, in both quantitative and qualitative measures. The intent is to use revenue collected to expand or provide additional facilities, as needed to accommodate new development, based on the current cost to provide capital improvements.
- The **plan-based method** is commonly used for public facilities that have adopted plans or engineering studies to guide capital improvements, such as utility systems.
- A third approach, known as the **cost recovery method**, is based on the rationale that new development is paying for its share of the useful life and remaining unused capacity of an existing facility.

A summary is provided in Figure 1 showing the methodologies, infrastructure components, and allocations used to calculate impact fees for the City of Boulder.

Figure 1. Summary of Proposed Fee Methods and Infrastructure Components

Fee Category	Components	Methodology	Cost Allocation
Library	<ul style="list-style-type: none"> ▪ Facilities ▪ Collection Materials 	<ul style="list-style-type: none"> ▪ Incremental ▪ Incremental 	100% Residential
Parks and Recreation	<ul style="list-style-type: none"> ▪ Outdoor Park Improvements ▪ Recreation Facilities and Pools ▪ Parks and Rec Admin & Support Facilities 	<ul style="list-style-type: none"> ▪ Incremental ▪ Incremental ▪ Incremental 	100% Residential
Human Services	<ul style="list-style-type: none"> ▪ Human Services Facilities 	<ul style="list-style-type: none"> ▪ Incremental 	100% Residential
Municipal Facilities	<ul style="list-style-type: none"> ▪ Office Buildings ▪ Land ▪ Municipal Court 	<ul style="list-style-type: none"> ▪ Incremental ▪ Cost Recovery ▪ Plan-Based 	Functional Population
Police	<ul style="list-style-type: none"> ▪ Station Space ▪ Communications Infrastructure 	<ul style="list-style-type: none"> ▪ Incremental ▪ Incremental 	Functional Population
Fire	<ul style="list-style-type: none"> ▪ Station Space ▪ Storage Facility ▪ Apparatus ▪ Land 	<ul style="list-style-type: none"> ▪ Incremental ▪ Plan-Based ▪ Incremental ▪ Incremental 	Calls for Service

Credits

A general requirement common to impact fee methodologies is the evaluation of *credits*. Two types of credits should be considered, **future revenue credits** and **site-specific credits**. Revenue credits may be necessary to avoid potential double payment situations arising from a one-time impact fee plus the payment of other revenues (e.g., property taxes) that may also fund growth-related capital improvements. Because new development may provide front-end funding of infrastructure, there is a potential for double payment of capital costs due to future payments on debt for public facilities. This type of credit is not necessary for any of the impact fees calculated herein.

The second type of credit is a **site-specific credit** for system improvements that have been included in the impact fee calculations. Policies and procedures related to site-specific credits for system improvements should be addressed in the ordinance that establishes the development fees. However, the general concept is that developers may be eligible for site-specific credits only if they provide system improvements that have been included in the impact fee calculations. Project

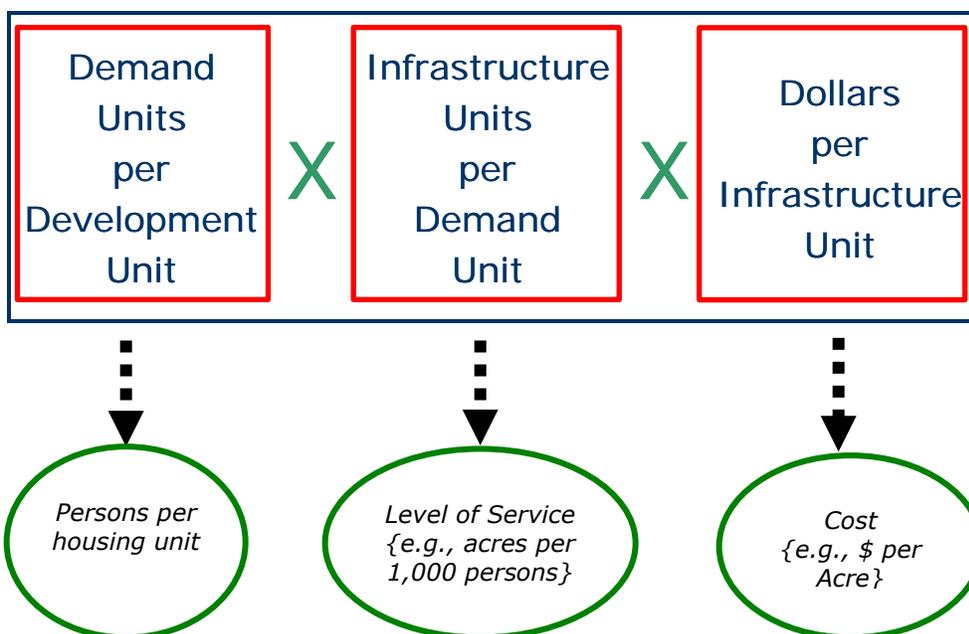
improvements normally required as part of the development approval process are not eligible for credits against impact fees.

Generic Impact Fee Calculation

In contrast to development exactions, which are typically referred to as project-level improvements, impact fees fund growth-related infrastructure that will benefit multiple development projects, or the entire jurisdiction (often referred to as “system-level” improvements). The basic steps in a generic impact fee formula are illustrated in Figure 2. The first step (see the left box) is to determine an appropriate demand indicator, or service unit, for the particular type of infrastructure. The demand/service indicator measures the number of demand or service units for each unit of development.

For example, an appropriate indicator of the demand for parks is population growth and the increase in population can be estimated from the average number of persons per occupied housing unit. The second step in the generic impact fee formula is shown in the middle box below. Infrastructure units per demand unit are typically called Level-Of-Service (LOS) standards. In keeping with the park example, a common LOS standard is park acreage per thousand people. The third step in the generic impact fee formula, as illustrated in the right box, is the cost of various infrastructure units. To complete the park example, this part of the formula would establish the cost per acre for land acquisition and/or development.

Figure 2. Generic Impact Fee Formula



Maximum Allowable Impact Fees by Type of Land Use

The impact fees calculated for the City of Boulder represent the highest amount feasible for each type of applicable land use, or *maximum allowable* amounts, which represents new growth's proportionate share of the cost for the appropriate capital facilities. Figure 3 provides the schedule of *maximum allowable impact fees* by type of land use. For residential impact, fees will be imposed according to square feet of finished floor area. For nonresidential development, fees will be assessed per square feet of floor area or unique demand indicators such as the number of rooms in a hotel. 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 the City's level of service standards.

Figure 3. Summary of Maximum Allowable Impact Fees

RESIDENTIAL IMPACT FEES		MAXIMUM ALLOWABLE IMPACT FEES Per Development Unit						
Square Feet	Development Unit	Library	Parks & Recreation	Human Services	Municipal Facilities	Police	Fire	TOTAL
600	Dwelling Unit	\$424	\$2,656	\$81	\$259	\$216	\$193	\$3,829
800	Dwelling Unit	\$533	\$3,337	\$102	\$326	\$271	\$242	\$4,811
1,000	Dwelling Unit	\$617	\$3,859	\$119	\$377	\$314	\$280	\$5,566
1,200	Dwelling Unit	\$686	\$4,290	\$132	\$419	\$349	\$311	\$6,187
1,400	Dwelling Unit	\$744	\$4,653	\$143	\$455	\$379	\$338	\$6,712
1,600	Dwelling Unit	\$794	\$4,971	\$153	\$486	\$405	\$361	\$7,170
1,800	Dwelling Unit	\$842	\$5,266	\$162	\$515	\$429	\$382	\$7,596
2,000	Dwelling Unit	\$878	\$5,493	\$169	\$537	\$447	\$399	\$7,923
2,200	Dwelling Unit	\$914	\$5,720	\$176	\$559	\$466	\$415	\$8,250
2,400	Dwelling Unit	\$947	\$5,924	\$182	\$579	\$482	\$430	\$8,544
2,600	Dwelling Unit	\$980	\$6,129	\$189	\$599	\$499	\$445	\$8,841
2,800	Dwelling Unit	\$1,009	\$6,310	\$194	\$617	\$514	\$458	\$9,102
3,000	Dwelling Unit	\$1,034	\$6,469	\$199	\$632	\$527	\$470	\$9,331
3,200	Dwelling Unit	\$1,056	\$6,606	\$203	\$646	\$538	\$480	\$9,529
3,400	Dwelling Unit	\$1,081	\$6,764	\$208	\$661	\$551	\$491	\$9,756
3600+	Dwelling Unit	\$1,103	\$6,901	\$212	\$674	\$562	\$501	\$9,953

NONRESIDENTIAL IMPACT FEES		MAXIMUM ALLOWABLE IMPACT FEES Per Development Unit						
Land Use	Development Unit	Library	Parks & Recreation	Human Services	Municipal Facilities	Police	Fire	TOTAL
Retail / Restaurant / Service	Square Feet of Floor Area	\$0	\$0	\$0	\$0.38	\$0.71	\$0.61	\$1.70
Office	Square Feet of Floor Area	\$0	\$0	\$0	\$0.55	\$0.28	\$0.87	\$1.70
Light Industrial	Square Feet of Floor Area	\$0	\$0	\$0	\$0.35	\$0.17	\$0.56	\$1.08
Warehousing	Square Feet of Floor Area	\$0	\$0	\$0	\$0.14	\$0.09	\$0.22	\$0.45
Institutional	Square Feet of Floor Area	\$0	\$0	\$0	\$0.12	\$0.23	\$0.19	\$0.54
Hospital	Square Feet of Floor Area	\$0	\$0	\$0	\$0.45	\$0.33	\$0.71	\$1.49
Nursing Home/Assisted Living	Bed	\$0	\$0	\$0	\$130.00	\$69.00	\$204.00	\$403.00
Nursing Home/Assisted Living*	Square Feet of Floor Area	\$0	\$0	\$0	\$0.32	\$0.17	\$0.13	\$0.62
Lodging	Room	\$0	\$0	\$0	\$88.00	\$208.00	\$139.00	\$435.00
Lodging**	Square Feet of Floor Area	\$0	\$0	\$0	\$0.14	\$0.34	\$0.06	\$0.54

* For illustration and comparison with per square foot impact fees, assumes an average of 400 sq. ft. per bed

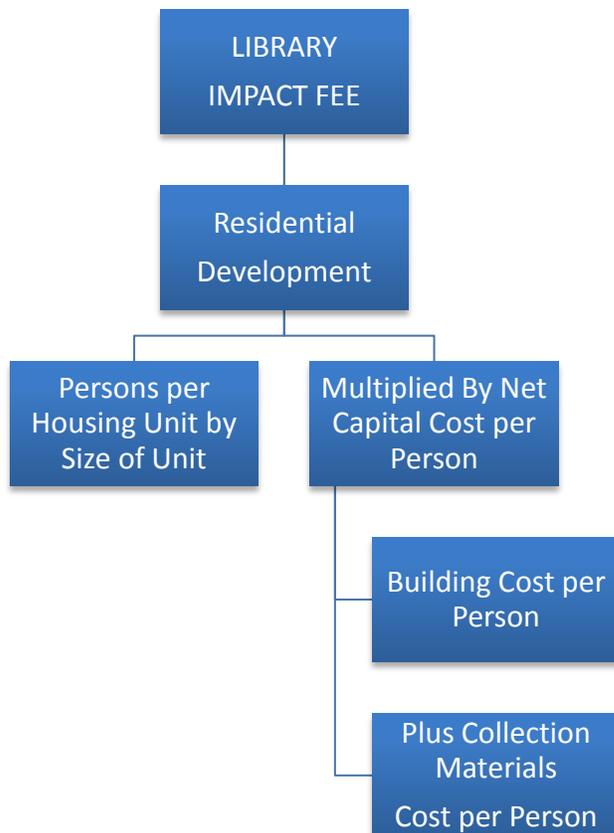
** For illustration and comparison with per square foot impact fees, assumes an average of 600 sq. ft. per room

Library Impact Fees

Methodology

The Library impact fee calculation uses the incremental expansion methodology. Components of the Library fee include costs for Library buildings and materials included in the Library’s collections. The Library system current consists of a Main Library and four branch locations. It is anticipated that the City will expand facilities in the future to serve growth to maintain current levels of service. An incremental approach is also used for collection materials. All costs are allocated 100 percent to residential development. Figure 4 diagrams the general methodology used to calculate the Library Impact Fee. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the impact fee components. The 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 4. Library Impact Fee Methodology Chart



Library Level of Service Standards and Costs

Library Buildings Incremental Cost Component

The City of Boulder Library System consists of a Main Library and four branch locations. Total library system square footage totals 109,123 square feet. As noted above, the City anticipates expanding the Library System in the future to serve new growth. Therefore an incremental methodology is used where current levels of service and current cost per capita are used.

Figure 5 provides levels of service and costs for the City of Boulder Library System. Current replacement costs for buildings (including contents, equipment, and miscellaneous improvements) are from the City of Boulder 2015 property schedule. To reflect total replacement costs for Library facilities, 30 percent is added to the construction cost to reflect “soft” costs for predevelopment, site improvements, and other non-construction costs (per City of Boulder Facilities and Asset Management (FAM)). According to information provided by the City, the Library System has replacement value of \$27,149,229 reflecting facilities owned by the City. The replacement cost per square foot is \$269 resulting in a cost per person of \$280 (1.04 sq. ft. per person x \$269 = \$280).

Figure 5. Library Buildings Level of Service Standards and Cost Factors

Facility Name	Location	Current Square Feet	Current Replacement Cost (Building Costs)*	Current Replacement Cost (Soft Costs)**	Total Costs	Cost/SF***
Main Library	1001 Arapahoe Ave.	84,760	\$18,191,871	\$5,457,561	\$23,649,433	\$279
Meadows Branch	4800 Baseline Road	7,812	leased	na	na	na
Reynolds Branch	3595 Table Mesa Drive	10,371	\$1,732,088	\$519,626	\$2,251,714	\$217
Carnegie Branch	1125 Pine	5,610	\$960,063	\$288,019	\$1,248,082	\$222
North Boulder Corner Branch	4600 Broadway	570	leased	na	na	na
TOTAL		109,123	\$20,884,022	\$6,265,207	\$27,149,229	
TOTAL City Owned		100,741	\$20,884,022	\$6,265,207	\$27,149,229	\$269

Cost per Square Foot=> \$269

BASED ON TOTAL SPACE (CITY OWNED AND LEASED)

Total Square Feet	109,123
Population in 2015	104,808
Square Feet per Person	1.04
Total Cost per Sq. Ft.	\$269
Cost per Person	\$280

* Building, contents, equipment, miscellaneous improvements (City of Boulder Property Schedule, 2015).

** Soft costs estimated at 30 percent of construction costs per City of Boulder Facilities and Asset Management.

*** Average cost per square foot is average of City owned facilities.

Sources: City of Boulder Property Schedule, 2015; City of Boulder Facilities and Asset Management.

Library Collection Materials Incremental Expansion

The Library System's collection includes adult and juvenile books, electronic/audio books, music CDs, DVDs, periodicals, and an eBook Database. The total number of current units is 522,815 with a total replacement value of approximately \$8.7 million. Based on the current estimated City population of 104,808, this equates to a level of service of \$83 per person. Figure 6 provides detail on the current inventory and average unit costs for each type of material. Unit costs were provided to TischlerBise by City staff.

Figure 6. Library Collection Materials Level of Service Standards

Type of Material	# of units	Unit Price	Current Value
Books	487,221	\$16	\$7,795,536
Audio Books	8,225	\$40	\$329,000
Music CDs	9,575	\$16	\$153,200
DVDs	17,474	\$22	\$384,428
Periodicals: magazines	320	\$60	\$19,200
Periodicals: newspapers	33	\$460	\$15,180
eBook Database	1	\$195,938	\$195,938
TOTAL	522,815		\$8,681,364

Total Units	522,815
Total Cost	\$8,681,364
Population in 2015	104,808
Units per Person	4.99
Cost per Person	\$83

Source: City of Boulder Library Department.

Credit Evaluation

The City does not have any outstanding debt for Library facilities, therefore a credit is not necessary.

Library Input Factors and Maximum Supportable Impact Fees

Infrastructure standards used to calculate the Library impact fees are shown in the boxed area at the top of Figure 7. Impact fees for Libraries are based on household sizes for all types of units by square footage per unit. Level of service standards are based on costs per person for Library buildings and collection materials as described in the previous sections and summarized below. Each cost component of the impact fee is shown as a cost per person.

The bottom portion of Figure 7 shows maximum supportable impact fees for Libraries. The amounts are calculated by multiplying the persons per housing unit for each size of housing unit by the net capital cost per person.

For example, the impact fee for a dwelling unit of 600 square feet or less is calculated by multiplying the persons per housing unit of 1.17 by the net capital cost of \$363 for an impact fee amount of \$424 per unit. (Detail on number of persons by square feet of finished floor area is provided in the Appendix.)

Figure 7. Library Input Factors and Maximum Supportable Impact Fees

Level Of Service

Factors

Building Cost
 Collection Cost
 Debt Service Credit
 Net Capital Cost

	<i>Per Person</i>
	\$280
	\$83
	\$0
	\$363

Square Feet	Development Unit	Persons per Housing Unit	Impact Fee per Housing Unit
<i>(finished floor area)</i>		<i>All Housing Unit Types</i>	<i>All Housing Unit Types</i>
Residential (by square feet of finished living space)			
600	Dwelling Unit	1.17	\$424
800	Dwelling Unit	1.47	\$533
1,000	Dwelling Unit	1.70	\$617
1,200	Dwelling Unit	1.89	\$686
1,400	Dwelling Unit	2.05	\$744
1,600	Dwelling Unit	2.19	\$794
1,800	Dwelling Unit	2.32	\$842
2,000	Dwelling Unit	2.42	\$878
2,200	Dwelling Unit	2.52	\$914
2,400	Dwelling Unit	2.61	\$947
2,600	Dwelling Unit	2.70	\$980
2,800	Dwelling Unit	2.78	\$1,009
3,000	Dwelling Unit	2.85	\$1,034
3,200	Dwelling Unit	2.91	\$1,056
3,400	Dwelling Unit	2.98	\$1,081
3600+	Dwelling Unit	3.04	\$1,103

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per person** compared to the **current cost per person** from the current City of Boulder Impact Fee schedule for the Library category. It should be noted that the current cost per person shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.¹ Figure 8 compares the draft calculated cost to the current schedule for the Library category.

Figure 8. Library Fee Comparison: Current Cost per Person to Updated Cost per Person

	Cost per Person (2016)	Current City of Boulder Impact Fee Cost per Person[^]	Increase / Decrease
Library	\$363	\$215	\$148

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

¹ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Projected Revenue

The revenue projection shown in Figure 9 is calculated based on the preliminary calculated 2016 Library Impact Fee and the development projections described in the land use assumptions (Appendix A). To the extent the rate of development either accelerates or slows down, there will be a corresponding change in Impact Fee revenue and the timing of the need for capital improvements.

Figure 9. Projected Library Impact Fee Revenue

		<i>Residential</i>	
		<i>Fee (Wtd Avg)</i>	\$776
		per housing unit	
		<i>Year</i>	<i>Housing Units</i>
Base	2015		45,740
Year 1	2016		46,012
Year 2	2017		46,288
Year 3	2018		46,566
Year 4	2019		46,846
Year 5	2020		47,127
Year 6	2021		47,409
Year 7	2022		47,694
Year 8	2023		47,980
Year 9	2024		48,268
Year 10	2025		48,557
<i>Ten-Yr Increase</i>			2,817
Projected Revenue =>			\$2,186,294

Parks and Recreation Impact Fees

Methodology

The City of Boulder Parks and Recreation Impact Fee is derived using an incremental expansion methodology. Parks and Recreation impact fees should only be assessed on residential development. Three main components are included in the fee calculation: Outdoor Park Improvements, Recreation Facilities and Pools, and Administrative/Support Facilities. Outdoor Park Improvements include facilities that are community-level facilities serving the entire city, including larger Neighborhood Parks with athletic fields or other improvements that draw users throughout Boulder. Also included in the Outdoor Park Improvement component are Community Parks and Recreation Facilities both of which serve a citywide service area.

Additional land for parks is not included in the impact fee calculation because the City has an inventory of parkland on which it intends to make improvements with impact fees. According to the *2014 Boulder Parks and Recreation Department Master Plan*, “the community is well poised to meet future needs” [for parkland] and that “it is anticipated that there will not be any additional requirements to acquire new lands.”² However, it is assumed that BRPD will develop existing undeveloped park lands to balance recreation needs and “maintaining a balance of developed and natural areas in urban parks.”³

A second major component included in the fee calculation is Recreation Facilities and Pools. The City’s Recreation facilities serve a citywide population and the City expects to expand those types of facilities as well. The third and final component is Parks and Recreation Administrative / Support Facilities.

All facility costs are allocated 100 percent to residential development. Smaller-scale recreation amenities are excluded because they serve more limited areas, which would require implementation of multiple service areas and are not recommended due to higher administrative costs and limited revenue generated by sub-areas.

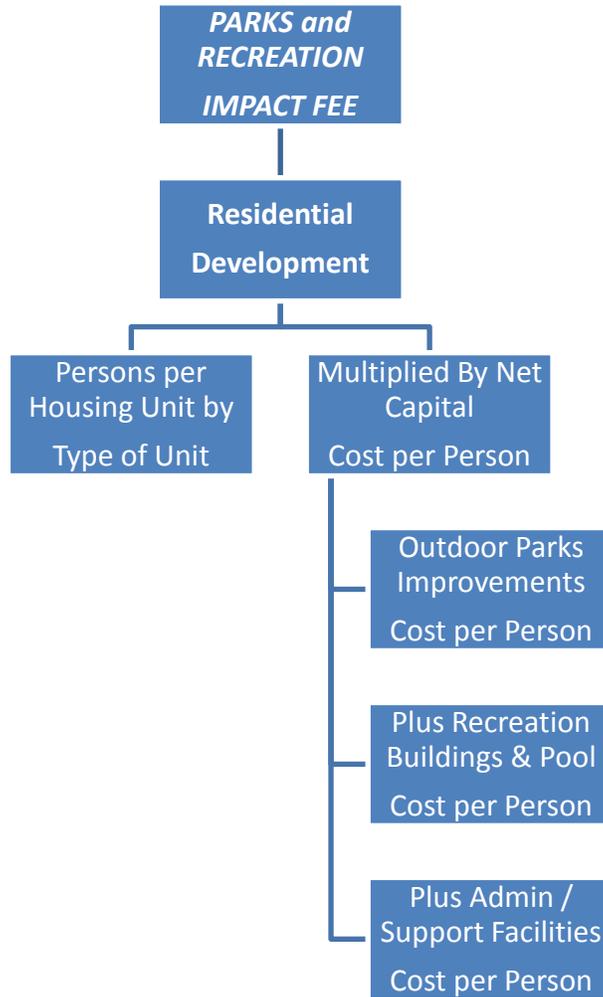
Figure 10 diagrams the general methodology used to calculate the Parks and Recreation Impact Fee. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the

² Boulder Parks and Recreation Department Master Plan, p. 42.

³ Ibid.

impact fee components. The impact fee is derived from the product of persons per housing unit (by type) multiplied by the net capital cost per person. The boxes in the next level down indicate detail on the components.

Figure 10. Parks and Recreation Impact Fee Methodology Chart



Parks & Recreation Level of Service Standards and Costs

Outdoor Park Improvements

The Outdoor Park component of the Parks and Recreation impact fees are based on the City's current inventory of existing citywide parks. The demand base for the City's park facilities is population. Levels of service are based on the current amount of infrastructure provided for the existing population. Outdoor Park Improvements include facilities that are community-level facilities serving the entire City, such as Recreation Facilities, Community, and larger Neighborhood Parks with athletic fields or other recreational amenities that draw from a citywide service area.

The Park impact fee component is based on the incremental expansion methodology, consistent with the City's plans to make improvements to undeveloped parks. Natural lands and smaller more limited neighborhood parks are excluded from the impact fees. Figure 13 provides an inventory of Outdoor Park improvements with current unit prices.

Park improvements have an average total cost of approximately \$309,000 per acre. On a per capita basis, park improvements cost \$1,669 for each additional resident in Boulder. City staff provided unit prices for each type of improvement. Miscellaneous costs equal \$250,000 per acre (included in the \$309,074 per acre cost), which include such items as lighting, paving (parking lots, sidewalks), site work, irrigation, and landscaping.

Figure 11. Outdoor Park Improvements Level of Service Standards and Cost Factors

Site	Park Type	Total Acres	City Owned Improved Acres	Baseball Fields		Softball Fields		Multi-Use Fields			Courts					Other Amenities				
				Premier	General	Premier	General	Premier	Turf Fields	General	Tennis Courts	Sand Volleyball	Basketball	Handball	Roller SportRink	Picnic Shelters	Restrooms	Playgrounds	Dog Parks	
Arapahoe Ridge Park*	Neighborhood Park	7.6	7.6		1.0							2.0					1		1	
Aurora 7 Park*	Neighborhood Park	7.9	7.9		3.0															
Chautauqua	Neighborhood Park	12.5	12.5									1.0					1	1	1	
Crestview	Neighborhood Park	7.8	7.8														1		1	
Eaton	Neighborhood Park	25.3	0.3														1			
Elks	Neighborhood Park	8.6	8.6														1		1	
Howard Heuston Park	Neighborhood Park	7.6	7.6											1.0					1	1
Martin	Neighborhood Park	9.6	9.6		1.0					1.0		2.0					1	1	1	
North Boulder	Neighborhood Park	13.4	13.4		2.0					1.0				1.0			1	1	1	
Park East	Neighborhood Park	4.5	4.5											1.0			1		1	
Scott Carpenter	Neighborhood Park	18.9	18.9	1.0											1	1	1	1		
Tantra Park	Neighborhood Park	21.7	21.7							1.0							1		1	
Tom Watson Park**	Neighborhood Park	31.4	31.4		4.0					1.0	4.0	2.0	1.0	1.0			1	1	1	
East Boulder Community Park	Community Park	53.6	40.6						2.0	1.0	5.0	4.0	2.0	4.0			5	1	1	2
East Boulder Community Center	Recreation Facilities	3.0	3.0																	
Foothills Community Park	Community Park	65.7	46.7							3.0				1.0		2	8	1	3	3
North Boulder Recreation Center	Recreation Facilities	1.5	1.5																	
Harlow Platts Community Park	Community Park	51.3	38.3							1.0	4.0	4.0				1	2	1	1	
South Boulder Recreation Center	Recreation Facilities	0.6	0.6							1.0										
Valmont City Park South	City Park	83.1	40.0							1.0										
Valmont City Park North	City Park	47.0	45.0																	
Boulder Reservoir Regional Park	Recreation Facilities	116.0	116.0														4	1	1	2
East Mapleton Ballfields	Recreation Facilities	8.3	8.3				3.0						15.0				1	1	1	
Gerald Stazio	Recreation Facilities	42.8	30.0				7.0										1	2	1	
Pleasantview Fields	Recreation Facilities	53.8	43.0					10.0									2	1		
Spruce Pool	Recreation Facilities	1.2	1.2																1	
Subtotal Neighborhood Parks		176.8	151.8																	
Subtotal Community Parks		170.6	125.6																	
Subtotal City Parks		130.1	85.0																	
Subtotal Recreation Facilities		227.2	203.6																	
TOTALS		704.7	566.0	1.0	11.0	10.0	0.0	10.0	2.0	11.0	18.0	25.0	7.0	5.0	4.0	35.0	15.0	19.0	8.0	

Unit Price ==>	\$250,000	\$810,880	\$222,600	\$810,880	\$810,880	\$426,250	\$1,535,000	\$185,250	\$70,000	\$10,000	\$45,000	\$30,000	\$55,000	\$80,000	\$150,000	\$193,500	\$222,000
Total Value ==>	\$141,500,000	\$810,880	\$2,448,600	\$8,108,800	\$0	\$4,262,500	\$3,070,000	\$2,037,750	\$1,260,000	\$250,000	\$315,000	\$150,000	\$220,000	\$2,800,000	\$2,250,000	\$3,676,500	\$1,776,000

TOTAL AMENITY VALUE	\$33,436,030
AMENITY VALUE PER ACRE	\$59,074

SUMMARY			
Population in 2015	104,808		
		Total	Improved
Acres***		704.7	566.0
Level of Service: Acres per 1,000 Population		6.7	5.4
Value of Improvements/Assets	\$33,436,030		
Other Site Improvements****	\$141,500,000		
Total Improvements	\$174,936,030		
Cost per Improved Acre	\$309,074		
Cost per Capita	\$1,669		

* Owned by City but jointly used with Boulder Valley School District

** Not owned by the City; City has a 99-year lease on it and therefore included in current level of service.

*** Does not reflect total Park inventory; reflects only those types of parks that include system-level improvements on which the development impact fees are based

**** Estimated @ \$250,000 per acre for design, permitting, and construction (other than amenities).

Recreation Buildings and Pools

The Recreation Buildings and Pools component of the Parks and Recreation impact fee is based on the current square footage and current value of recreational facilities serving the City. As shown in Figure 12, total square footage for the City’s recreational facilities is 182,509 square feet. The incremental expansion approach is used as the City plans to maintain the current level of service to accommodate new development.

Current replacement costs for buildings (including contents, equipment, and miscellaneous improvements) are from the City of Boulder 2015 property schedule and City of Boulder Facility Study (for specified properties). To reflect total replacement costs for Recreation Buildings and Pools, 30 percent is added to the building cost from the property schedule to reflect “soft” costs for predevelopment, site improvements, and other non-construction costs (per City of Boulder Facilities and Asset Management (FAM)). Total estimated current value of these facilities is approximately \$57 million, or \$543 for each additional resident in Boulder.

Figure 12. Recreation Buildings and Pools Level of Service Standards and Cost Factors

Facility Name	Address	Current Square Feet	Year Built	Year Upgraded	Current Replacement Cost (Building Costs)*	Contents \$*	Misc \$*	Current Replacement Cost (Soft Costs)**	Total Costs***	Cost/SF
Salberg Studio	19TH & ELDER	4,054	1974, 1976	2001	\$464,486	\$28,676		\$139,346	\$632,507	\$156
South Boulder Recreation Center	1350 GILLASPIE	35,603	1973	1998	total value*** =====>				\$9,376,617	\$263
North Boulder Recreation Center	3170 BROADWAY	62,166	2002	na	total value*** =====>				\$21,337,047	\$343
East Boulder Community Ctr (77% of total)^	5660 SIOUX DR	42,417	1991	na	total value*** =====>				\$14,558,654	\$343
Pottery Lab	1010 AURORA	2,565	1924	2001	\$296,535	\$18,434	\$0	\$88,961	\$403,930	\$157
Spruce Pool Bath House/Filter	2102 Spruce Street	1,810	1961		\$298,098	\$0	\$0	\$89,429	\$387,527	\$214
Boulder Reservoir (all bldgs)	5151 NORTH 51ST	9,742	1971, 1984, 1986	na	total value*** =====>				\$3,014,557	\$309
Scott Carpenter Pool	30th & Arapahoe	10,550	1963		\$3,113,704			\$934,111	\$4,047,815	\$384
Spruce Pool	2040 21ST STREET	6,466	2001		\$1,269,708			\$380,912	\$1,650,620	\$255
Scott Carpenter Athletic Facilities	30TH & ARAPAHOE	7,136	1963, 1995, 2002	na	\$1,032,097	\$53,255	\$103,500	\$309,629	\$1,498,481	\$210
TOTALS		182,509			\$6,474,628	\$100,365	\$103,500	\$1,942,388	\$56,907,757	\$312

Total Square Feet	182,509
Population in 2015	104,808
Square Feet per Person	1.74
Total Cost per Sq. Ft.	\$312
Cost per Person	\$543

* Building, contents, equipment, miscellaneous improvements (City of Boulder Property Schedule, 2015).
 ** Soft costs estimated at 30 percent of construction costs per City of Boulder Facilities and Asset Management.
 *** Source for properties with values included only in this column: Farnsworth Group/BUILDER, City of Boulder Facility Study (via City of Boulder Parks and Recreation)
 ^ Facility also houses Senior Center; square footage and value shown is for Recreation Center portion.

Parks and Recreation Administration and Support Facilities

Also included in the fee calculation is a component for Administrative and Support Facilities based on the current square footage and current value of facilities serving the City. As shown in Figure 13, total square footage for the City’s Parks and Recreation support facilities is 68,325 square feet. The incremental expansion approach is used as the City plans to maintain the current level of service to accommodate new development.

Current replacement costs for buildings (including contents, equipment, and miscellaneous improvements) are from the City of Boulder 2015 property schedule. To reflect total replacement costs for Parks and Recreation Administrative and Support Facilities, 30 percent is added to the construction cost to reflect “soft” costs for predevelopment, site improvements, and other non-construction costs (per City of Boulder Facilities and Asset Management (FAM)). Total estimated current value of these facilities is approximately \$6.1 million, or \$58 for each additional resident in Boulder.

Figure 13. Administrative and Support Facilities Level of Service Standards and Cost Factors

Facility Name	Address	Current Square Feet	Year Built	Year Upgraded	Current Replacement Cost (Building Costs)*	Contents \$	Misc \$	Current Replacement Cost (Soft Costs)**	Total Costs	Cost/SF
Iris Center	3198 BROADWAY	16,372	1957	2003	\$1,774,157	\$98,950	\$25,000	\$532,247	\$2,430,354	\$148
Park Operations Building	5200 PEARL ST	10,073	1989	na	\$941,422	\$74,761		\$282,427	\$1,298,611	\$129
Tantra Park Maintenance Shop	585 TANTRA DR	3,062	1984	na	\$242,918	\$37,893		\$72,875	\$353,686	\$116
Stazio Ballfields Maintenance Shop	2445 Stazio Drive	5,150	1997	na	\$356,808	\$0		\$107,042	\$463,850	\$90
Scott Carpenter Athletics Office	30TH & ARAPAHOE	1,052	1963	2003	\$134,137	\$0	\$0	\$40,241	\$174,378	\$166
Valmont Storage Building	5325 Valmont	30,434	1965	na	\$785,595	\$0		\$235,679	\$1,021,274	\$34
Foothills Maintenance Facility	800 Cherry Ave.	2,182	2000	na	\$301,955	\$0	\$0	\$90,587	\$392,542	\$180
TOTALS		68,325			\$4,536,992	\$211,604	\$25,000	\$1,361,098	\$6,134,695	\$90

Total Square Feet	68,325
Population in 2015	104,808
Square Feet per Person	0.65
Total Cost per Sq. Ft.	\$90
Cost per Person	\$58

* Building, contents, equipment, miscellaneous improvements (City of Boulder Property Schedule, 2015).

** Soft costs estimated at 30 percent of construction costs per City of Boulder Facilities and Asset Management.

Credit Evaluation

The City does not have any outstanding debt for Parks and Recreation facilities that will be retired with property taxes, therefore a credit is not necessary.

Parks and Recreation Input Factors and Maximum Supportable Impact Fees

Infrastructure standards used to calculate the Parks and Recreation impact fees are shown in the boxed area at the top of Figure 14. Impact fees for Parks and Recreation are based on household sizes for all types of units by square footage per unit. Level of service standards are based on costs per person for Parks and Recreation Facilities as described in the previous sections and summarized below. Each cost component of the impact fee is shown as a cost per person.

The bottom portion of Figure 14 shows maximum supportable impact fees for Parks and Recreation. The amounts are calculated by multiplying the persons per housing unit for each size of housing unit by the net capital cost per person.

For example, the impact fee for a dwelling unit of 600 square feet or less is calculated by multiplying the persons per housing unit of 1.17 by the net capital cost of \$2,270 for an impact fee amount of \$2,656 per unit. (Detail on number of persons by square feet of finished floor area is provided in the Appendix.)

Figure 14. Parks and Recreation Input Factors and Maximum Supportable Impact Fees

<i>Level Of Service</i>	<i>Factors</i>
Outdoor Park Improvements	<i>Per Person</i> \$1,669
Recreation Buildings & Pools	\$543
Park Offices and Support Facilities	\$58
Debt Service Credit	\$0
Net Capital Cost	\$2,270

RESIDENTIAL IMPACT FEES			
<i>Square Feet</i>	<i>Development Unit</i>	<i>Persons per Housing Unit</i>	<i>Impact Fee per Housing Unit</i>
<i>(finished floor area)</i>		<i>All Housing Unit Types</i>	<i>All Housing Unit Types</i>
<i>Residential (by square feet of finished living space)</i>			
600	Dwelling Unit	1.17	\$2,656
800	Dwelling Unit	1.47	\$3,337
1,000	Dwelling Unit	1.70	\$3,859
1,200	Dwelling Unit	1.89	\$4,290
1,400	Dwelling Unit	2.05	\$4,653
1,600	Dwelling Unit	2.19	\$4,971
1,800	Dwelling Unit	2.32	\$5,266
2,000	Dwelling Unit	2.42	\$5,493
2,200	Dwelling Unit	2.52	\$5,720
2,400	Dwelling Unit	2.61	\$5,924
2,600	Dwelling Unit	2.70	\$6,129
2,800	Dwelling Unit	2.78	\$6,310
3,000	Dwelling Unit	2.85	\$6,469
3,200	Dwelling Unit	2.91	\$6,606
3,400	Dwelling Unit	2.98	\$6,764
3600+	Dwelling Unit	3.04	\$6,901

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per person** compared to the **current cost per person** from the current City of Boulder Impact Fee schedule for the Parks and Recreation category. It should be noted that the current cost per person shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.⁴ Figure 15 compares the draft calculated cost to the current schedule for the Parks and Recreation category.

Figure 15. Parks and Recreation Fee Comparison: Current Cost per Person to Updated Cost per Person

	Cost per Person (2016)	Current City of Boulder Impact Fee Cost per Person[^]	Increase / Decrease
Parks and Recreation	\$2,270	\$1,474	\$796

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

⁴ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Projected Revenue

The revenue projection shown in Figure 16 is calculated based on the preliminary calculated 2016 Parks and Recreation Impact Fee and the development projections described in the land use assumptions (Appendix A). To the extent the rate of development either accelerates or slows down, there will be a corresponding change in Impact Fee revenue and the timing of the need for capital improvements.

Figure 16. Projected Parks and Recreation Impact Fee Revenue

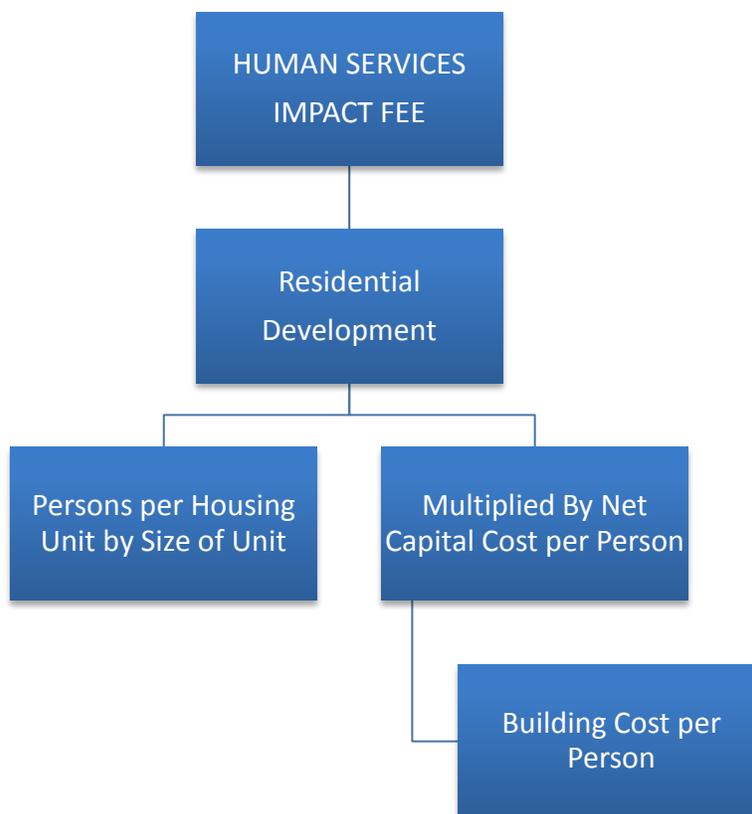
		<i>Residential</i>	
<i>Fee (Wtd Avg)</i>			\$4,858
		per housing unit	
<i>Year</i>		<i>Housing Units</i>	
Base	2015		45,740
Year 1	2016		46,012
Year 2	2017		46,288
Year 3	2018		46,566
Year 4	2019		46,846
Year 5	2020		47,127
Year 6	2021		47,409
Year 7	2022		47,694
Year 8	2023		47,980
Year 9	2024		48,268
Year 10	2025		48,557
<i>Ten-Yr Increase</i>			2,817
Projected Revenue =>			\$13,686,874

Human Services Impact Fees

Methodology

The Human Services impact fee calculation uses the incremental expansion methodology. Components of the Human Services fee include costs for Senior Centers and the Children, Youth and Family Center. All costs are allocated 100 percent to residential development. Figure 17 diagrams the general methodology used to calculate the Human Services Impact Fee. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the impact fee components. The impact fee is derived from the product of persons per housing unit by size of housing 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 17. Human Services Impact Fee Methodology Chart



Human Services Level of Service Standards and Costs

The incremental expansion methodology is used to calculate the Human Services impact fee. The first step of the analysis determines the current level of service (LOS) being provided to existing development. The second step involves determining the cost per person to provide the current LOS.

Figure 18 lists the current inventory of Human Services space in the City of Boulder. As shown, the City currently has Human Services space totaling 34,073 square feet. The current value for Human Services buildings and contents is from the City’s 2015 Property Schedule. To reflect total replacement costs for Human Services facilities, 30 percent is added to the building cost to reflect “soft” costs for predevelopment, site improvements, and other non-construction costs (per City of Boulder Facilities and Asset Management (FAM)). Total replacement costs for current facilities are estimated at \$7.2 million, or \$211 per square foot. To derive the cost per demand unit, the current level of service of .33 square feet per person is multiplied by the replacement cost per square foot of \$211, for a cost per demand unit of \$70 per person.

Figure 18. Human Services Level of Service Standards and Cost Factors

Facility	Location	Current Square Feet*	Current Replacement Cost (Hard Costs)*	Current Replacement Cost (Soft Costs)**	Total Costs	Cost/SF
West Senior Center	909 Arapahoe	16,188	\$2,494,628	\$748,388	\$3,243,016	\$200
Children, Youth & Family Center	2160 Spruce	5,215	\$846,048	\$253,814	\$1,099,862	\$211
East Senior Center (23%)	5660 Sioux Drive	12,670	\$2,192,671	\$657,801	\$2,850,473	\$225
TOTAL		34,073	\$5,533,347	\$1,660,004	\$7,193,351	\$211

Cost per Square Foot=> **\$211**

Total Square Feet	34,073
Population in 2015	104,808
Square Feet per Person	0.33
Total Cost	\$211
Cost per Person	\$70

* Building, contents, equipment, miscellaneous improvements (City of Boulder Property Schedule, 2015).

** Soft costs estimated at 30 percent of construction costs per City of Boulder Facilities and Asset Management.

Sources: City of Boulder Property Schedule, 2015; City of Boulder Facilities and Asset Management.

Credit Evaluation

The City does not have any outstanding debt for Human Service facilities, therefore a credit is not necessary.

Human Facilities Input Factors and Maximum Supportable Impact Fees

Infrastructure standards used to calculate the Human Services impact fees are shown in the boxed area at the top of Figure 19. Impact fees for Human Services are based on household sizes for all types of units by square footage per unit. Level of service standards are based on costs per person for Human Services buildings as described in the previous sections and summarized below. Each cost component of the impact fee is shown as a cost per person.

The bottom portion of Figure 19 shows maximum supportable impact fees for Human Services. The amounts are calculated by multiplying the persons per housing unit for each size of housing unit by the net capital cost per person.

For example, the impact fee for a dwelling unit of 600 square feet or less is calculated by multiplying the persons per housing unit of 1.17 by the net capital cost of \$70 for an impact fee amount of \$81 per unit. (Detail on number of persons by square feet of finished floor area is provided in the Appendix.)

Figure 19. Human Services Input Factors and Maximum Supportable Impact Fees

<i>Level Of Service</i>	<i>Factors</i>	
		<i>Per Person</i>
Human Services Buildings		\$70
Debt Service Cost		\$0
Net Capital Cost		\$70

<i>Square Feet</i>	<i>Development Unit</i>	<i>Persons per Housing Unit</i>	<i>Impact Fee per Housing Unit</i>
<i>(finished floor area)</i>		<i>All Housing Unit Types</i>	<i>All Housing Unit Types</i>
<i>Residential (by square feet of finished living space)</i>			
600	Dwelling Unit	1.17	\$81
800	Dwelling Unit	1.47	\$102
1,000	Dwelling Unit	1.70	\$119
1,200	Dwelling Unit	1.89	\$132
1,400	Dwelling Unit	2.05	\$143
1,600	Dwelling Unit	2.19	\$153
1,800	Dwelling Unit	2.32	\$162
2,000	Dwelling Unit	2.42	\$169
2,200	Dwelling Unit	2.52	\$176
2,400	Dwelling Unit	2.61	\$182
2,600	Dwelling Unit	2.70	\$189
2,800	Dwelling Unit	2.78	\$194
3,000	Dwelling Unit	2.85	\$199
3,200	Dwelling Unit	2.91	\$203
3,400	Dwelling Unit	2.98	\$208
3600+	Dwelling Unit	3.04	\$212

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per person** compared to the **current cost per person** from the current City of Boulder Impact Fee schedule for the Human Services category. It should be noted that the current cost per person shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.⁵ Figure 20 compares the draft calculated cost to the current schedule for the Human Services category.

Figure 20. Human Services Fee Comparison: Current Cost per Person to Updated Cost per Person

	<i>Cost per Person (2016)</i>	Current City of Boulder Impact Fee Cost per Person [^]	Increase / Decrease
Human Services	\$70	\$70	\$0

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

⁵ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Projected Revenue

The revenue projection shown in Figure 21 is calculated based on the preliminary calculated 2016 Human Services Impact Fee and the development projections described in the land use assumptions (Appendix A). To the extent the rate of development either accelerates or slows down, there will be a corresponding change in Impact Fee revenue and the timing of the need for capital improvements.

Figure 21. Projected Human Services Impact Fee Revenue

		<i>Residential</i>	
		<i>Fee (Wtd Avg)</i>	\$149
		per housing unit	
<i>Year</i>		<i>Housing Units</i>	
Base	2015		45,740
Year 1	2016		46,012
Year 2	2017		46,288
Year 3	2018		46,566
Year 4	2019		46,846
Year 5	2020		47,127
Year 6	2021		47,409
Year 7	2022		47,694
Year 8	2023		47,980
Year 9	2024		48,268
Year 10	2025		48,557
<i>Ten-Yr Increase</i>			2,817
Projected Revenue =>			\$419,791

Municipal Facilities Impact Fees

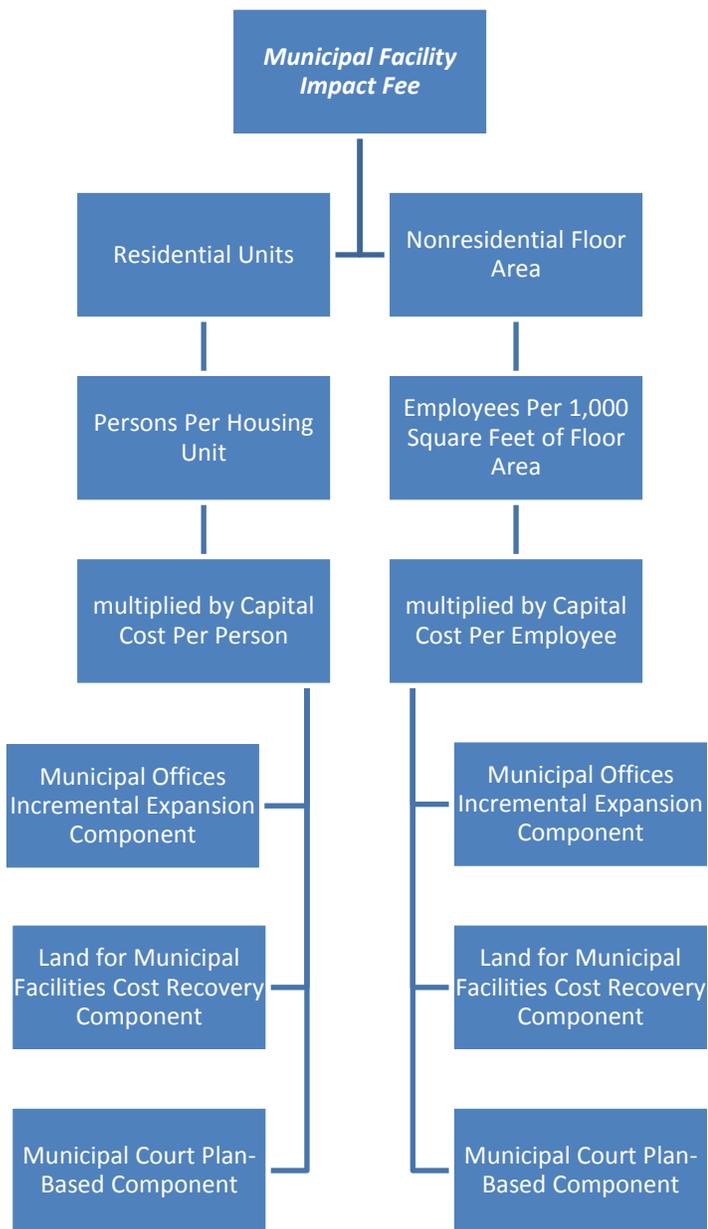
Methodology

The Municipal Facilities impact fees use all three methodologies

- Municipal Facility office buildings: Incremental expansion approach to allow for future expansion in City office space for general government purposes to accommodate growth.
- Land for Municipal Facilities: Cost recovery approach to capture growth's share of the cost of acquiring the Boulder Community Hospital site for use for future Municipal Facilities.
- Municipal Court Facility: Plan-based approach to capture growth's share of future facility.

As illustrated in Figure 22, capital costs are allocated to both residential and nonresidential development. Residential factors are calculated on a per person basis, and converted to an impact fee amount per housing unit using average persons per housing unit by size of the housing unit. Nonresidential development fees are based on a capital cost per employee, where such costs are typically multiplied by the number of employees per square foot of nonresidential floor area (or other appropriate development unit).

Figure 22. Municipal Facilities Impact Fee Methodology Chart



Proportionate Share Factors

The proportionate share factors shown in Figure 23 are used to allocate capital costs to residential and nonresidential development.

Functional population is similar to what the U.S. Census Bureau calls "daytime population" by accounting for people living and working in a jurisdiction. In addition to the Boulder-specific data, TischlerBise has relied on extensive public and private sector input to establish reasonable "weighting factors" to account for time spent at either residential or nonresidential development. These weighting factors are shown below with grey shading.

The functional population analysis starts with 2015 estimates of jobs and population in Boulder (see yellow highlighting), as documented in the draft Land Use Assumptions (see Appendix A). According to the *2013 Transportation Master Plan (TMP) State of the System* report (see page 3-13), approximately 10 percent of Boulder jobs are self-employed persons. The remaining 90 percent of jobs require "journey-to-work" travel. The 2014 Boulder Valley Employee Survey indicates Boulder residents held 38 percent of these jobs, with persons living outside of Boulder holding the remaining 62 percent of journey-to-work jobs. The functional population analysis assumes all workers spend ten hours per weekday (annualized average) at nonresidential locations.

Residents who work in Boulder are assigned 10 hours to nonresidential development (discussed above) and 14 hours to residential development. Residents who work outside Boulder are assigned 14 hours to residential development. Jobs held by non-residents are assigned 10 hours to nonresidential development. Residents who do not work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages) to account for time spent shopping, eating out, and other social/recreational activities.

Based on Boulder's 2015 functional population analysis, the cost allocation for residential development is 60 percent, while nonresidential development accounts for 40 percent of the demand for municipal facility infrastructure.

Figure 23. Proportionate Share Factors for Municipal Facilities Impact Fees

Boulder Functional Population Analysis				Demand Hours/Day	Person Hours
Service Units in 2015					
Nonresidential					
	Jobs Located in City*	98,510			
	10% Self-employed	9,851		10	98,510
	Jobs Requiring Journey-To-Work	88,659			
	Jobs Held By Residents**	38%	33,690	10	336,900
	Jobs Held By Non-residents**	62%	54,969 <= 56% of jobs	10	549,690
	Non-working Residents	51,054		4	204,216
					Nonresidential Subtotal 1,189,316
					Nonresidential Share => 40%
Residential					
	Population*	104,808			
	Non-working Residents	51,054		20	1,021,080
	Resident Workers	53,754			
	81% Residents Working in City (includes self-employed)***		43,541 <= 44% of jobs	14	609,574
	19% Residents Working Outside City**	10,213		14	142,982
					Residential Subtotal 1,773,636
					Residential Share => 60%
					TOTAL 2,962,952

* Boulder Land Use Assumptions, TischlerBise 03/25/16.
 ** Percentages from 2014 Boulder Valley Employee Survey, Table 36, Question 32.
 *** Percentages from 2014 Boulder Community Household Survey, Table 112, Question

Municipal Facilities Level of Service Standards and Costs

Municipal Facility Office Buildings Component

The incremental expansion methodology is used to calculate the Office Building component of the Municipal Facilities impact fee. The first step of the analysis determines the current Level of Service (LOS) being provided to existing development. The second step involves determining the cost per person and job to provide this LOS.

Figure 24 lists the current inventory of municipal government space in the City of Boulder. As shown, the City currently utilizes municipal facilities space totaling 108,319 square feet, including space that is owned and leased by the City of Boulder. Of that amount, 72,890 square feet is owned by the City.

Level of service (square feet per demand unit) is calculated by multiplying total square footage by proportionate share then dividing by applicable demand units. For Municipal Facilities, levels of service are:

- Residential: 108,319 sq. ft. x 60% proportionate share / 104,808 population = .62 sq. ft. per capita
- Nonresidential: 108,319 sq. ft. x 40% proportionate share / 98,510 jobs = .44 sq. ft. per job

The current value for general government buildings and contents is from the City’s 2015 Property Schedule. To reflect total replacement costs for general Municipal Facilities, 30 percent is added to the construction cost to reflect “soft” costs for predevelopment, site improvements, and other non-construction costs (per City of Boulder Facilities and Asset Management (FAM)). According to information provided by the City, Municipal Facility space has a replacement value of approximately \$21 million, reflecting facilities owned by the City. The replacement cost per square foot is \$284 resulting in a cost per person of \$175 (.62 sq. ft. per person x \$284 = \$175) and a cost per job of \$124 (.44 sq. ft. per job x \$284 = \$124).

Figure 24. Municipal Facilities Office Buildings Level of Service Standards and Cost Factors

Building	Location	Current Square Feet*	Current Replacement Cost (Hard Costs)*	Current Replacement Cost (Soft Costs)**	Total Cost	Cost/SF
Municipal Building	1777 Broadway	23,657	\$5,701,947	\$1,710,584	\$7,412,531	\$313
Atrium	1300 Canyon Blvd	12,392	\$2,446,604	\$733,981	\$3,180,585	\$257
Park Central	1739 Broadway	20,910	\$4,920,672	\$1,476,202	\$6,396,874	\$306
New Britain	1101 Arapahoe Ave	13,851	\$2,438,570	\$731,571	\$3,170,141	\$229
Center Green Lease	3065 Center Green	31,000	leased	na	na	na
Risk Management	1301 Arapahoe Ave	2,080	\$393,392	\$118,018	\$511,410	\$246
1720 Building LLC	1720 14th Street	4,429	leased	na	na	na
TOTAL		108,319	\$15,901,185	\$4,770,356	\$20,671,541	
TOTAL City Owned***		72,890	\$15,901,185	\$4,770,356	\$20,671,541	\$284

Cost per Square Foot=> \$284

BASED ON TOTAL SPACE (CITY OWNED AND LEASED)

	Proportionate Share	2015 Demand Units	LOS: Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	60%	104,808 Population	0.62	\$175
Nonresidential	40%	98,510 Jobs	0.44	\$124

* Building, contents, equipment, miscellaneous improvements (City of Boulder Property Schedule, 2015).
 ** Soft costs estimated at 30 percent of construction costs per City of Boulder Facilities and Asset Management.
 *** Average cost per square foot is average of City owned facilities.
 Sources: City of Boulder Property Schedule, 2015; City of Boulder Facilities and Asset Management.

Land Component

The cost recovery methodology is used to calculate the Land component of the Municipal Facilities impact fee. The first step of the analysis determines the Level of Service (LOS) to be provided to existing and future development. The second step involves determining the cost per person and job to provide this LOS.

The City of Boulder recently acquired the 8.8 acre Boulder Community Hospital site. The entire purchase was \$41 million of which \$15.2 million was the land value. This component is included to account for future land needs for Municipal Facilities.

A summary of the cost of the land purchase is provided below:

Figure 25. Boulder Community Hospital Land Purchase Details

Address	Acct	Acres	Total Cost	Cost per Acre
1100 Balsam	R0602588	6.76	\$7,506,300	\$1,110,399
1155 Alpine Ave	R0116926	0.66	\$360,000	\$545,455
2655 Broadway	R0000500	0.69	\$2,478,200	\$3,591,594
1136 Alpine Ave	R0000925	0.48	\$2,506,300	\$5,221,458
1135 North Street	R0008544	0.12	\$1,162,000	\$9,683,333
1125 North Street	R0000927	0.12	\$1,165,000	\$9,708,333
TOTAL		8.83	\$15,177,800	\$1,718,890

Sources: Boulder County Assessor, Online Property Search (data accessed by TischlerBise on Feb. 14, 2016).

Per City Facilities and Asset Management, the City needs less than the full 8.83 acres of the site for future facility needs and anticipates retaining 3 acres of the property for future municipal facility needs. . Therefore, the above figure is adjusted to reflect this and is shown in Figure 26. Because this is a **plan-based approach where the land purchased today has excess capacity to serve growth in the future**, the demand base used in the calculation is population and employment in the **year 2040**. This reflects the period of time for which the purchased land is anticipated to serve.

Level of service (acre per demand unit) is calculated by multiplying total acres by proportionate share then dividing by applicable demand units (population and jobs in the year 2040). For Municipal Facilities, levels of service are:

- Residential: 3 acres x 60% proportionate share / 123,000 population * 1,000 = .015 acres per 1,000 persons
- Nonresidential: 3 acres. x 40% proportionate share / 117,010 jobs * 1,000 = .010 acres per 1,000 jobs

The 3 acres to be retained has an estimated cost of \$5.2 million, using the average cost per acre of \$1.7 million. The cost per person is \$26 (.015 acre per 1,000 persons x \$1,718,890 = \$26) and a cost per job of \$17 (.010 acres per 1,000 jobs x \$1,718,890 = \$17).

Figure 26. Municipal Facilities Land Level of Service Standards and Cost Factors

Site Acquisition	Acres*	Avg. Cost per Acre	Total Cost
Boulder Community Hospital Site	3.00	\$1,718,890	\$5,156,670

	Proportionate Share	2040 Projected Demand Units	LOS: Acres per 1,000 Demand Units	Cost per Demand Unit
Residential	60%	123,000 Population	0.015	\$26
Nonresidential	40%	117,010 Jobs	0.010	\$17

* Per the City, it is assumed the City will retain 3 acres of the property for municipal facility needs.

Sources: City of Boulder Facilities and Asset Management; Boulder County Assessor, Online Property Search (data accessed by TischlerBise on Feb. 14, 2016).

Municipal Court Component

The plan-based methodology is used to calculate the Municipal Court component of the Municipal Facilities impact fee. The first step of the analysis determines the Level of Service (LOS) to be provided to existing and future development. The second step involves determining the cost per person and job to provide this LOS.

The City of Boulder currently leases space from Boulder County for its Municipal Court space (7,587 square feet).⁶ The City conducted a space needs assessment for the court that identified the need for 12,000 square feet of Municipal Court space.⁷

Figure 27 summarizes the Municipal Court component level of service. Level of service (square feet per demand unit) is calculated by multiplying total square feet by proportionate share then dividing by applicable demand units. **The Municipal Court space needs analysis considered future growth therefore, the demand base used is population and jobs in the year 2040.** For Municipal Facilities, levels of service are:

- Residential: 12,000 sq. ft. x 60% proportionate share / 123,000 population = .06 sq. ft. per person
- Nonresidential: 12,000 sq. ft. x 40% proportionate share / 117,010 jobs = .04 sq. ft. per job

⁶ Per City Facilities and Asset Management, Boulder County has expressed its desire to discontinue the lease with the City of Boulder within 3 to 5 years thus requiring the City to provide space for the Municipal Court.

⁷ Trestle Strategy Group, "Space Needs Assessment of City of Boulder's Municipal Court (Draft)," May 11, 2015.

The planned cost is estimated at \$4.2 million, reflecting an average cost per square foot of \$350. The cost per person is \$21 (.06 sq. ft. x \$350 = \$21) and a cost per job of \$14 (.04 sq. ft. x \$350 = \$14).

Figure 27. Municipal Court Level of Service Standards and Cost Factors

Project	Square Feet	Cost/SF	Total Cost
Municipal Court Facility (planned)	12,000	\$350	\$4,200,000

	Proportionate Share	2040 Projected Demand Units	LOS: Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	60%	123,000 Population	0.06	\$21
Nonresidential	40%	117,010 Jobs	0.04	\$14

Sources: Trestle Strategy Group, "Space Needs Assessment of City of Boulder's Municipal Court (Draft)," May 11, 2015; City of Boulder Facilities and Asset Management.

Credit Evaluation

The City does not have any outstanding property tax-backed debt for municipal facility improvements included in the incremental expansion portion of the Impact Fee calculation, therefore no credit is included.

For the purchase of the Boulder Community Hospital site, the City issued debt (Certificates of Participation) for the full amount of the property (\$41 million). The City has entered into a *Lease Purchase Agreement* with the Boulder Municipal Property Authority (BMPA). BMPA will lease the Leased Property back to the City pursuant to the terms of the Lease Purchase Agreement. The City will (subject to annual appropriation) make Base Rental payments to BMPA **from any legally available revenues of the City**. The Base Rental payments will be held by the Trustee and used to pay debt service on the 2015 Certificates.⁸

The land component of the Municipal Facilities Impact Fee reflects new growth's share of the cost for the property. Therefore other City revenues will be used to cover existing development's share of the cost and no credit is necessary.⁹

⁸ "City of Boulder, Boulder Municipal Property Authority Agenda Item," September 15, 2015, p. 3. Emphasis added.

⁹ However, it is noted that if the City sells land on which current City offices are housed, a credit or offset will need to be included in the calculation.

Residential Impact Fees for Municipal Facilities

Figure 28 provides the schedule of residential impact fees by finished floor area for residential development. Capital cost per person, multiplied by persons per housing unit by size of housing unit, yields the residential impact fee schedule for municipal facilities.

Figure 28. Municipal Facilities Input Factors and Maximum Supportable Residential Impact Fee Schedule

<i>Level Of Service</i>	<i>Factors</i>	
		<i>Per Person</i>
Municipal Facilities Building Cost		\$175
Land Cost		\$26
Municipal Court Cost		\$21
Debt Service Cost		\$0
Net Capital Cost		\$222

RESIDENTIAL IMPACT FEES			
<i>Square Feet</i>	<i>Development Unit</i>	<i>Persons per Housing Unit</i>	<i>Impact Fee per Housing Unit</i>
<i>(finished floor area)</i>		<i>All Housing Unit Types</i>	<i>All Housing Unit Types</i>
<i>Residential (by square feet of finished living space)</i>			
600	Dwelling Unit	1.17	\$259
800	Dwelling Unit	1.47	\$326
1,000	Dwelling Unit	1.70	\$377
1,200	Dwelling Unit	1.89	\$419
1,400	Dwelling Unit	2.05	\$455
1,600	Dwelling Unit	2.19	\$486
1,800	Dwelling Unit	2.32	\$515
2,000	Dwelling Unit	2.42	\$537
2,200	Dwelling Unit	2.52	\$559
2,400	Dwelling Unit	2.61	\$579
2,600	Dwelling Unit	2.70	\$599
2,800	Dwelling Unit	2.78	\$617
3,000	Dwelling Unit	2.85	\$632
3,200	Dwelling Unit	2.91	\$646
3,400	Dwelling Unit	2.98	\$661
3600+	Dwelling Unit	3.04	\$674

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per person** compared to the **current cost per person** from the current City of Boulder Impact Fee schedule for the residential component of the Municipal Facilities category. It should be noted that the current cost per person shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.¹⁰ Figure 20 compares the draft calculated cost to the current schedule for the residential component of the Municipal Facilities category.

Figure 29. Municipal Facilities Fee Comparison (Residential): Current Cost per Person to Updated Cost per Person

	<i>Cost per Person (2016)</i>	Current City of Boulder Impact Fee Cost per Person[^]	Increase / Decrease
Municipal Facilities	\$222	\$131	\$91

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

¹⁰ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Nonresidential Impact Fees for Municipal Facilities

Figure 30 shows the schedule of maximum allowable impact fees for nonresidential development. For nonresidential land uses, such as a retail establishment, the number of employees per square feet (.00251) is multiplied by the capital cost per employee (\$155), for an impact fee of \$0.38 per square foot.

Figure 30. Municipal Facility Input Factors and Maximum Supportable Nonresidential Impact Fee Schedule

Level Of Service	Factors	
		Per Employee
Municipal Facilities Building Cost		\$124
Land Cost		\$17
Municipal Court Cost		\$14
Debt Service Cost		\$0
Net Capital Cost		\$155

NONRESIDENTIAL IMPACT FEES			
Nonresidential Land Use	Development Unit	Jobs per Development Unit	Impact Fee per Development Unit
Retail / Restaurant / Service	Square Feet of Floor Area	0.00251	\$0.38
Office	Square Feet of Floor Area	0.00359	\$0.55
Light Industrial	Square Feet of Floor Area	0.00231	\$0.35
Warehousing	Square Feet of Floor Area	0.00092	\$0.14
Institutional	Square Feet of Floor Area	0.00081	\$0.12
Hospital	Square Feet of Floor Area	0.00294	\$0.45
Nursing Home/Assisted Living	Bed	0.84	\$130.00
Nursing Home/Assisted Living*	Square Feet of Floor Area	0.0021	\$0.32
Lodging	Room	0.57	\$88.00
Lodging**	Square Feet of Floor Area	0.00095	\$0.14

* For illustration and comparison with per square foot impact fees, assumes an average of 400 sq. ft. per bed

** For illustration and comparison with per square foot impact fees, assumes an average of 600 sq. ft. per room

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per employee** compared to the **current cost per employee** from the current City of Boulder Impact Fee schedule for the nonresidential component of the Municipal Facilities category. It should be noted that the current cost per employee shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.¹¹ Figure 20 compares the draft calculated cost to the current schedule for the nonresidential component of the Municipal Facilities category.

Figure 31. Municipal Facilities Fee Comparison (Nonresidential): Current Cost per Employee to Updated Cost per Employee

	<i>Cost per Employee (2016)</i>	Current City of Boulder Impact Fee Cost per Employee [^]	Increase / Decrease
Municipal Facilities	\$155	\$54	\$101

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

¹¹ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Projected Revenue

The revenue projection shown in Figure 32 is calculated based on the preliminary calculated 2016 Municipal Facilities Impact Fee and the development projections described in the land use assumptions (Appendix A). To the extent the rate of development either accelerates or slows down, there will be a corresponding change in Impact Fee revenue and the timing of the need for capital improvements.

Figure 32. Projected Municipal Facilities Impact Fee Revenue

		<i>Residential</i>	<i>Industrial</i>	<i>Retail</i>	<i>Office and Other Services</i>
<i>Fee (Wtd Avg)</i>		\$475	\$0.35	\$0.38	\$0.55
		per housing unit	per sq. ft.	per sq. ft.	per sq. ft.
<i>Year</i>		<i>Housing Units</i>	<i>Square Feet</i>	<i>Square Feet</i>	<i>Square Feet</i>
Base	2015	45,740	13,576,996	8,565,611	14,848,416
Year 1	2016	46,012	13,670,663	8,624,414	14,950,360
Year 2	2017	46,288	13,765,405	8,683,890	15,053,473
Year 3	2018	46,566	13,860,809	8,743,783	15,157,308
Year 4	2019	46,846	13,956,881	8,804,095	15,261,869
Year 5	2020	47,127	14,053,626	8,864,830	15,367,162
Year 6	2021	47,409	14,151,048	8,925,989	15,473,193
Year 7	2022	47,694	14,249,152	8,987,577	15,579,965
Year 8	2023	47,980	14,347,942	9,049,596	15,687,486
Year 9	2024	48,268	14,447,424	9,112,049	15,795,758
Year 10	2025	48,557	14,547,603	9,174,939	15,904,789
<i>Ten-Yr Increase</i>		2,817	970,607	609,328	1,056,373
<i>Projected Revenue =></i>		\$1,338,260	\$339,712	\$231,545	\$581,005
					Total Projected Revenue => \$2,490,522

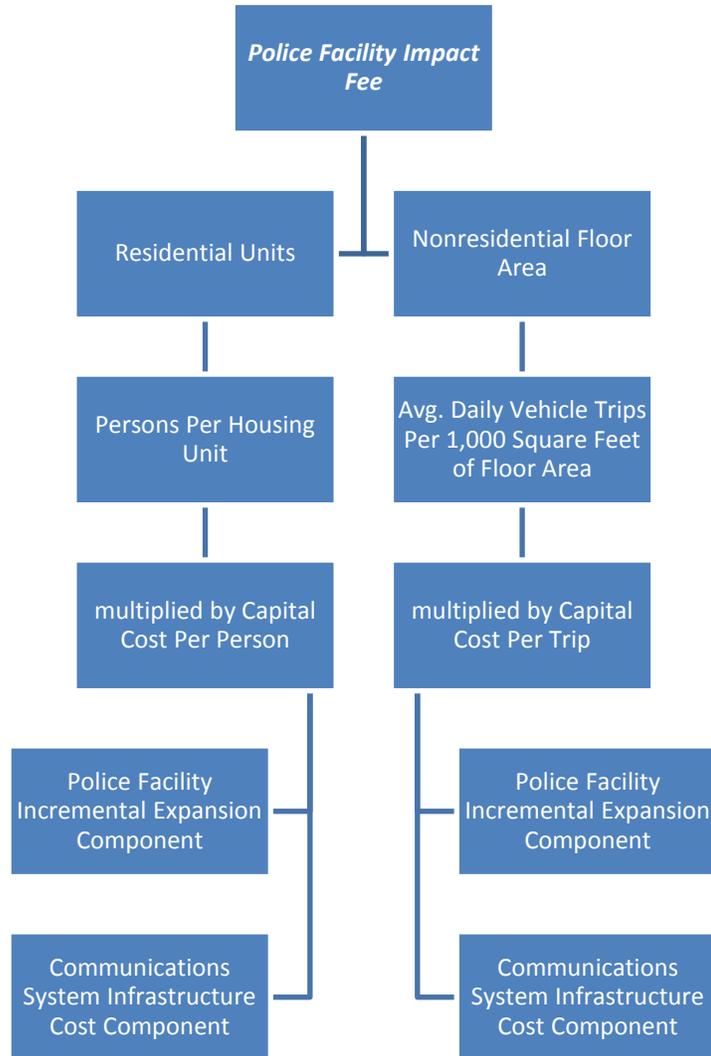
Police Impact Fees

Methodology

The Police impact fee is calculated using an incremental expansion methodology. Because the Colorado State Impact Fee Act requires that infrastructure included in the fee calculation have a useful life of over 5 years, police cars are not eligible for impact fee funding.

As shown in Figure 33, the Police impact fee uses different demand indicators for residential and nonresidential development. Residential impact fees are calculated on a per capita basis and then converted to a proportionate fee amount by type of housing, based on the number of persons by size of housing unit. For nonresidential impact fees, 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 developments, such as shopping centers, and lowest for industrial/warehouse development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for Police services from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, will not accurately reflect the demand for service. For example, if employees per thousand square feet were used as the demand indicator, Police impact fees would be too high for office and institutional development because offices typically have more employees per 1,000 square feet than retail uses. If floor area were used as the demand indicator, Police impact fees would be too high for industrial development.

Figure 33. Police Facilities Impact Fee Methodology Chart



Proportionate Share Factors

The proportionate share factors shown in Figure 34 are used to allocate capital costs to residential and nonresidential development.

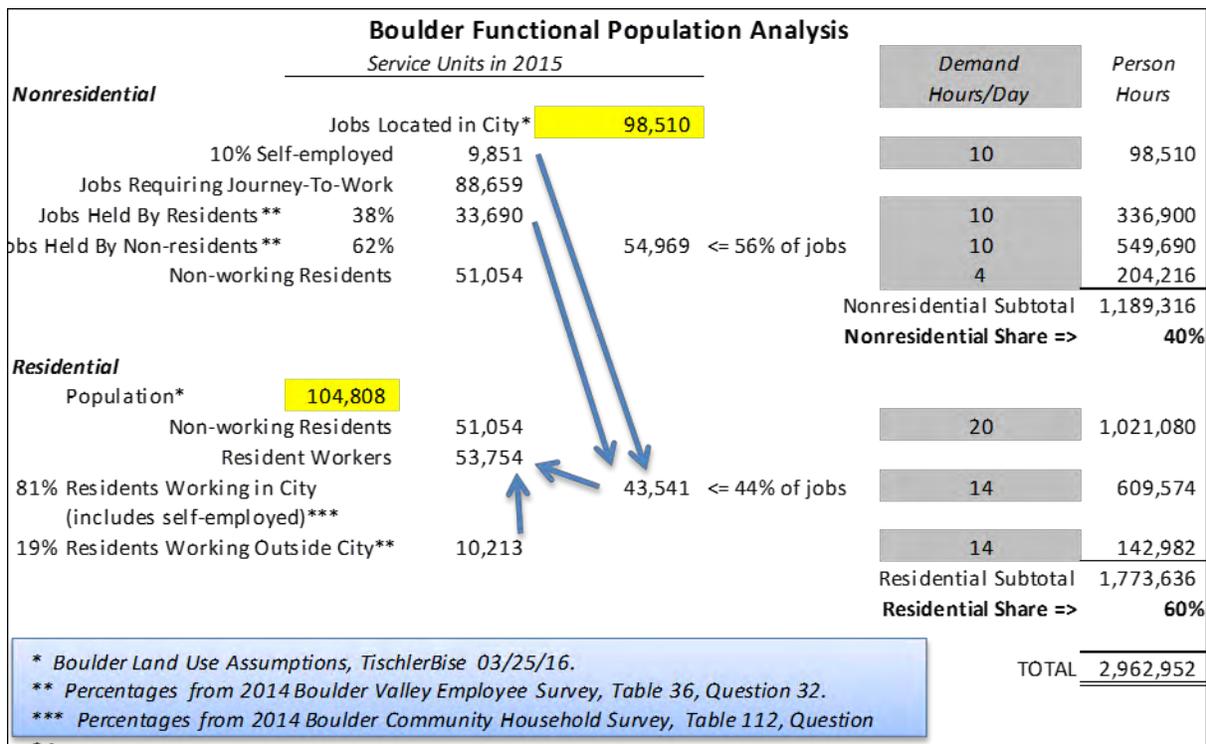
Functional population is similar to what the U.S. Census Bureau calls "daytime population" by accounting for people living and working in a jurisdiction. In addition to the Boulder-specific data, TischlerBise has relied on extensive public and private sector input to establish reasonable "weighting factors" to account for time spent at either residential or nonresidential development. These weighting factors are shown below with grey shading.

The functional population analysis starts with 2015 estimates of jobs and population in Boulder (see yellow highlighting), as documented in the draft Land Use Assumptions (see Appendix A). According to the *2013 Transportation Master Plan (TMP) State of the System* report (see page 3-13), approximately 10 percent of Boulder jobs are self-employed persons. The remaining 90 percent of jobs require "journey-to-work" travel. The 2014 Boulder Valley Employee Survey indicates Boulder residents held 38 percent of these jobs, with persons living outside of Boulder holding the remaining 62 percent of journey-to-work jobs. The functional population analysis assumes all workers spend ten hours per weekday (annualized average) at nonresidential locations.

Residents who work in Boulder are assigned 10 hours to nonresidential development (discussed above) and 14 hours to residential development. Residents who work outside Boulder are assigned 14 hours to residential development. Jobs held by non-residents are assigned 10 hours to nonresidential development. Residents who do not work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages) to account for time spent shopping, eating out, and other social/recreational activities.

Based on Boulder's 2015 functional population analysis, the cost allocation for residential development is 60 percent, while nonresidential development accounts for 40 percent of the demand for municipal facility infrastructure.

Figure 34. Proportionate Share Factors for Police Impact Fees



Police Facilities Level of Service Standards and Costs

Police Buildings

The Police impact fee is calculated using the incremental expansion methodology for both Police station space and Communications System Infrastructure. The first step of the analysis determines the current LOS being provided to existing development. The second step involves determining the cost per person and per nonresidential vehicle trip to provide this LOS.

The top portion of Figure 35 lists the current inventory of Police space in the City of Boulder.

As shown, the City currently utilizes Police facility space totaling 95,749 square feet, including space that is owned and leased by the City of Boulder. Of that amount, 93,849 square feet is owned by the City.

Level of service (square feet per demand unit) is calculated by multiplying total square footage by proportionate share then dividing by applicable demand units. For Police Facilities, levels of service are:

- Residential: 95,749 sq. ft. x 60% proportionate share / 104,808 population = .55 sq. ft. per capita
- Nonresidential: 95,749 sq. ft. x 40% proportionate share / 249,903 vehicle trips = .15 sq. ft. per trip

The current value for Police buildings and contents are from the City’s 2015 Property Schedule and the Trestle *Public Safety Space Needs Assessment*. To reflect total replacement costs for general Police space, 30 percent is added to the construction cost to reflect “soft” costs for predevelopment, site improvements, and other non-construction costs (per City of Boulder Facilities and Asset Management (FAM)). According to information provided by the City, current Police facility space has a replacement value of approximately \$30 million, reflecting facilities owned by the City. The average replacement cost per square foot is \$317 resulting in a cost per person of \$184 (.55 sq. ft. per person x \$317 = \$174) and a cost per nonresidential trip of \$48 (.15 sq. ft. per trip x \$317 = \$48).

Figure 35. Police Facilities Level of Service Standards and Cost Factors

Facility	Location	Current Square Feet	Current Replacement Cost (Hard Costs)*	Current Replacement Cost (Soft Costs)**	Total Costs	Cost/SF
Headquarters	Public Safety Building/1805 E. 33rd	72,986	\$17,881,570	\$7,663,530	\$25,545,100	\$350
Training Ctr / Firing Range Addition	Public Safety Building/1805 E. 33rd	16,000	\$2,714,216	\$814,265	\$3,528,481	\$221
Police Storage (only building cost)	Storage/1805 E. 33rd St	4,763	\$461,693	\$138,508	\$600,201	\$126
Downtown Mall Annex	Downtown	850	leased	na	na	na
University Hill Annex	13th Street	450	leased	na	na	na
Bomb Disposal and Storage	N. 26th Street	100	\$41,174	\$12,352	\$53,526	\$535
San Juan del Centro Annex	Valmont Rd	600	leased	na	na	na
TOTAL		95,749	\$21,098,653	\$8,628,655	\$29,727,308	
TOTAL City Owned***		93,849	\$21,098,653	\$8,628,655	\$29,727,308	\$317

Cost per Square Foot=> **\$317**

BASED ON TOTAL SPACE (CITY OWNED AND LEASED)

	Proportionate Share	2015 Demand Units	LOS: Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	60%	104,808 persons	0.55	\$174
Nonresidential	40%	249,903 nonres trips	0.15	\$48

* Building, contents, equipment, miscellaneous improvements (City of Boulder Property Schedule, 2015) except for Headquarters with replacement cost from City of Boulder Public Safety Building Preliminary Space Needs Assessment, 9/11/14, Trestle Strategy Group.

** Soft costs estimated at 30 percent of construction costs per City of Boulder Facilities and Asset Management.

*** Average cost per square foot is average of City owned facilities.

Sources: City of Boulder Property Schedule, 2015; City of Boulder Facilities and Asset Management; Trestle Strategy Group.

Communications System Infrastructure

For Communications System Infrastructure, an incremental based methodology is used and is based on current levels of service for current towers and equipment with useful life longer than 5 years. It should be noted that the City is embarking on a comprehensive radio infrastructure study. **Once that is complete, a plan-based methodology could be employed to reflect the needs for current and future growth.**

Based on the current value of \$1.9 million and proportionate share factors from above, the per capita cost is \$11 and the cost per trip is \$3.

Figure 36. Police Communications Infrastructure Level of Service Standards and Cost Factors

Facility	Location	Current Value
GUNBARREL Radio Shack Twr/Ant	Gunbarrel Hill	\$127,192
Chautauqua Radio Shack Twr/Ant	Chautauqua	\$149,525
Radio/Communications Equipment	Citywide	\$1,610,475
TOTAL		\$1,887,192

	Proportionate Share	2015 Demand Units	Cost per Demand Unit
Residential	60%	104,808 persons	\$11
Nonresidential	40%	249,903 nonres trips	\$3

Sources: City Property Schedule (2015); City of Boulder Police Department

Credit Evaluation

At present, the City of Boulder does not have any outstanding property-tax backed bonded debt related to the construction of Police facilities. Therefore, a credit for existing bond financing is not applicable to this impact fee.

Residential Impact Fees for Police Facilities

Figure 37 provides the schedule of Police residential impact fees by finished floor area for residential development. Capital cost per person, multiplied by persons per housing unit by size of housing unit, yields the residential impact fee schedule for Police facilities.

Figure 37. Police Input Factors and Maximum Supportable Residential Impact Fee Schedule

<i>Level Of Service</i>	<i>Factors</i>	
		<i>Per Person</i>
Police Buildings Cost		\$174
Communications Infrastructure Cost		\$11
Debt Service Cost		\$0
Net Capital Cost		\$185

RESIDENTIAL IMPACT FEES			
<i>Square Feet</i>	<i>Development Unit</i>	<i>Persons per Housing Unit</i>	<i>Impact Fee per Housing Unit</i>
<i>(finished floor area)</i>		<i>All Housing Unit Types</i>	<i>All Housing Unit Types</i>
Residential (by square feet of finished living space)			
600	Dwelling Unit	1.17	\$216
800	Dwelling Unit	1.47	\$271
1,000	Dwelling Unit	1.70	\$314
1,200	Dwelling Unit	1.89	\$349
1,400	Dwelling Unit	2.05	\$379
1,600	Dwelling Unit	2.19	\$405
1,800	Dwelling Unit	2.32	\$429
2,000	Dwelling Unit	2.42	\$447
2,200	Dwelling Unit	2.52	\$466
2,400	Dwelling Unit	2.61	\$482
2,600	Dwelling Unit	2.70	\$499
2,800	Dwelling Unit	2.78	\$514
3,000	Dwelling Unit	2.85	\$527
3,200	Dwelling Unit	2.91	\$538
3,400	Dwelling Unit	2.98	\$551
3600+	Dwelling Unit	3.04	\$562

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per person** compared to the **current cost per person** from the current City of Boulder Impact Fee schedule for the residential component of the Police category. It should be noted that the current cost per person shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.¹² Figure 38 compares the draft calculated cost to the current schedule for the residential component of the Police category.

Figure 38. Police Fee Comparison (Residential): Current Cost per Person to Updated Cost per Person

	Cost per Person (2016)	Current City of Boulder Impact Fee Cost per Person[^]	Increase / Decrease
Police	\$185	\$138	\$47

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

¹² The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Nonresidential Impact Fees for Police Facilities

Figure 39 shows the schedule of maximum allowable impact fees for nonresidential development. For nonresidential land uses, such as a retail establishment, the number of trips per square feet (.04270 x 33%) is multiplied by the capital cost per trip (\$51), for an impact fee of \$0.71 per square foot.

Figure 39. Police Input Factors and Maximum Supportable Nonresidential Impact Fee Schedule

Level Of Service

Police Buildings Cost
 Communications Infrastructure Cost
 Debt Service Cost
 Net Capital Cost

Factors

	<i>Per Trip</i>
	\$48
	\$3
	\$0
	\$51

NONRESIDENTIAL IMPACT FEES				
<i>Nonresidential Land Use</i>	<i>Development Unit</i>	<i>Vehicle Trip Rate per Demand Unit</i>	<i>Trip Adjustment Factors</i>	<i>Impact Fee per Development Unit</i>
Retail / Restaurant / Service	Square Feet of Floor Area	0.04270	33%	\$0.71
Office	Square Feet of Floor Area	0.01103	50%	\$0.28
Light Industrial	Square Feet of Floor Area	0.00697	50%	\$0.17
Warehousing	Square Feet of Floor Area	0.00356	50%	\$0.09
Institutional	Square Feet of Floor Area	0.01403	33%	\$0.23
Hospital	Square Feet of Floor Area	0.01322	50%	\$0.33
Nursing Home/Assisted Living	Bed	2.74	50%	\$69
<i>Nursing Home/Assisted Living*</i>	<i>Square Feet of Floor Area</i>	<i>0.00685</i>	<i>50%</i>	<i>\$0.17</i>
Lodging	Room	8.17	50%	\$208
<i>Lodging**</i>	<i>Square Feet of Floor Area</i>	<i>0.013616667</i>	<i>50%</i>	<i>\$0.34</i>

* For illustration and comparison with per square foot impact fees, assumes an average of 400 sq. ft. per bed

** For illustration and comparison with per square foot impact fees, assumes an average of 600 sq. ft. per room

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per trip** compared to the **current cost per trip** from the current City of Boulder Impact Fee schedule for the nonresidential component of the Police category. It should be noted that the current cost per trip shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.¹³ Figure 40 compares the draft calculated cost to the current schedule for the nonresidential component of the Police category.

Figure 40. Police Facilities Fee Comparison (Nonresidential): Current Cost per Trip to Updated Cost per Trip

	<i>Cost per Trip (2016)</i>	Current City of Boulder Impact Fee Cost per Trip[^]	Increase / Decrease
Police	\$51	\$19	\$32

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

¹³ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Projected Revenue

The revenue projection shown in Figure 41 is calculated based on the preliminary calculated 2016 Police Facilities Impact Fee and the development projections described in the land use assumptions (Appendix A). To the extent the rate of development either accelerates or slows down, there will be a corresponding change in Impact Fee revenue and the timing of the need for capital improvements.

Figure 41. Projected Police Facilities Impact Fee Revenue

		<i>Residential</i>	<i>Industrial</i>	<i>Retail</i>	<i>Office and Other Services</i>
<i>Fee (Wtd Avg)</i>		\$395 per housing unit	\$0.17 per sq. ft.	\$0.71 per sq. ft.	\$0.28 per sq. ft.
<i>Year</i>		<i>Housing Units</i>	<i>Square Feet</i>	<i>Square Feet</i>	<i>Square Feet</i>
Base	2015	45,740	13,576,996	8,565,611	14,848,416
Year 1	2016	46,012	13,670,663	8,624,414	14,950,360
Year 2	2017	46,288	13,765,405	8,683,890	15,053,473
Year 3	2018	46,566	13,860,809	8,743,783	15,157,308
Year 4	2019	46,846	13,956,881	8,804,095	15,261,869
Year 5	2020	47,127	14,053,626	8,864,830	15,367,162
Year 6	2021	47,409	14,151,048	8,925,989	15,473,193
Year 7	2022	47,694	14,249,152	8,987,577	15,579,965
Year 8	2023	47,980	14,347,942	9,049,596	15,687,486
Year 9	2024	48,268	14,447,424	9,112,049	15,795,758
Year 10	2025	48,557	14,547,603	9,174,939	15,904,789
<i>Ten-Yr Increase</i>		2,817	970,607	609,328	1,056,373
<i>Projected Revenue =></i>		\$1,112,869	\$165,003	\$432,623	\$295,784
		<i>Total Projected Revenue =></i>			\$2,006,279

Fire Impact Fees

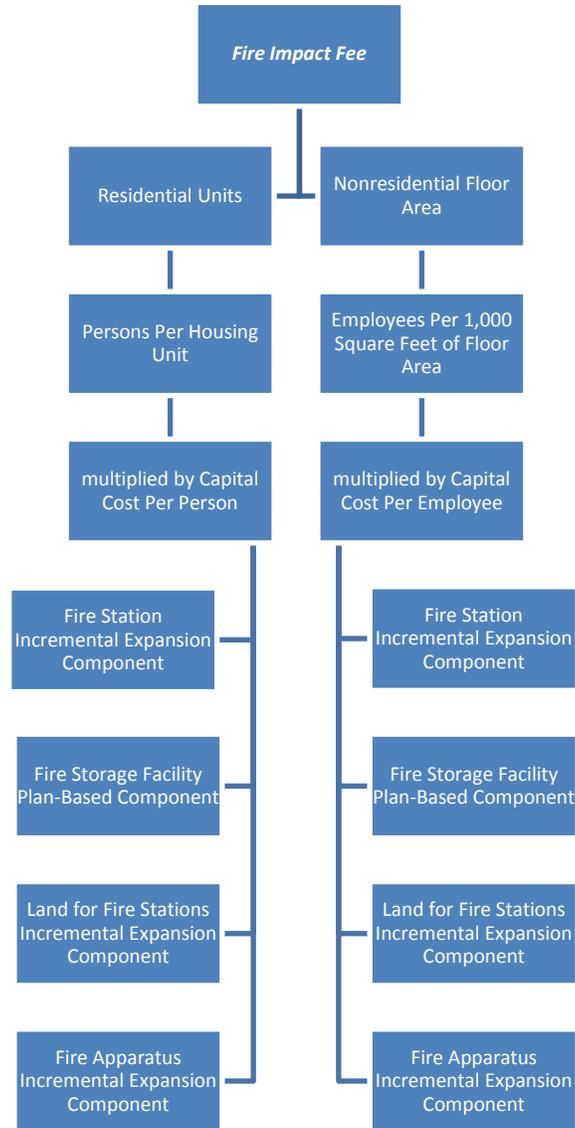
The City of Boulder Fire impact fee is based on the incremental expansion cost of Fire Services facilities, Fire apparatus, and land for future Fire stations. The City has identified future needs for new Fire Stations and expansion and relocations of existing Fire Stations in the following recently completed studies: *Space Needs Assessment for Fire Station 3 and Administration Building*¹⁴ and *Boulder Fire Rescue Station Location Report*.¹⁵ While the *FY2016-2021 City Capital Improvement Plan* identifies future Fire-Rescue projects, specific projects are not yet programmed in the CIP. Therefore, an incremental approach is recommended as this methodology will allow for the greatest flexibility for the City to expand and/or build new Fire facilities in the next few years. Due to requirement of the Colorado Impact Fee Act that capital facilities have useful lives of over five years, only heavy apparatus (e.g., engines, rescue trucks) is included. Also included is a separate land component, which is delineated from Station levels of service and costs and reflects a change from the previous Impact Fee Study.

The demand for Fire infrastructure is a function of both residential and nonresidential growth. To allocate demand for infrastructure, two main approaches can be used: The calls for service approach and the functional population approach. The calls for service approach uses local data on Fire/EMS calls for service to different land use types to establish the relationship between the demand for facilities and the type of development. Calls for service data is available from the City of Boulder Fire Department and is used to allocate costs to residential and nonresidential development.

¹⁴ Trestle Strategy Group, "Space Needs Assessment of Boulder Fire-Rescue Department's Fire Station 3 and Administration Building (Draft)," March 17, 2015.

¹⁵ City of Boulder, "Boulder Fire Rescue Station Location Report," March 2015.

Figure 42. Fire Impact Fee Methodology Chart



Proportionate Share Factors

To determine demand for Fire services and facilities, calls for service to residential and nonresidential land uses are used. Boulder Fire Department provided data on Fire call incidents by land use for calendar year 2014. TischlerBise used this call data to determine the proportionate share factors shown in Figure 43. This data indicated that the City responded to 9,753 calls to known land uses (see bottom of figure). Of those known uses, 42 percent were to residential land uses and 58 percent to nonresidential land uses.

Figure 43. Fire Proportionate Share Factors

	TOTAL	Nonresidential	Residential	Unknown
No Property Use Reported	30			30
000 Property Use, Other	33			33
100 Assembly	906	906		
200 Educational	322	322		
300 Health Care, Detention & Correction	985	985		
400 Residential	3,896		3,896	
449 Hotel/Motel, Commercial	126	126		
500 Mercantile, Business	1,171	1,171		
600 Industrial, Utility, Defense, Agriculture, Mining	58	58		
700 Manufacturing, Processing	41	41		
800 Storage	72	72		
881 Parking Garage (detached residential)	1		1	
899 residential or self-storage	1		1	
900 Outside or Special Property Nonres	1,941	1,941		
962 Residential street, road or residential driveway	233		233	
None	41			41
Undetermined	53			53
TOTALS	9,910	5,622	4,131	157

		% by Land Use
Residential	4,131	42%
Nonresidential	5,622	58%
Total to Known Land Uses	9,753	100%

Unknown	157
Grand Total	9,910

Source: City of Boulder Fire Department, Property Use Report (01/01/2014 - 12/31/2014); TischlerBise analysis.

Fire Level of Service Standards and Costs

Fire Service Facilities Incremental Expansion Cost Component

As discussed above, the Fire impact fees are derived using the incremental expansion approach for buildings and land, based on the current 2015 level of service. As shown in Figure 44, the City of Boulder has eight fire stations, headquarters, and a training center.

As shown, the City currently utilizes Fire Station and Office space totaling 79,318 square feet, including space that is owned and leased by the City of Boulder. Of that amount, 73,318 square feet is owned by the City.

Level of service (square feet per demand unit) is calculated by multiplying total square footage by proportionate share then dividing by applicable demand units. For Fire Facilities, levels of service are:

- Residential: $79,318 \text{ sq. ft.} \times 42\% \text{ proportionate share} / 104,808 \text{ population} = .32 \text{ sq. ft. per capita}$
- Nonresidential: $79,318 \text{ sq. ft.} \times 58\% \text{ proportionate share} / 98,510 \text{ jobs} = .47 \text{ sq. ft. per job}$

The current value for Fire buildings and contents (not apparatus) is from the City's 2015 Property Schedule. To reflect total replacement costs for Fire Facilities, 30 percent is added to the construction cost to reflect "soft" costs for predevelopment, site improvements, and other non-construction costs (per City of Boulder Facilities and Asset Management (FAM)). According to information provided by the City, Fire Facility space has a replacement value of approximately \$17.5 million, reflecting facilities owned by the City. The replacement cost per square foot is \$238 resulting in a cost per person of \$76 ($.32 \text{ sq. ft. per person} \times \$238 = \$76$) and a cost per job of \$112 ($.47 \text{ sq. ft. per job} \times \$238 = \$112$).

Figure 44. Fire Station Inventory and Costs

Facility	Location	Current Square Feet	Current Replacement Cost (Hard Costs)*	Current Replacement Cost (Soft Costs)**	Total Costs	Cost/SF
Station 1	2441 13th Street	7,941	\$1,439,036	\$431,711	\$1,870,747	\$236
Station 2	2225 Baseline	4,752	\$708,697	\$212,609	\$921,306	\$194
Station 3	1585 30th Street	6,160	\$802,289	\$240,687	\$1,042,976	\$169
Station 4	4100 Darley	3,498	\$521,797	\$156,539	\$678,336	\$194
Station 5	4365 19th Street	3,716	\$690,071	\$207,021	\$897,092	\$241
Station 6	5145 N 63rd Street	3,435	\$616,464	\$184,939	\$801,403	\$233
Station 7	1380 55th Street	5,081	\$979,907	\$293,972	\$1,273,879	\$251
Station 8	6055 Reservoir Road	11,268	\$3,425,000	\$1,027,500	\$4,452,500	\$395
Fire Headquarters	Center Green Offices	6,000	leased	na	na	na
Training Center	6055 Reservoir Road	27,467	\$4,254,538	\$1,276,361	\$5,530,899	\$201
TOTAL		79,318	\$13,437,799	\$4,031,340	\$17,469,139	\$220
TOTAL City Owned***		73,318	\$13,437,799	\$4,031,340	\$17,469,139	\$238

Cost per Square Foot=> **\$238**

	Proportionate Share	2015 Demand Units	LOS: Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	42%	104,808 persons	0.32	\$76
Nonresidential	58%	98,510 jobs	0.47	\$112

* Building, contents, equipment, miscellaneous improvements (City of Boulder Property Schedule, 2015).

** Soft costs estimated at 30 percent of construction costs per City of Boulder Facilities and Asset Management.

*** Average cost per square foot is average of City owned facilities.

Sources: City of Boulder Property Schedule, 2015; City of Boulder Facilities and Asset Management.

Fire Storage Facility Plan-Based Component

The Fire Department has indicated a current and future need for vehicle/apparatus storage, which is separate from the level of service provided in current Fire Station inventory. This facility is identified as a priority in the *2012 Fire-Rescue Master Plan Update* and the *Space Needs Assessment of Fire Station 3 and Administration Building*.¹⁶ The storage facility is currently identified in the CIP as an unfunded project as part of Fire Station 3/Administration.

The current assumption is that the storage facility will be separate from a new and/or relocated Fire Station 3 to allow for cost effective space utilization. Current planning estimates for facility specifications and costs are shown below in Figure 45. It should be noted that land costs are included in the estimate below however it is not known at this time whether a land purchase will be necessary for this facility.

Figure 45. Fire Storage Facility Level of Service Standards and Cost Factors

Project	Square Feet	Building Cost*	Land Cost*	Total Cost*
Fire Apparatus and Equipment Storage Facility (planned)	10,000	\$900,000	\$1,000,000	\$1,900,000

<i>Cost per Square Foot=></i>				\$190
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	Proportionate Share	2040 Demand Units	LOS: Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	42%	123,000 persons	0.03	\$6
Nonresidential	58%	117,010 jobs	0.05	\$10

* Planning estimates only. Construction costs estimated at \$850,000-\$1 million; 1 acre of land at \$1 million per acre.
Sources: City of Boulder Fire Rescue.

¹⁶ Trestle Strategy Group, "Space Needs Assessment of Boulder Fire-Rescue Department's Fire Station 3 and Administration Building (Draft)," March 17, 2015.

Fire Apparatus Incremental Expansion Component

The Fire impact fees also use an incremental expansion approach for Fire apparatus, based on the current 2015 level of service. Current replacement costs for the City's inventory of Fire apparatus (with a minimum 5-year useful life) are shown in Figure 46 and were provided by the City. As shown in Figure 46, the estimated current value totals approximately \$9.8 million.

Figure 46. Fire Apparatus Inventory and Costs

Item	Units	\$/Unit	Current Value
Fire Engines (Pumpers)	7	\$600,000	\$4,200,000
Fire Engines (Telesquirts)	3	\$850,000	\$2,550,000
Ladder Truck	1	\$1,200,000	\$1,200,000
Rescue Truck	2	\$250,000	\$500,000
Wild-Land Truck (Type 6)	3	\$200,000	\$600,000
Wild-Land Truck (Type 3)	2	\$350,000	\$700,000
TOTAL	18	\$541,667	\$9,750,000

	Proportionate Share	2015 Demand Units	LOS: Sq. Ft. per 1,000 Demand Units	Cost per Demand Unit
Residential	42%	104,808 persons	0.07	\$39
Nonresidential	58%	98,510 jobs	0.11	\$57

Source: City of Boulder Fire Department

Fire Station Land Incremental Expansion Component

The Fire impact fees also use an incremental expansion approach for Fire Station land, based on the current 2015 level of service. It is anticipated the City will need to purchase land for future Fire Station needs. Current levels of service and costs for the City’s inventory of Fire Station land are shown in Figure 47. Land values reflect current appraised values for each property. For Fire Station 8 and the Training Center, the City owns substantially more land than is needed for the Fire facilities on the site. Therefore, the amount shown is pro-rated to reflect an average site size based on the building square footage. As shown in Figure 47, the estimated current value of the land inventory is \$10.3 million, which reflects an average cost per acre of \$1.09 million.

Figure 47. Fire Station Land Inventory and Costs

Facility	Location	Current Acres	Current Value*	Value/Acre
Station 1	2441 13th Street	0.47	\$800,000	\$1,702,128
Station 2	2225 Baseline	0.29	\$871,200	\$3,004,138
Station 3	1585 30th	0.97	\$1,045,400	\$1,077,732
Station 4	4100 Darley	0.17	\$370,300	\$2,178,235
Station 5	4365 19th Street	0.54	\$457,400	\$847,037
Station 6	5145 N 63rd Street	0.99	\$638,300	\$644,747
Station 7	1380 55th Street	1.01	\$659,100	\$652,574
Station 8**	6055 Reservoir Road	1.45	\$1,577,546	\$1,090,473
Fire Headquarters	Center Green Offices	leased	leased	na
Training Center**	6055 Reservoir Road	3.53	\$3,845,444	\$1,090,473
TOTAL		9.41	\$10,264,690	\$1,090,473

Cost per Acre=> **\$1,090,473**

	Proportionate Share	2015 Demand Units	LOS: Sq. Ft. per Demand Unit	Cost per Demand Unit
Residential	42%	104,808 persons	0.04	\$44
Nonresidential	58%	98,510 jobs	0.06	\$65

* Boulder County Assessor, Online Property Search (data accessed by TischlerBise on Feb. 14, 2016).

** Station 8 and Training Center are on a total of 114 acres of City owned land. The acres identified are pro-rated for the facility size based on average Fire Station square feet per acre (floor area ratio). Value is estimated based on the weighted average for Stations 1-7 (\$1.09 million per acre).

Credit Evaluation

At present, the City of Boulder does not have any outstanding property-tax backed bonded debt related to the construction of Fire facilities. Therefore, a credit for existing bond financing is not applicable to this impact fee.

Residential Impact Fees for Fire Facilities and Apparatus

Figure 48 provides the schedule of Fire impact fees by finished floor area for residential development. Capital cost per person, multiplied by persons per housing unit by size of housing unit, yields the residential impact fee schedule for Fire facilities.

Figure 48. Fire Input Factors and Maximum Supportable Residential Impact Fee Schedule

<i>Level Of Service</i>	<i>Factors</i>	
	<i>Per Person</i>	
Fire Station Cost		\$76
Fire Storage Facility Cost		\$6
Fire Apparatus Cost		\$39
Fire Station Land Cost		\$44
Debt Service Cost		\$0
Net Capital Cost		\$165

RESIDENTIAL IMPACT FEES			
<i>Square Feet</i>	<i>Development Unit</i>	<i>Persons per Housing Unit</i>	<i>Impact Fee per Housing Unit</i>
<i>(finished floor area)</i>		<i>All Housing Unit Types</i>	<i>All Housing Unit Types</i>
Residential (by square feet of finished living space)			
600	Dwelling Unit	1.17	\$193
800	Dwelling Unit	1.47	\$242
1,000	Dwelling Unit	1.70	\$280
1,200	Dwelling Unit	1.89	\$311
1,400	Dwelling Unit	2.05	\$338
1,600	Dwelling Unit	2.19	\$361
1,800	Dwelling Unit	2.32	\$382
2,000	Dwelling Unit	2.42	\$399
2,200	Dwelling Unit	2.52	\$415
2,400	Dwelling Unit	2.61	\$430
2,600	Dwelling Unit	2.70	\$445
2,800	Dwelling Unit	2.78	\$458
3,000	Dwelling Unit	2.85	\$470
3,200	Dwelling Unit	2.91	\$480
3,400	Dwelling Unit	2.98	\$491
3600+	Dwelling Unit	3.04	\$501

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per person** compared to the **current cost per person** from the current City of Boulder Impact Fee schedule for the residential component of the Fire category. It should be noted that the current cost per person shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.¹⁷ Figure 49 compares the draft calculated cost to the current schedule for the residential component of the Fire category.

Figure 49. Fire Fee Comparison (Residential): Current Cost per Person to Updated Cost per Person

	Cost per Person (2016)	Current City of Boulder Impact Fee Cost per Person[^]	Increase / Decrease
Fire	\$165	\$102	\$63

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

¹⁷ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Nonresidential Impact Fees for Fire Facilities and Apparatus

Figure 50 shows the schedule of maximum allowable Fire impact fees for nonresidential development. For nonresidential land uses, such as a retail establishment, the number of employees per square feet (.00251) is multiplied by the capital cost per employee (\$244), for an impact fee of \$0.61 per square foot.

Figure 50. Fire Input Factors and Maximum Supportable Nonresidential Impact Fee Schedule

<i>Level Of Service</i>	<i>Factors</i>	
		<u><i>Per Employee</i></u>
Fire Station Cost		\$112
Fire Storage Facility Cost		\$10
Fire Apparatus Cost		\$57
Fire Station Land Cost		\$65
Debt Service Cost		\$0
Net Capital Cost		\$244

NONRESIDENTIAL IMPACT FEES			
<i>Nonresidential Land Use</i>	<i>Development Unit</i>	<i>Jobs per Development Unit</i>	<i>Impact Fee per Development Unit</i>
Retail / Restaurant / Service	Square Feet of Floor Area	0.00251	\$0.61
Office	Square Feet of Floor Area	0.00359	\$0.87
Light Industrial	Square Feet of Floor Area	0.00231	\$0.56
Warehousing	Square Feet of Floor Area	0.00092	\$0.22
Institutional	Square Feet of Floor Area	0.00081	\$0.19
Hospital	Square Feet of Floor Area	0.00294	\$0.71
Nursing Home/Assisted Living	Bed	0.84	\$204.00
<i>Nursing Home/Assisted Living*</i>	<i>Square Feet of Floor Area</i>	<i>0.0021</i>	<i>\$0.13</i>
Lodging	Room	0.57	\$139.00
<i>Lodging**</i>	<i>Square Feet of Floor Area</i>	<i>0.00095</i>	<i>\$0.06</i>

* For illustration and comparison with per square foot impact fees, assumes an average of 400 sq. ft. per bed

** For illustration and comparison with per square foot impact fees, assumes an average of 600 sq. ft. per room

Comparison to Current Impact Fees

Because the proposed land use categories have changed from the current City of Boulder Impact Fee schedule, the figure below provides a comparison of the **draft calculated cost per employee** compared to the **current cost per employee** from the current City of Boulder Impact Fee schedule for the nonresidential component of the Fire category. It should be noted that the current cost per employee shown below is calculated based on the adopted amount in 2010 and escalated per the annual increases the City has applied in its annual updates.¹⁸ Figure 51 compares the draft calculated cost to the current schedule for the nonresidential component of the Fire category.

Figure 51. Fire Fee Comparison (Nonresidential): Current Cost per Employee to Updated Cost per Employee

	<i>Cost per Employee (2016)</i>	Current City of Boulder Impact Fee Cost per Employee [^]	Increase / Decrease
Fire	\$244	\$143	\$101

[^] Cost as originally adopted in 2010 and inflated to current dollars (FY2016) using annual percentage increases per City of Boulder.

¹⁸ The annual increases are as follows:

<i>Fiscal Year</i>	<i>% Increase</i>
2011	0.0%
2012	0.0%
2013	4.7%
2014	1.8%
2015	3.2%
2016	2.0%

Projected Revenue

The revenue projection shown in Figure 52 is calculated based on the preliminary calculated 2016 Fire Impact Fee and the development projections described in the land use assumptions (Appendix A). To the extent the rate of development either accelerates or slows down, there will be a corresponding change in Impact Fee revenue and the timing of the need for capital improvements.

Figure 52. Projected Fire Impact Fee Revenue

		<i>Residential</i>	<i>Industrial</i>	<i>Retail</i>	<i>Office and Other Services</i>
<i>Fee (Wtd Avg)</i>		\$353	\$0.56	\$0.61	\$0.87
		per housing unit	per sq. ft.	per sq. ft.	per sq. ft.
<i>Year</i>		<i>Housing Units</i>	<i>Square Feet</i>	<i>Square Feet</i>	<i>Square Feet</i>
Base	2015	45,740	13,576,996	8,565,611	14,848,416
Year 1	2016	46,012	13,670,663	8,624,414	14,950,360
Year 2	2017	46,288	13,765,405	8,683,890	15,053,473
Year 3	2018	46,566	13,860,809	8,743,783	15,157,308
Year 4	2019	46,846	13,956,881	8,804,095	15,261,869
Year 5	2020	47,127	14,053,626	8,864,830	15,367,162
Year 6	2021	47,409	14,151,048	8,925,989	15,473,193
Year 7	2022	47,694	14,249,152	8,987,577	15,579,965
Year 8	2023	47,980	14,347,942	9,049,596	15,687,486
Year 9	2024	48,268	14,447,424	9,112,049	15,795,758
Year 10	2025	48,557	14,547,603	9,174,939	15,904,789
<i>Ten-Yr Increase</i>		2,817	970,607	609,328	1,056,373
<i>Projected Revenue =></i>		\$994,538	\$543,540	\$371,690	\$919,044
			<i>Total Projected Revenue =></i>		\$2,828,812

Implementation and Administration

All costs in the impact fee calculations are given in current dollars with no assumed inflation rate over time. Necessary cost adjustments can be made as part of the recommended annual evaluation and update of impact fees. One approach is to adjust for inflation in construction costs by means of an index specific to construction as opposed to the consumer price index (CPI), which is more general in nature. TischlerBise recommends using the Marshall Swift Valuation Service or Engineering News Record (ENR), which provides comparative cost multipliers for various geographies and types of construction. The multipliers can be applied against the calculated impact fee. If cost estimates change significantly the City should redo the fee calculations.

There are certain accounting procedures that should be followed by the City. For example, monies received should be placed in a separate fund and accounted for separately and may only be used for the purposes authorized in the impact fee ordinance. Interest earned on monies in the separate fund should be credited to the fund.

Credits and Reimbursements

Future Revenue Credits

There are three basic approaches used to calculate impact fees and each is linked to different credit methodology. The first major type of impact fee method is a cost recovery approach. This method is used for facilities that have adequate capacity to accommodate new development for at least a five to six year time frame. The rationale for the cost recovery is that new development is paying for its share of the useful life or remaining capacity of the existing facility. When using a cost recovery method, it is important to determine whether new development has already contributed toward the cost of existing public facilities. This type of credit is not necessary as new growth will pay its share of debt incurred for land purchased for Municipal Facilities through the impact fees.

A second basic approach used to calculate impact fees is the incremental expansion cost method. This method documents current factors and is best suited for public facilities that will be expanded incrementally in the future. Because new development will provide front-end funding of infrastructure, there is a potential for double payment of capital costs due to future principal

payments on existing debt for public facilities. A credit is not necessary for interest payments if interest costs are not included in the impact fees. This type of credit is not necessary for any of the impact fees calculated herein as there is no outstanding debt for capacity expansions.

A third basic approach used to calculate impact fees is the plan-based method. This method is based on future capital improvements needed to accommodate new development. The plan-based method may be used for public facilities that have commonly accepted service delivery factors to determine the need for future projects or the jurisdiction plans to significantly increase the current level of service standards. If a plan-based approach is used to derive impact fees, the credit evaluations should focus on future dedicated revenues that will fund growth-related capital improvements. This type of credit is not necessary for the fees calculated herein.

Site-Specific Credits

If a developer constructs a system improvement that was included in the fee calculations, it will be necessary to either reimburse the developer or provide a credit against the fees in the area benefiting from the system improvement. Project improvements normally required as part of the development approval process are not eligible for credits or offsets against impact fees. Specific policies and procedures related to site-specific credits or developer reimbursements for system improvements should be addressed in the ordinance that establishes the City's fees.

Based on TischlerBise's experience, it is better for the City to establish a reimbursement agreement with the developer that constructs a system improvement rather than provide a credit off of the fee. The latter is often more difficult to administer because it creates unique fees for specific geographic areas. The reimbursement agreement should be limited to a payback period of no more than ten years and the City should not pay interest on the outstanding balance. The developer must provide sufficient documentation of the actual cost incurred for the system improvement. The City of Boulder should only agree to pay the lesser of the actual construction cost or the estimated cost used in the impact fee analysis. If the City pays more than the cost used in the fee analysis, there will be insufficient fee revenue. Reimbursement agreements should only obligate the City to reimburse developers annually according to actual fee collections from the benefiting area.

Collection and Expenditure Zones

The reasonableness of impact fees is determined in part by their relationship to the local government's burden to provide necessary public facilities. The need to show a benefit usually requires communities to evaluate collection and expenditure zones for public facilities that have distinct geographic service areas. Consideration of zones will enable the City to show that developments paying fees are benefiting from the provision of additional capital improvements.

TischlerBise recommends a citywide fee for all impact fee calculated herein. All improvements covered under the impact fee program are derived based on citywide demand and will have a citywide benefit.

Appendix A. Land Use Memo and Demographic Data



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To: Chris Meschuk, AICP
Senior Planner, Department of Community Planning & Sustainability
City of Boulder

From: Dwayne Guthrie, Ph.D., AICP, and Julie Herlands, AICP
TischlerBise

Date: September 20, 2016

RE: Land Use Assumptions for Impact Fee/Excise Tax Studies

Attached please find Draft Land Use Assumptions for the Impact Fee/Excise Tax Studies. This document will become an Appendix to the final report(s) developed for this assignment.

Please let us know if there are any comments or questions. Thank you.

Appendix A: Demographic Data

The population, housing unit, and job projections contained in this document provide the foundation for the Impact Fee/Excise Tax update for the City of Boulder. To evaluate the demand for growth-related infrastructure from various types of development, TischlerBise prepared documentation on population, housing units, jobs, nonresidential floor area, Average Weekday Vehicle Trip Ends (AWVTE), and demand indicators by type and size of dwelling. These metrics (explained further below) are the service units and demand indicators that will be used in the impact fee update.

Impact fees are based on the need for growth-related improvements and they must be proportionate by type of land use. Demographic data and development projections will be used to demonstrate proportionality and anticipate the need for future infrastructure. All land use assumptions and projected growth rates are consistent with socioeconomic data from the 2015 Boulder Valley Comprehensive Plan Trends Report. In contrast to the Comprehensive Plan, that has a long-range horizon, impact fees/excise taxes require a quantitative analysis with a shorter focus. Typically, impact fee studies look out five to ten years, with the expectation that fees will be periodically updated (e.g., every 5 years). Infrastructure standards are calibrated using Fiscal Year 2015 data, with FY16 being the first projection year. In the City of Boulder, the fiscal year begins on January 1st.

Impact Fee/Excise Tax Service Area

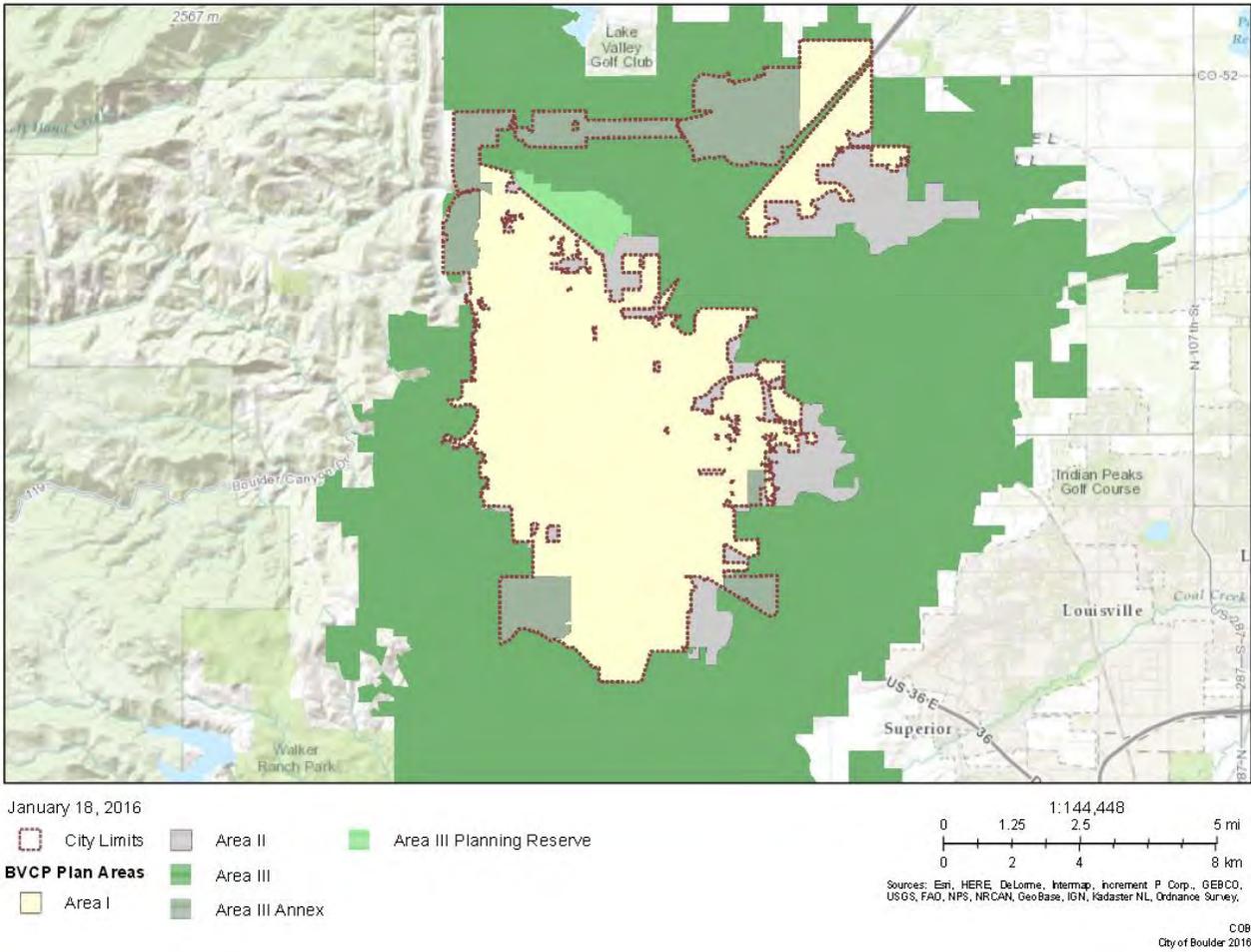
The City of Boulder is part of the Boulder Valley planning area, which is comprised of three areas:

- Area I is the urbanized area of the city.
- Area II is under county jurisdiction but where annexation to the city can be considered and where new urban development may occur coincident with adequate facilities and services.
- Area III is the remaining area in the Boulder Valley, generally under county jurisdiction and where the city and county intend to preserve existing rural land uses and character.¹

The service area for the Impact Fee/Excise Tax study is the city limits. City estimates for 2015 and projections for 2015 to 2040 from the *2015 Boulder Valley Comprehensive Plan (BVCP) Trends Report* are used in this analysis and reflect development within Boulder City limits as defined in the BVCP. **For growth projections, city limits includes future development in both Area I and annexed portions of Area III.**

¹ 2015 BVCP Trends Report.

Figure A1: City of Boulder Planning Areas



Summary of Growth Indicators

Key development projections for the City of Boulder Impact Fee/Excise Tax study are housing units and nonresidential floor area, as shown in Figure A2. These projections will be used to estimate impact fee/excise tax 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 fee methods are designed to reduce sensitivity to development projections in the determination of the proportionate-share fee amounts, if actual development is slower than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the City will receive an increase in fee revenue, but will also need to accelerate infrastructure improvements to keep pace with the actual rate of development.

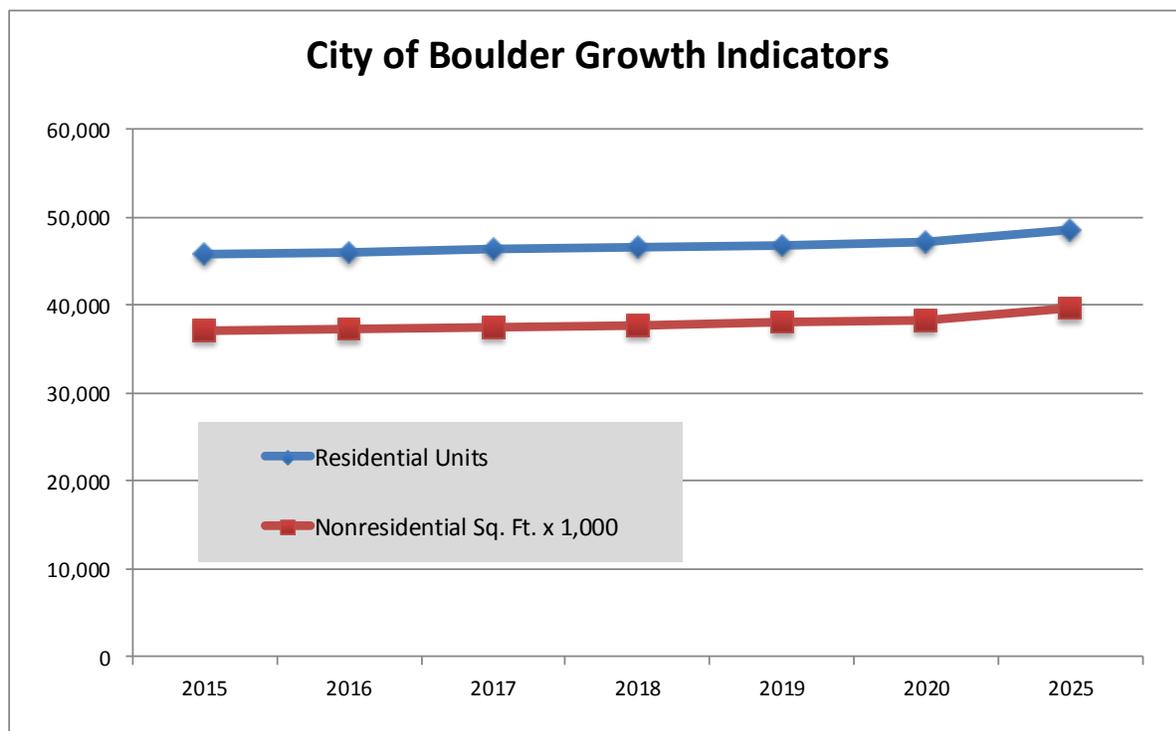
During the next five years, the 2015-2016 impact fee update expects an average increase of 282 housing units per year in the City. In comparison, 365 housing units on average were added per year from 2010 to 2014 and 387 units per year on average from 2004 to 2014.²

For nonresidential development, over the next five years, the City of Boulder expects an average increase of 264,000 square feet of nonresidential floor area per year. Current estimates of floor area by type of nonresidential development are discussed below (see Figure A10 and related text).

² Because approximately 80 percent of recent housing development in the City is multifamily units, development activity is relatively “lumpy,” with yearly increases and decreases reflecting completion of multifamily buildings with multiple buildings coming online as opposed to single units.

Figure A2: Summary of Development Projections and Growth Rates

City of Boulder	10-Year Projection Period								Increase	Compound Growth Rate
	One-Year Intervals					5-Year Interval		2015 to 2025 Average Annual		
	2015	2016	2017	2018	2019	2020	2025			
Residential Units	45,740	46,012	46,288	46,566	46,846	47,127	48,557	282	0.62%	
Nonresidential Sq. Ft. x 1,000	36,991	37,245	37,503	37,762	38,023	38,286	39,627	264	0.71%	

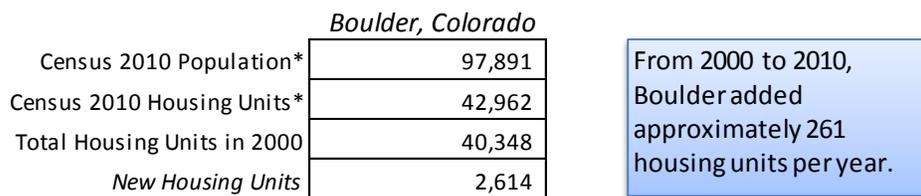


Sources: Figure A12: Population and Housing Unit Projections; Figure A13: Projected Jobs and Nonresidential Floor Area

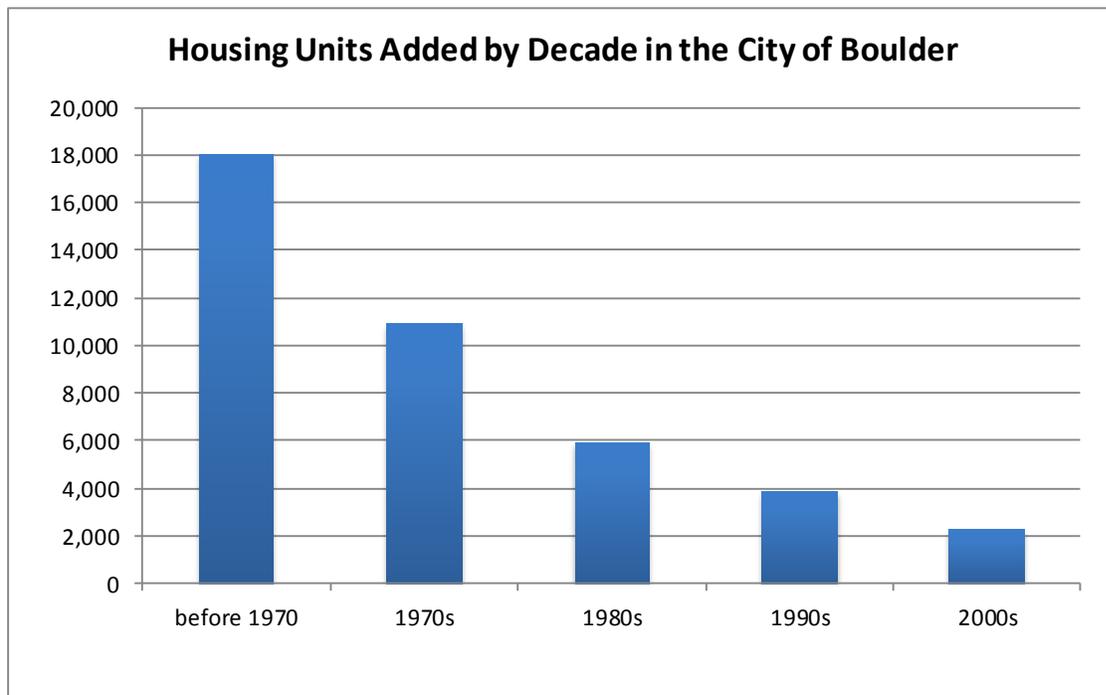
Residential Construction

From 2000 to 2010, the City of Boulder increased by an average of 261 housing units per year. Figure A3 indicates citywide housing units added by decade in the city, according to data obtained from the U.S. Census Bureau and the 2015 BVCP Trends Report. Consistent with the nationwide decline in development activity during the Great Recession, residential construction slowed significantly from 2008 to 2010, thus decreasing the number of units added during the past decade. However, development activity has increased in recent years, and the City of Boulder estimates that over the last five years (2010 through 2014), approximately 365 units have been built per year.

Figure A3: Housing Units by Decade



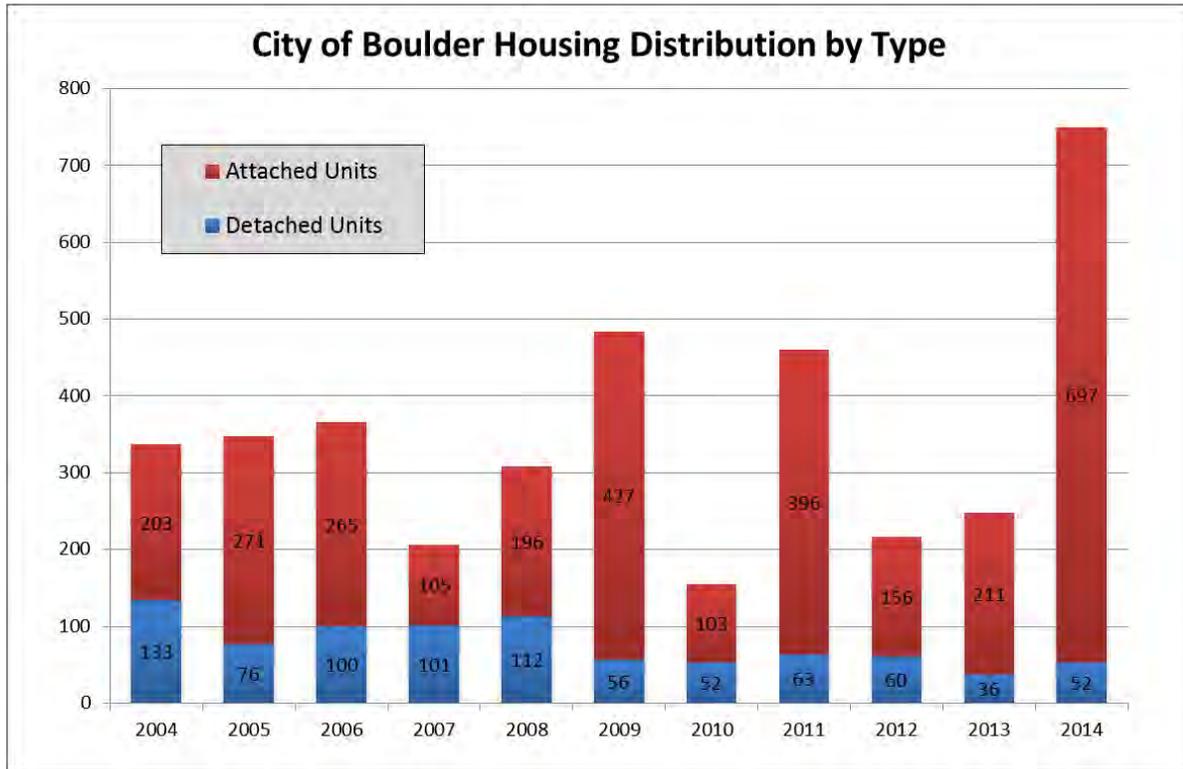
* From City of Boulder, 2015 BVCP Trends Report.



Sources: City of Boulder, 2015 BVCP Trends Report; US Census American Community Survey

Furthermore, recent residential development in the City has been in multifamily structures rather than detached, single family homes. Figure A4 provides detail on residential construction over the last ten years illustrating the recent demand and absorption of multifamily units at a recent trend of approximately 80 percent multifamily attached and 20 percent single family detached, which is consistent with the distribution assumed in the BVCP projections

Figure A4: City of Boulder Housing Unit Distribution Trends by Type



Source: 2015 BVCP Trends Report

Figure A5: City of Boulder Housing Unit 10-Year and 5-Year Trends by Type

	10-Yr Trend	5-Yr Trend
Detached Units	708	263
Attached Units	2,827	1,563
Total Net Increase	3,535	1,826
<i>Average Annual</i>	354	365
Detached %	20%	14%
Attached %	80%	86%

Source: 2015 BVCP Trends Report

Residential Demand Factors

The 2010 Census did not obtain detailed information using a “long-form” questionnaire. Instead, the U.S. Census Bureau has switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which is limited by sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). Part of the rationale for deriving fees by bedroom range, as discussed further below, is to address this ACS data limitation. Because townhouses generally have fewer bedrooms and less living space than detached units, fees by house size ensure proportionality and facilitate construction of affordable units.

According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Impact fees often use per capita standards and persons per housing unit, or persons per household, to derive proportionate-share fee amounts. TischlerBise recommends that fees for residential development in Boulder be imposed according to the number of year-round residents per housing unit. Figure A6 indicates the average number of year-round residents per housing unit.

Figure A6: Year-Round Persons per Unit by Type of Housing

2013 Summary by Two House Types: City of Boulder

<i>Units in Structure</i>	<i>Persons</i>	<i>Households</i>	<i>Persons per Household</i>	<i>Housing Units</i>	<i>Persons per Housing Unit</i>	<i>Housing Mix</i>	<i>Vacancy Rate</i>
Single Unit*	57,742	22,479	2.57	23,284	2.48	52.9%	3%
All Other	36,747	19,828	1.85	20,767	1.77	47.1%	5%
Subtotal	94,489	42,307	2.23	44,051	2.14		4%
Group Quarters	8,674						
TOTAL	<u>103,163</u>						

* Single unit includes detached and attached (e.g. townhouse).

Source: Tables B25024, B25032, B25033, and B26001.

2013 American Community Survey 1-Year Estimates, U.S. Census Bureau.

Demand Indicators by Dwelling Size

Custom tabulations of demographic data by bedroom range can be created from individual survey responses provided by the U.S. Census Bureau, in files known as Public Use Micro-data Samples (PUMS). PUMS files are available for areas of roughly 100,000 persons, and the City of Boulder is wholly contained in Public Use Micro-data Areas (PUMA) 803. At the top of Figure A7, in the cells with yellow shading, are the survey results for the City of Boulder. Unadjusted persons per dwelling, derived from PUMS data, were adjusted upward to match the control totals for the City of Boulder, as documented above in Figure A6.

Figure A7: Average Number of Persons by Bedroom Range (All Housing Types)

City of Boulder 2013 Data

<i>Bedroom Range</i>	<i>Persons (1)</i>	<i>Vehicles Available (1)</i>	<i>Housing Units (1)</i>	<i>Boulder Hsg Mix</i>	<i>Unadjusted Persons/HU</i>	<i>Adjusted Persons/HU (2)</i>
0-1	114	89	89	19%	1.28	1.31
2	220	162	121	25%	1.82	1.86
3	296	236	134	28%	2.21	2.26
4+	372	300	135	28%	2.76	2.83
Total	1,002	787	479		2.09	2.14

(1) American Community Survey, Public Use Microdata Sample for CO PUMA 803 (2013 One-Year unweighted data).
 (2) Adjusted multipliers are scaled to make the average PUMS values match control totals based on American Community Survey 2013 1-year data for the City of Boulder.

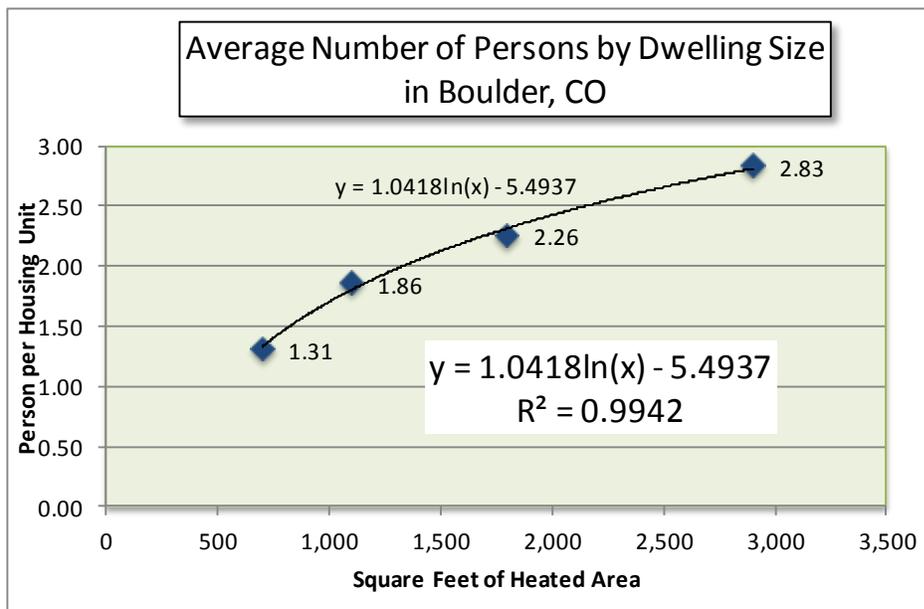
Average Number of Persons by Dwelling Size

Average floor area and number of persons by bedroom range are plotted in Figure A8, with a logarithmic trend line derived from four actual averages in the City. Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons, by dwelling size, using five size thresholds. For the purpose of impact fees/excise taxes, TischlerBise recommends a minimum fee based on a unit size of 600 square feet and a maximum fee for units 3600 square feet or larger. Average dwelling sizes by bedroom range in the City was derived from the Property Assessor parcel database.

Figure A8: Persons by Square Feet of Living Space (All Housing Types)

Average dwelling size by bedroom range is from Property Assessor parcel database. Average persons per housing unit by bedroom range are derived from 2013 1-Year ACS PUMS data for CO PUMA 803 (City of Boulder).

Actual Averages per Hsg Unit			Fitted-Curve Values	
Bedrooms	Square Feet	Persons	Square Feet	Persons
0-1	700	1.31	600	1.17
2	1,100	1.86	800	1.47
3	1,800	2.26	1000	1.70
4+	2,900	2.83	1200	1.89
			1400	2.05
			1600	2.19
			1800	2.32
			2000	2.42
			2200	2.52
			2400	2.61
			2600	2.70
			2800	2.78
			3000	2.85
			3200	2.91
			3400	2.98
			3600+	3.04



Nonresidential Development Demand Indicators

In addition to data on residential development, the calculation of impact fees requires data on nonresidential development. TischlerBise uses the term “jobs” to refer to employment by place of work.

Figure A9 indicates the key nonresidential development prototypes that will be used to derive average weekday vehicle trips and Vehicle Miles of Travel (VMT). Current floor area estimates for industrial, commercial, and office/other services, are documented in the next section.

The prototype for future commercial development (i.e., retail and eating/drinking places) is an average-size Shopping Center (ITE code 820). For office and other services, General Office (ITE 710) is the prototype for future development. For future industrial development, two prototypes are included to reflect differences between Light Industrial (ITE code 110) and Warehouse (ITE code 150). (Current industrial estimates and projections use local data.) The remaining nonresidential land use categories included below are anticipated to be included in the impact fee schedule. ITE data for nonresidential land uses are used to reflect the relative average demand on the system from different types of land uses to be used in limited parts of the Impact Fee/Excise Tax Study—Police Impact Fee update and the Multimodal Transportation Funding Study. Further adjustments are anticipated to be made regarding these assumptions particularly for the Multimodal Transportation components of the Study as it progresses.

Figure A9: Nonresidential Service Units per Development Unit

<i>Nonres. Category#</i>	<i>ITE Code</i>	<i>Nonresidential Land Use</i>	<i>Development Unit</i>	<i>ITE Trip Rate per Development Unit</i>	<i>Employees per Development Unit*</i>	<i>Sq. Ft. per Employee*</i>
1	820	Retail / Restaurant / Service	1,000 Sq Ft	42.7	2.51	399
2	710	Office	1,000 Sq Ft	11.03	3.59	279
3	110	Light Industrial [^]	1,000 Sq Ft	6.97	2.31	433
4	150	Warehousing [^]	1,000 Sq Ft	3.56	0.92	1,087
5	520	Institutional ^{**}	1,000 Sq Ft	14.03	0.81	1,235
6	610	Hospital	1,000 Sq Ft	13.22	2.94	340
7	620	Nursing Home/Assisted Living	Bed	2.74	0.84	na
8	310	Lodging	Room	8.17	0.57	na

* Factors derived from ITE trip data except Retail and Office, which is derived from local data (parcel database and current jobs)

[^] Two industrial categories are included here for use in the Impact Fee schedule due to different demand indicators between industrial subcategories.

** Institutional = E.g., schools, churches

Sources: Trip Generation, Institute of Transportation Engineers (ITE), 9th Edition (2012);

Boulder County parcel database for City of Boulder (TischlerBise analysis); QCEW 2014 (CO Dept. of Labor and Employment)

Figure A10 provides the estimate of number and type of jobs located in the City of Boulder in 2015. The 2015 total job estimate of 98,510 is from the City of Boulder *2015 BVCP Trends Report* and reflects total of jobs of any type and any location including self-employment. To determine the estimate of jobs at nonresidential locations, TischlerBise used average annual 2014 Quarterly Census of Employment and Wages (QCEW) data for the City of Boulder and applied that distribution to the 2015 at-place estimate of 89,202.

Figure A10: Jobs Estimate by Type

	<i>Jobs 2014*</i>	<i>% of At-Place</i>	<i>Jobs 2015^</i>	<i>% of Total Jobs</i>
Retail / Restaurant / Services	21,232	24%	21,482	22%
Office / Institutional	52,647	60%	53,268	54%
Industrial	14,283	16%	14,451	15%
Total (At Place Jobs)	88,162	100%	89,202	91%
Self-Employed Estimate**			9,308	9%
Total Jobs			98,510	100%

* Colorado Dept. of Labor and Employment, Quarterly Census of Employment and Wages (QCEW) 2014 average annual.

^ City of Boulder 2015 for estimate of at-place jobs and self-employed; distributed based on QCEW 2014 data.

** City of Boulder 2015 estimate.

Using the above data and nonresidential floor area from the City’s parcel database, average square feet per job (and jobs per 1,000 square feet) can be derived. The City currently has approximately 37 million square feet of nonresidential building space in 2015. Dividing floor area by jobs indicates current averages by type of development as shown in Figure A11.

Figure A11: Nonresidential Floor Area Estimates and Demand Factors

	<i>Sq. Ft.*</i>	<i>Jobs 2015^</i>	<i>% Jobs Distribution</i>	<i>Sq. Ft. per Job</i>	<i>Jobs per 1,000 Sq. Ft.</i>
Retail / Restaurant / Services	8,565,611	21,482	24%	399	2.51
Office / Institutional	14,848,416	53,268	60%	279	3.59
Industrial**	13,576,996	14,451	16%	940	1.06
Total Nonresidential	36,991,023	89,202	100%		

* County parcel database for City of Boulder; TischlerBise analysis

^ City of Boulder 2015 for estimate of at-place jobs and self-employed; distributed based on QCEW 2014 data.

** Industrial jobs and square footage reflects the estimated aggregated industrial development of all subcategories in the City of Boulder; therefore the blended average jobs per 1,000 sq. ft. differs from Figure A10.

Detailed Land Use Assumptions

Demographic data shown in Figure A12 will be key inputs for the City of Boulder’s impact fee/excise tax update. Cells with gray shading are from the *2015 BVCP Trends Report*. Per the City projections, it is anticipated that the City will reach residential buildout at 52,000 housing units and 123,000 residents, which occurs prior to 2040.

New housing development is assumed to be predominantly multifamily development. Using recent trends, as shown above in Figure A4 from the *2015 BVCP Trends Report*, new housing units are assumed to be 20 percent single family and 80 percent multifamily.

Figure A12: Population and Housing Unit Projections

	2015	Projections ==>									25-Year Net Increase
		2016	2017	2018	2019	2020	2025	2030	2035	2040	
	Base Yr	1	2	3	4	5	10	15	20	25	
Cumulative Population											
Population [^]	104,808	105,566	106,324	107,082	107,840	108,598	112,388	116,178	119,968	123,000	18,192
Annual Net Increase in Population		758	758	758	758	758	758	758	758	0	
Cumulative Housing Units											
	New %										
Housing Units [^]	45,740	46,012	46,288	46,566	46,846	47,127	48,557	50,032	51,551	52,010	6,270
Single Family Hsg Units	20%	24,242	24,297	24,352	24,407	24,463	24,520	24,806	25,101	25,404	1,254
All Other Hsg Units	80%	21,498	21,716	21,937	22,159	22,382	23,752	24,931	26,146	26,514	5,016
Annual Net Increase in Housing Units		272	276	278	279	281	290	298	307	0	6,270

[^] Includes Colorado University group quarters population (in dormitories) and residential units (apartments)
Source: 2015 BVCP Trends Report; TischlerBise analysis

Figure A13 provides projected jobs, by type of nonresidential floor area. Cells with gray shading are from the *2015 BVCP Trends Report*.

Projected jobs (shown at top of the figure) were converted to projections of nonresidential floor area (at the bottom of the figure) using the current multipliers listed above in Figure A9. The projected “jobs to population” ratio is shown at the bottom of the figure for informational purposes.

Figure A13: Projected Jobs and Nonresidential Floor Area

	Projections ==>										25-Year Net Increase	
	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040		
	Base Yr	1	2	3	4	5	10	15	20	25		
Cumulative Jobs												
Total Employment	98,510	99,187	99,871	100,561	101,255	101,954	105,523	109,219	113,047	117,010	18,500	
Annual Net Increase in Jobs		677	685	689	694	699	724	750	776	804		
	% of Total											
Retail / Restaurant / Services	22%	21,482	21,630	21,779	21,930	22,081	22,233	23,012	23,818	24,652	25,517	4,034
Office / Institutional	54%	53,268	53,634	54,004	54,377	54,753	55,131	57,061	59,059	61,129	63,272	10,003
Industrial	15%	14,451	14,551	14,651	14,752	14,854	14,957	15,480	16,022	16,584	17,165	2,714
Total (At Place Jobs)		89,202	89,815	90,435	91,059	91,688	92,321	95,553	98,899	102,365	105,954	16,752
Self-Employed Estimate	9%	9,308	9,372	9,437	9,502	9,567	9,633	9,971	10,320	10,682	11,056	1,748
Total Jobs		98,510	99,187	99,871	100,561	101,255	101,954	105,523	109,219	113,047	117,010	18,500
Annual Net Increase in Jobs												
Retail / Restaurant / Services			148	149	150	151	152	158	163	169	175	4,034
Office / Institutional			366	370	373	375	378	391	405	420	435	10,003
Industrial			99	100	101	102	103	106	110	114	118	2,714
Total (At Place Jobs)			613	620	624	629	633	655	679	703	728	16,752
Self-Employed Estimate			64	65	65	66	66	68	71	73	76	1,748
Total Jobs			677	685	689	694	699	724	750	776	804	18,500
Nonresidential Square Footage												
	Jobs/1000sf											
Retail / Restaurant / Services	2.51	8,565,611	8,624,414	8,683,890	8,743,783	8,804,095	8,864,830	9,174,939	9,496,055	9,828,568	10,172,884	1,607,273
Office / Institutional	3.59	14,848,416	14,950,360	15,053,473	15,157,308	15,261,869	15,367,162	15,904,789	16,461,497	17,037,966	17,634,895	2,786,479
Industrial	1.06	13,576,996	13,670,663	13,765,405	13,860,809	13,956,881	14,053,626	14,547,603	15,059,113	15,588,778	16,137,243	2,560,247
Total Nonresidential Square Footage		36,991,023	37,245,437	37,502,768	37,761,900	38,022,846	38,285,618	39,627,331	41,016,665	42,455,312	43,945,021	6,953,998
Annual Net Increase in Nonres Sq. Ft.			254,414	257,331	259,132	260,946	262,773	272,099	281,757	291,757	302,113	
Population		104,808	105,566	106,324	107,082	107,840	108,598	112,388	116,178	119,968	123,000	18,192
Jobs to Population Ratio		0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.95	1.02

Source: 2015 BVCP Trends Report; TischlerBise analysis



2016 Transportation Development Impact Fee Study

Prepared for:
City of Boulder, Colorado

September 20, 2016

TischlerBise
FISCAL | ECONOMIC | PLANNING

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EXECUTIVE SUMMARY

As part of the 2016 transportation work scope, TischlerBise will prepare three products for the City of Boulder. This document focuses on the capital cost of transportation improvements needed to accommodate new development assuming more rigorous Development Impact Fee (DIF) legal requirements. A second work product will provide a Development Excise Tax (DET) study for a broader set of growth-related transportation improvements. The third work product will focus on operational costs and on-going maintenance of Boulder's multimodal transportation system.

As a revenue raising mechanism, an excise tax has less restrictive legal constraints than an impact fee. The latter is a form of land use regulation, imposed under the City's police power, for the purpose of health, safety, and welfare. In Colorado, local governments must establish an impact fee at a level no greater than necessary to defray projected impacts caused by, and directly related to, proposed development. Also, impact fees may only be used for capital facilities, excluding replacement of infrastructure and correcting existing deficiencies [see CRS 29-20-104.5].

This report complies with Colorado's impact fee enabling legislation and applicable legal precedents. The proposed 2016 Transportation DIF schedule is proportionate and reasonably related to the growth cost of capital facilities needed to serve new development [see CRS 29-20-104.5 (1) and (2)]. Specific costs have been identified using local data and current dollars. With input from City staff, TischlerBise determined demand indicators for transportation capacity and calculated proportionate share factors to allocate costs by type of development. Transportation DIF methodologies also identify the extent to which new development is entitled to various types of credits to avoid potential double payment of growth-related capital improvements.

GENERAL IMPACT FEE METHODS

In contrast to project-level improvements, impact fees fund the growth cost of infrastructure that will benefit multiple development projects, or the entire jurisdiction (referred to as system improvements). There are three general methods for calculating one-time development charges for public facilities needed to accommodate new development. 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 infrastructure costs for new development 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, impact fee calculations 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 and how those methods can be applied in Boulder.

Cost Recovery (past improvements)

The rationale for recoupment, often called 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 (concurrent improvements)

The incremental expansion method documents current level-of-service (LOS) standards for each type of public facility, using both quantitative and qualitative measures. This approach ensures that there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. 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 increment to keep pace with development.

Plan-Based (future improvements)

The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a capital improvements plan and development potential is identified by land use assumptions. There are two options for determining the cost per service 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).

Credits

Regardless of the methodology, a consideration of “credits” is integral to legally defensible impact fee studies. There are two types of “credits” with specific characteristics, both of which should be addressed in studies and ordinances.

- First, a revenue credit might be necessary if there is a double payment situation and other revenues are contributing to the capital costs of infrastructure to be funded by DIF revenue. This type of credit is integrated into the DIF calculation, thus reducing the gross amount. In contrast to some studies that only provide general costs, with credits at the back-end of the analysis, Boulder’s 2016 transportation DIF study uses growth shares to provide an up-front reduction in total costs. Also, the 2016 study provides DIF revenue projections to verify that new development will fully fund the growth share of future infrastructure costs (i.e., only DIF revenue will pay for growth costs).
- Second, a site-specific credit or developer reimbursement might be necessary for dedication of land or construction of system improvements to be funded by DIF revenue. This type of credit is addressed in the administration and implementation of the impact fee program.

CONCLUSIONS

Because local government must quantify reasonable impacts caused by, and directly related to, proposed development [see CRS 29-20-104.5 (1) and (2)], the 2016 transportation study yields lower charges on new development. Proposed dollar amounts shown below are expected to yield just over one million dollars over the next ten years, which will cover the growth cost of planned enhancements to streets. In comparison, the current Transportation DET rate schedule will yield approximately \$11.5 million over the next ten years. TischlerBise also finds the current Transportation DET rate schedule to be inconsistent with best practices to ensure impact fees are proportionate to the need for capital facilities. For residential development, TischlerBise recommends a fee schedule based on dwelling size (measured by square feet of finished living space). To be proportionate, transportation impact fees should also differentiate by type of nonresidential development as shown in Figure DIF2. For ease of administration and comparison, the transportation DIF schedule is consistent with Boulder’s 2016 DIF study for all other types of infrastructure.

PROPOSED 2016 TRANSPORTATION DEVELOPMENT IMPACT FEE

Figure DIF1 summarizes the methods and cost components used in Boulder’s 2016 Transportation DIF study. Both the DIF and DET studies share the same types of improvements. The key difference between the two is that the proposed DET will fund multimodal improvements, such as bus, bike, pedestrian facilities and the DIF will fund street improvements for vehicles and freight.

Figure DIF1: Proposed Transportation DIF Methods and Cost Components

<i>Type of Improvements</i>	<i>Cost Allocation</i>	<i>Service Area</i>	<i>Plan-Based Method (future)</i>
<i>Streets</i>	Vehicle Miles of Travel	Citywide	Arterial/Collector Enhancements and Intersection Improvements

Figure DIF2 shows the proposed 2016 Transportation DIF schedule. For residential development, proposed amounts are based on square feet of finished living space. Garages, porches and patios are excluded from the DIF assessment. For nonresidential development, DIF rates are stated per square foot of floor area, except for "Nursing Home / Assisted Living" (per bed) and "Lodging" (per room). The proposed DIF schedule for nonresidential development is designed to provide a reasonable DIF amount for general types of development. For unique developments, the City may allow or require an independent assessment.

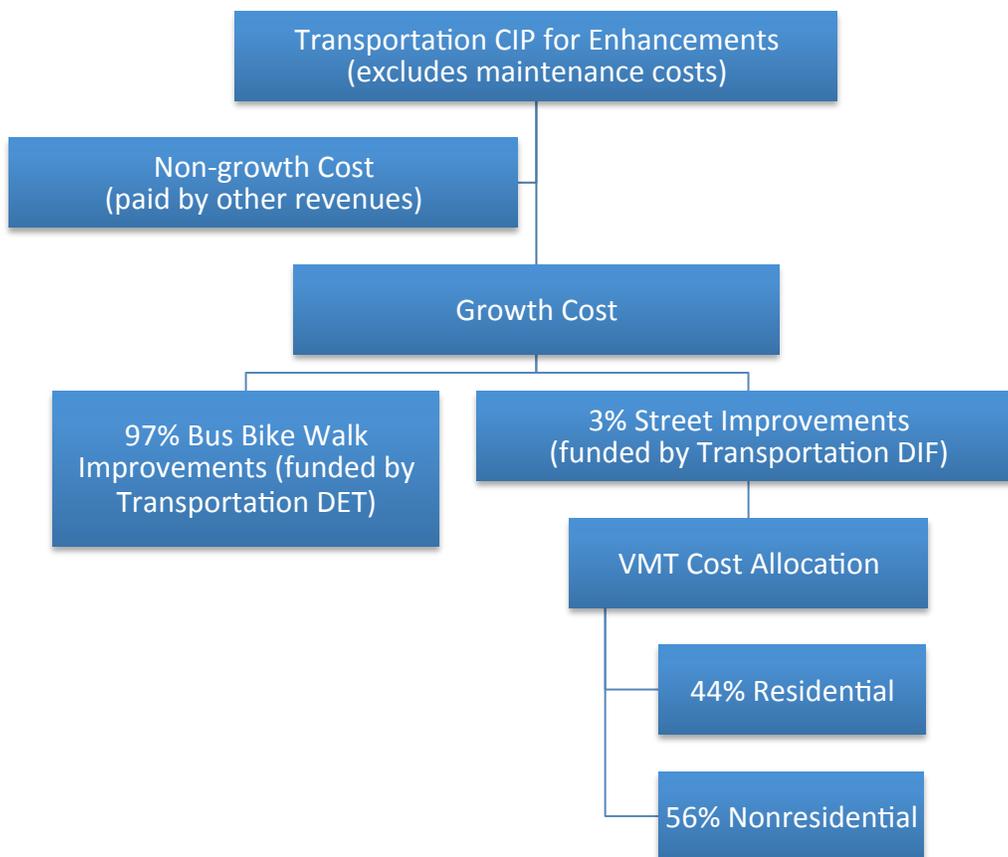
Figure DIF2: Proposed 2016 Transportation DIF Schedule

2016 Transportation DIF	<i>Development Unit</i>	<i>Proposed Transportation DIF</i>
Residential (by square feet of finished living space)		
600	Dwelling Unit	\$98
800	Dwelling Unit	\$125
1000	Dwelling Unit	\$146
1200	Dwelling Unit	\$164
1400	Dwelling Unit	\$178
1600	Dwelling Unit	\$191
1800	Dwelling Unit	\$202
2000	Dwelling Unit	\$212
2200	Dwelling Unit	\$221
2400	Dwelling Unit	\$229
2600	Dwelling Unit	\$237
2800	Dwelling Unit	\$244
3000	Dwelling Unit	\$250
3200	Dwelling Unit	\$256
3400	Dwelling Unit	\$262
3600+	Dwelling Unit	\$267
Nonresidential		
Retail / Restaurant	Square Foot	\$0.53
Office	Square Foot	\$0.22
Light Industrial	Square Foot	\$0.14
Warehousing	Square Foot	\$0.07
Institutional	Square Foot	\$0.18
Hospital	Square Foot	\$0.26
Nursing Home / Assisted Living	Bed	\$55
Lodging	Room	\$165

TRANSPORTATION DIF

The 2016 Transportation DIF study uses a plan-based methodology that includes improvements for vehicular travel on streets. Figure DIF3 provides an overview of the methodology. This study documents the general cost allocation between residential and nonresidential development, including detailed calculations used to derive specific DIF amounts by dwelling size and type of nonresidential development. From the universe of all projects in Boulder’s Capital Improvement Plan (CIP), which is based on the Transportation Master Plan (TMP), staff and consultants identified transportation improvements needed to accommodate new development over ten years. This study refers to these projects as “enhancements” to differentiate them from “maintenance” projects that are not eligible for impact fee funding. Also, each project was evaluated to quantify the reasonable impacts caused by, and directly related to, proposed development, as required by Colorado’s impact fee enabling legislation. These “growth costs” will be funded by DET and DIF revenue, with non-growth costs funded by other revenues. Staff determined that 97% of enhancement projects are for Bus Bike Walk facilities to be funded by the Transportation DET (primarily moving people), with the remaining 3% for street improvements (i.e. primarily moving vehicles and freight) to be funded by the Transportation DIF. The growth cost of street improvements was allocated according to estimated Vehicle Miles of Travel (VMT) for general types of development.

Figure DIF3: DIF Calculation Flow Chart



GROWTH SHARE OF FUTURE TRANSPORTATION ENHANCEMENTS

The 9.9% growth share is based on the projected average annual increase in person trips to and from Boulder from 2010 to 2035 (illustrated by Figure 3-22 in Boulder's State of the System Report). Because internal-external travel is most evident during morning and afternoon peak hours, it is a key factor in our perception of traffic congestion. Figure DIF4 provides a reasonable means of quantifying the minimum impact of growth on transportation facilities.

Figure DIF4: Person Trips To and From Boulder

Communities	2010	2035	Change	%Change
Broomfield	28,130	39,254	11,124	39.5%
Denver	13,643	14,416	773	5.7%
DIA	2,962	4,139	1,176	39.7%
ERIE	11,993	24,546	12,554	104.7%
Lafayette	18,613	21,564	2,950	15.9%
Longmont	40,976	47,774	6,798	16.6%
Lyons	1,892	1,968	77	4.0%
Louisville	25,799	26,214	415	1.6%
Superior	9,988	12,073	2,085	20.9%
TOTAL	153,995	191,947		

0.99% <= Average Annual Growth Rate

9.9% <= Percent Increase Over Ten Years

Data source

H:\Projects - Open\A-E\BOULDER Transit Master Plan 2012.777\05 Background\Travel Demand Model\Person_Trips

CAPITAL IMPROVEMENTS PLAN FOR TRANSPORTATION FACILITIES

Colorado's enabling legislation requires local government to quantify the reasonable impacts on capital facilities caused by, and directly related to proposed development. Boulder's current practice is to derive citywide impact fees and limit fee expenditures to projects that will benefit new development throughout the entire city. As shown in Figure DIF5, the ten-year growth cost of planned street enhancement projects is approximately \$1.12 million. Given the fact that Boulder is not expanding geographically (i.e. no significant additional transportation infrastructure on the periphery), the improvements listed below are primarily enhancements to existing facilities. Thus existing and new development will equally benefit from all projects except those with a 100% growth share. The four line items that are 100% attributable to new development are for development coordination, TIP scoping/prioritization and corridor studies. To account for grant funds, four line items in the table below have growth cost ranging from 16.1% to 49.5% of the local cost. These percentages were derived after applying the 9.9% growth allocation factor to the total project cost.

Figure DIF5: Growth Cost of Transportation Enhancements

CIP#	Description	Ten-Year Cost (less grants)	Growth-Related Enhancement Costs			Growth Share of Local Cost
			FY16-25 Bus Bike Walk	FY16-25 Streets		
310TR151NG	* Boulder Slough - 30th	Local share of multiuse path (to	\$96,000	\$47,500	\$0	49.5%
310TR480NC	East Arapahoe	Transportation Corridor Study	\$100,000	\$75,000	\$25,000	100.0%
310TR154NG	* 19th - Norwood to Up	Local share of reconstruction &	\$157,000	\$16,800	\$8,400	16.1%
310TD021OC	Citywide	Intersection improvements	\$200,000	\$4,000	\$15,800	9.9%
310TR479OC	30th & Colorado	Transportation Corridor Study	\$200,000	\$150,000	\$50,000	100.0%
310TR157NG	Citywide	Bldr Co/City Joint TIP Scoping &	\$289,000	\$289,000	\$0	100.0%
310D004OC	Citywide Funds 2810 & 3	Development coordination	\$450,000	\$337,500	\$112,500	100.0%
310TD019NC	28th St - Baseline to Iris	Complete street elements; turn	\$470,000	\$42,000	\$4,700	9.9%
310BJ002NC	Bluff & 30th St	Traffic signal	\$532,000	\$10,500	\$42,100	9.9%
310TR692OC	Citywide	Tributary greenways	\$585,000	\$57,900	\$0	9.9%
310TR112OC	Citywide	Pedestrian facilities enhance	\$750,000	\$74,300	\$0	9.9%
3102ABCK02	Boulder Creek	Path improvements	\$770,000	\$76,200	\$0	9.9%
310TR743NC	28th St - Valmont to Iris	Multimodal improvements	\$860,000	\$76,900	\$8,500	9.9%
3102ABCK01	Boulder Creek	Path lighting	\$979,680	\$97,000	\$0	9.9%
310TR692OC	Citywide	Bikeway facilities enhancement	\$1,350,000	\$133,700	\$0	9.9%
310TR152NG	* Broadway - Violet to H	Local share of reconstruction &	\$1,825,000	\$661,000	\$34,800	38.1%
3102ABCK03	Boulder Creek - Arapaho	Underpass	\$2,365,000	\$234,100	\$0	9.9%
310TR156NC	Boulder Creek & Aprapa	Reconstruction and multimoda	\$2,500,000	\$248,300	\$0	9.9%
310TR153NG	* 30th St & Colorado	Local share of bike/ped underp	\$3,150,000	\$588,500	\$149,600	23.4%
310TR773OC	Citywide	Pedestrian facilities repair/repl	\$3,774,000	\$375,500	\$0	9.9%
310TR003OC	Citywide	Major capital reconstruction an	\$4,800,000	\$436,900	\$39,700	9.9%
310TR052OG	Citywide Funds 2800 & 2	TIP local match & TMP implem	\$18,363,000	\$1,642,800	\$182,500	9.9%
Years 7-10	Citywide	Additional CIP Projects	\$29,710,500	\$3,783,600	\$449,100	14.2%
Action Plan	Railroad Quite Zone Improvements		\$5,000,000	\$712,319	\$0	14.2%
Action Plan	HOP Conversion to Clean Vehicles		\$12,000,000	\$1,709,567	\$0	14.2%
Action Plan	Community Transit Network Routes Converted to BRT		\$12,833,000	\$1,828,239	\$0	14.2%
Action Plan	East Circulator / Williams Village Improvements		\$16,301,000	\$2,322,304	\$0	14.2%
Action Plan	New and Modified Community Transit Network Routes		\$26,165,000	\$3,727,568	\$0	14.2%
Action Plan	Transit Capital Plan		\$38,900,000	\$5,541,845	\$0	14.2%
Action Plan	Other Bike/Ped Enhancements		\$50,757,000	\$7,231,040	\$0	14.2%
Ten-Year Total =>			\$236,232,180	\$32,531,881	\$1,122,700	14.2%
				97%	3%	

* Projects with grant funding; enhancement cost growth share is approximately 9.9% of total cost

\$33,654,581 <= Ten Year Growth Cost

\$202,577,599 <= Total to be funded by other revenues

VEHICLE MILES OF TRAVEL

Figure DIF5 above indicates street improvements to provide additional vehicular capacity account for 3% of the growth cost, or \$1.12 million over the next ten years. The streets component of the Transportation DIF is derived from custom trip generation rates (see Appendix A), trip rate adjustment factors, and the capital cost per Vehicle Mile of Travel (VMT). The latter is a function of average trip length, trip-length weighting factor by type of development, and the growth cost of transportation improvements. Each component is described below.

VMT is a measurement unit equal to one vehicle traveling one mile. In the aggregate, VMT is the product of vehicle trips multiplied by the average trip length¹. The average trip length of 3.8 miles within Boulder is from the 2012 Modal Shift Report, as derived from a survey of residents (i.e. household travel diaries).

Vehicular Trip Generation Rates

Boulder's 2016 Transportation DIF study is based on Average Weekday Vehicle Trip Ends (AWVTE). For residential development, trip rates are customized using demographic data for Boulder, as documented in Appendix A. For nonresidential development, trip generation rates are from the reference book Trip Generation published by the Institute of Transportation Engineers (ITE 9th Edition 2012). A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate transportation development fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50%. As discussed further below, the DIF methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Adjustments for Commuting Patterns and Pass-By Trips

Residential development has a slightly larger trip adjustment factor of 52% to account for commuters leaving Boulder for work. According to the Boulder Valley 2012 Modal Shift report (see Figure 46), work or work commute trips by single and multiple occupancy vehicles accounted for 15.9% of production trips (i.e., all out-bound trips, which are 50% of all trip ends). Also, Table 112 (Question 24) in the 2014 Boulder Community Survey indicates that 19% of resident workers traveled outside Boulder for work. In combination, these factors ($0.159 \times 0.50 \times 0.19 = 0.02$) support the additional 2% allocation of trips to residential development.

For commercial development, the trip adjustment factor is less than 50% because retail development and some services, like schools and daycare facilities, attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE indicates that 34% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66% of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66% multiplied by 50%, or approximately 33% of the trip ends.

Trip Length Weighting Factor by Type of Land Use

The transportation DIF methodology includes a percentage adjustment, or weighting factor, to account for trip length variation by type of land use. As shown in Figure DIF6, trips associated with residential development are approximately 113% of the average trip length. The residential trip length adjustment factor includes data on work commute, driving passengers, social/recreational purposes and other

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

work/business travel. Conversely, shopping and eating trips associated with commercial development are roughly 68% of the average trip length while other nonresidential development typically accounts for trips that are 72% of the average for all trips.

Figure DIF6: Average Trip Length by Trip Purpose in Boulder

Type of Development	Trip Purpose	Miles Percent	Miles	Trips Percent	Trips	Miles Per Trip	Weighting Factor
1-Residential	Work Commute	14.9%	2,719	9.2%	444	6.1	1.13
1-Residential	Drive a Passenger	6.6%	1,205	4.8%	232	5.2	
1-Residential	Change Mode & Other	2.9%	529	2.5%	121	4.4	
1-Residential	Social/Recreational	15.0%	2,738	13.4%	647	4.2	
1-Residential	Go Home	35.4%	6,461	34.7%	1,676	3.9	
1-Residential	Other Work/Business	3.7%	675	4.6%	222	3.0	
1-Residential Total			14,327		3,342	4.3	
2-Retail/Restaurant	Shopping	8.4%	1,533	11.1%	536	2.9	0.68
2-Retail/Restaurant	Eat a Meal	4.0%	730	7.1%	343	2.1	
2-Retail/Restaurant Total			2,263		879	2.6	
3-Other Nonresidential	Personal Business	5.7%	1,040	6.3%	304	3.4	0.72
3-Other Nonresidential	School	3.4%	621	6.3%	304	2.0	
3-Other Nonresidential Total			1,661		609	2.7	
TOTAL			100.0%	18,251	100.0%	4,830	3.8

Data Source: Figures 44 and 45, Modal Shift in Boulder Valley, 2012.

DEVELOPMENT PROTOTYPES AND PROJECTED VMT

The relationship between the amount of development within Boulder and Vehicle Miles of Travel (VMT) is documented in Figure DIF7. At the top are data on existing and projected development units. The lower portion of the table indicates the cost allocation for street improvements. VMT per development unit is equal to AWWTE x Trip Adjustment Factor x Mode Share for Single and Multiple Occupancy Vehicles (SOV & MOV) x Trip Length Weighting Factor x Average Trip Length. Based on projected development in Boulder over the next ten years, residential development should pay for approximately 44% of the growth cost of street improvements, with the remaining 56% funded by nonresidential development.

Figure DIF7: Projected VMT Increase to Development within Boulder

Development Type (1)	2015 Development Units (1)	2025 Development Units (1)	Additional Development Units
Single Unit Dwellings	24,242	24,806	564
Multiple Unit Dwellings	21,498	23,752	2,254
Industrial Sq Ft	13,576,996	14,547,603	970,607
Retail Sq Ft	8,565,611	9,174,939	609,328
Office & Other Services Sq Ft	14,848,416	15,904,789	1,056,373
Housing Unit Total	45,740	48,558	2,818
Nonres KSF Total	36,991,023	39,627,331	2,636,308

- (1) Land Use Assumptions, TischlerBise 2016.
- (2) Residential trip rates adjusted to Boulder demographics; nonresidential trip rates are national averages (ITE 2012).
- (3) Residential includes commuting pattern adjustment; Retail includes pass-by adjustment.
- (4) Residential mode share from Figure 1, 2012 Modal Shift; nonresidential mode share from Table 2 (primary mode) 2014 Employee Survey.
- (5) Derived from Figures 44+45, Modal Shift, 2012..
- (6) Figure 19, 2012 Modal Shift

Streets Cost Allocation Based on Vehicle Miles of Travel

Development Type	Avg Wkdy Veh Trip Ends per Dev Unit (2)	Trip Adjustment Factors (3)	SOV+MOV Mode Share (4)	Trip Length Weighting Factor (5)	Vehicle Miles of Travel per Dev Unit	Ten Year VMT Increase	Proportionate Share by Type of Dev
Single Unit Dwellings	8.17	52%	55.5%	113%	10.12	5,710	10.27%
Multiple Unit Dwellings	6.63	52%	55.5%	113%	8.22	18,519	33.31%
Industrial (per KSF)	3.56	50%	73.2%	72%	3.56	3,460	6.22%
Retail (per KSF)	42.70	33%	73.2%	68%	26.65	16,240	29.21%
Office & Other Services (per KSF)	11.03	50%	73.2%	72%	11.05	11,668	20.99%
Average Trip Length in miles (6) =>					3.80	55,598	100.00%
Ten Year Growth Cost of Street Improvements =>						\$1,122,700	
Cost per Additional VMT =>						\$20.19	

COST ALLOCATION FOR STREET IMPROVEMENTS

Input variables for Boulder’s 2016 Transportation DIF schedule are shown in Figure DIF8. Inbound VMT by type of development, multiplied by the capacity cost per VMT, yields the DIF amount. For example, Lodging generates 8.18 VMT per room, multiplied by the capital cost of \$20.19 per VMT, yields a DIF charge of \$165 per room (truncated) for street improvements.

The text below from Trip Generation (ITE 2012) supports the consultant’s recommendation to use ITE 820 Shopping Center as a reasonable proxy for all commercial development (i.e. retail and restaurants). The shopping center trip generation rates are based on 302 studies with an r-squared value of 0.79. The latter is a goodness-of-fit indicator with values ranging from 0 to 1. Higher values indicate the independent variable (floor area) provides a better prediction of the dependent variable (average



weekday vehicle trip ends). If the r-squared value is less than 0.50, ITE does not publish the value because factors other than floor area provide a better prediction of trip rates.

“A shopping center is an integrated group of commercial establishments. Shopping centers, including neighborhood, community, regional, and super regional centers, were surveyed for this land use. Some of these centers contained non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, and health clubs. Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include out parcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied include peripheral buildings, it can be assumed that some of the data show their effect.”

Figure DIF8: Cost of Street Improvements Allocated by VMT

Residential DIF for Streets

Square Feet of Living Space	Development Unit	AWVTE per Dev Unit (2)	Trip Adjustment Factors (3)	SOV+MOV Mode Share (4)	Trip Length Weighting Factor (5)	VMT per Dev Unit	Proposed Streets Component
600	Dwelling Unit	3.94	52%	55.5%	113%	4.88	\$98
800	Dwelling Unit	5.03	52%	55.5%	113%	6.23	\$125
1000	Dwelling Unit	5.87	52%	55.5%	113%	7.27	\$146
1200	Dwelling Unit	6.56	52%	55.5%	113%	8.13	\$164
1400	Dwelling Unit	7.14	52%	55.5%	113%	8.85	\$178
1600	Dwelling Unit	7.65	52%	55.5%	113%	9.48	\$191
1800	Dwelling Unit	8.09	52%	55.5%	113%	10.03	\$202
2000	Dwelling Unit	8.49	52%	55.5%	113%	10.52	\$212
2200	Dwelling Unit	8.85	52%	55.5%	113%	10.97	\$221
2400	Dwelling Unit	9.18	52%	55.5%	113%	11.38	\$229
2600	Dwelling Unit	9.48	52%	55.5%	113%	11.75	\$237
2800	Dwelling Unit	9.76	52%	55.5%	113%	12.10	\$244
3000	Dwelling Unit	10.02	52%	55.5%	113%	12.42	\$250
3200	Dwelling Unit	10.26	52%	55.5%	113%	12.71	\$256
3400	Dwelling Unit	10.49	52%	55.5%	113%	13.00	\$262
3600+	Dwelling Unit	10.71	52%	55.5%	113%	13.27	\$267

Nonresidential DIF for Streets

Type	Development Unit	AWVTE per Development Unit (2)	Trip Adjustment Factors (3)	SOV+MOV Mode Share (4)	Trip Length Weighting Factor (5)	VMT per Dev Unit	Proposed Streets Component
Retail / Restaurant	Sq Ft	0.04270	33%	73.2%	68%	0.02665	\$0.53
Office	Sq Ft	0.01103	50%	73.2%	72%	0.01105	\$0.22
Light Industrial	Sq Ft	0.00697	50%	73.2%	72%	0.00698	\$0.14
Warehousing	Sq Ft	0.00356	50%	73.2%	72%	0.00356	\$0.07
Institutional	Sq Ft	0.01403	33%	73.2%	72%	0.00927	\$0.18
Hospital	Sq Ft	0.01322	50%	73.2%	72%	0.01324	\$0.26
Nursing Home / Assisted Living	Bed	2.74	50%	73.2%	72%	2.74	\$55
Lodging	Room	8.17	50%	73.2%	72%	8.18	\$165

REVENUE CREDIT EVALUATION

A credit for other revenues is only necessary if there is potential double payment for system improvements. In Boulder, sales and gas tax revenue will be used for maintenance of existing facilities, correcting existing deficiencies, and for capital projects that are not DIF system improvements. As shown below in the Figure DIF9, cumulative DIF revenue over the next ten years approximates the growth cost of system improvements. There is no potential double payment from other revenues if Boulder’s elected officials make a legislative policy decision to use Transportation DIF revenue to fund the growth cost of system improvements.

FUNDING STRATEGY FOR TRANSPORTATION IMPROVEMENTS

The revenue projection shown in Figure DIF9 assumes implementation of the proposed 2016 Transportation DIF schedule and the development projections described in the land use assumptions. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in DIF revenue and the timing of capital improvements. Based on the proposed 2016 methodology, residential development will generate approximately 44% of the growth cost for transportation system improvement, with nonresidential development generating 56%.

Figure DIF9: Projected Transportation DIF Revenue

		<i>Residential (assumes 1600 Sq Ft)</i>	<i>Light Industrial</i>	<i>Retail & Restaurants</i>	<i>Office & Other Services</i>
		\$191	\$0.14	\$0.54	\$0.22
<i>Year</i>		<i>per housing unit</i>	<i>per 1000 Sq Ft</i>	<i>per 1000 Sq Ft</i>	<i>per 1000 Sq Ft</i>
		<i>Housing Units</i>	<i>Square Feet</i>	<i>Square Feet</i>	<i>Square Feet</i>
Base	2015	45,740	13,576,996	8,565,611	14,848,416
Year 1	2016	46,012	13,670,663	8,624,414	14,950,360
Year 2	2017	46,288	13,765,405	8,683,890	15,053,473
Year 3	2018	46,566	13,860,809	8,743,783	15,157,308
Year 4	2019	46,846	13,956,881	8,804,095	15,261,869
Year 5	2020	47,127	14,053,626	8,864,830	15,367,162
Year 6	2021	47,409	14,151,048	8,925,989	15,473,193
Year 7	2022	47,694	14,249,152	8,987,577	15,579,965
Year 8	2023	47,980	14,347,942	9,049,596	15,687,486
Year 9	2024	48,268	14,447,424	9,112,049	15,795,758
Year 10	2025	48,557	14,547,603	9,174,939	15,904,789
<i>Ten Year Increase</i>		2,817	970,607	609,328	1,056,373
<i>Projected Revenue =></i>		\$538,000	\$136,000	\$329,000	\$232,000
Total Projected Transportation DIF Revenue (rounded) =>					\$1,235,000
Res Share =>		44%		Nonres Share => 56%	

APPENDIX A: LAND USE ASSUMPTIONS RELATED TO TRANSPORTATION

Most of the demographic data used in the transportation studies are documented in Appendix A of the 2016 Capital Facility Development Impact Fee Study for the City of Boulder (TischlerBise 8/31/16). This Appendix contains additional information specific to the transportation analysis, such as customized vehicle trip generation rates for the City of Boulder.

CUSTOM TRIP GENERATION RATES BY DWELLING SIZE

As an alternative to simply using national average trip generation rates for residential development, as published by the Institute of Transportation Engineers (ITE), TischlerBise derived custom trip rates using local demographic data. Key inputs needed for the analysis (i.e. average number of persons and vehicles available per housing units) are available from American Community Survey (ACS) data for Colorado Public Use Microdata Area 803, which is essentially the City of Boulder.

City of Boulder Control Totals

The 2010 census did not obtain detailed information using a “long-form” questionnaire. Instead, the U.S. Census Bureau has switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which is limited by sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). Part of the rationale for deriving development related transportation taxes/fees by bedroom range, as discussed further below, is to address this ACS data limitation. Because townhouses generally have fewer bedrooms and less living space than detached units, fees by dwelling size ensure proportionality and facilitate construction of affordable units.

According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Development fees often use per capita standards and persons per housing unit, or persons per household, to derive proportionate-share fee amounts. TischlerBise recommends that fees for residential development in Boulder be imposed according to the number of year-round residents per housing unit. Figure A1 indicates the average number of year-round residents per housing unit in Boulder. In 2013, the control total for the City of Boulder is 2.14 persons per dwelling (i.e. weighted average for all types of housing).

Figure A1: Year-Round Persons per Unit by Type of Housing

2013 Summary by Two House Types

Units in Structure	Persons	House-holds	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate
Single Unit*	57,742	22,479	2.57	23,284	2.48	53%	3%
All Other	36,747	19,828	1.85	20,767	1.77	47%	5%
Subtotal	94,489	42,307	2.23	44,051	2.14		4%
Group Quarters	8,674						
TOTAL	103,163						

* Single unit includes detached and attached (e.g. townhouse).

Source: Tables B25024, B25032, B25033, and B26001.

2013 American Community Survey 1-Year Estimates, U.S. Census Bureau.

Trip generation rates are also dependent upon the average number of vehicles available per dwelling. Figure A2 indicates vehicles available per housing unit in the City of Boulder. For the purpose of customizing vehicle trip generation rates, the control total for Boulder is an average of 1.55 vehicles available per housing unit.

Figure A2: Vehicles Available per Housing Unit

Tenure	Vehicles Available (1)	Households (2)		
		Single Unit Detached or Attached	All Other	Total
Owner-occupied	35,644	16,469	3,657	20,126
Renter-occupied	32,522	6,010	16,171	22,181
Total	68,166	22,479	19,828	42,307

Units per Structure	Vehicles Available	Housing Units (3)	Vehicles per Housing Unit
Single Detached or Attached	37,979	23,284	1.63
All Other	30,187	20,767	1.45
Total	68,166	44,051	1.55

- (1) Vehicles available by tenure from Table B25046, American Community Survey, 2013.
- (2) Households by tenure and units in structure from Table B25032, ACS, 2013.
- (3) Housing units from Table B25024, American Community Survey, 2013.

Customized Trip Rates by Dwelling Size and Type

Custom tabulations of demographic data by bedroom range can be created from individual survey responses provided by the U.S. Census Bureau, in files known as Public Use Micro-data Samples (PUMS). Because PUMS files are available for areas of roughly 100,000 persons, the City of Boulder approximates Colorado Public Use Micro-data Area (PUMA) 803. At the top of Figure A3, in the cells with yellow shading, are the 2013 survey results for Boulder (latest available). Unadjusted survey results derived from PUMS data (i.e. persons per dwelling and vehicles available per dwelling), were adjusted to match control totals for the City of Boulder, as documented above in Figures A1 and A2.

The middle section of Figure A3 provides nation-wide data from the Institute of Transportation Engineers (ITE). AWWTE is the acronym for Average Weekday Vehicle Trip Ends, which measures vehicles coming and going from a development. Dividing trip ends per household by trip ends per person yields an average of 2.01 persons per occupied apartment and 3.73 persons per occupied single dwelling, based on ITE’s national survey. Applying Boulder’s current housing mix of 47% apartments and 53% single-unit dwellings yields a weighted average of 2.92 persons per household. In comparison to the national data, Boulder only has an average of 2.14 persons per housing unit.

Dividing trip ends per household by trip ends per vehicle available yields an average of 1.30 vehicles available per occupied apartment and 1.58 vehicles available per occupied single dwelling, based on ITE’s national survey. Applying Boulder’s current housing mix of 47% apartments and 53% single-unit dwellings yields a weighted average of 1.45 vehicles available per household. In comparison to the national data, Boulder has more vehicles available, with an average of 1.55 per housing unit.



Rather than rely on one methodology, the recommended trip generation rates shown in the bottom section of Figure A3 (see Boulder AWWTE per Housing Unit in bold numbers), are an average of trip rates based on persons and vehicles available, for all types of housing units by bedroom range. In the City of Boulder, each housing unit is expected to yield an average of 7.45 Average Weekday Vehicle Trip Ends (AWVTE), compared to the national average of 8.17 trip ends per household.

Figure A3: Persons and AWWTE by Bedroom Range and House Type

City of Boulder 2013 Data								
Bedroom Range	Persons (1)	Vehicles Available (1)	Housing Units (1)	Boulder Hsg Mix	Unadjusted Persons/HU	Adjusted Persons/HU (2)	Unadjusted VehAvl/HU	Adjusted VehAvl/HU (2)
0-1	114	89	89	19%	1.28	1.31	1.00	0.95
2	220	162	121	25%	1.82	1.86	1.34	1.27
3	296	236	134	28%	2.21	2.26	1.76	1.66
4+	372	300	135	28%	2.76	2.83	2.22	2.10
Total	1,002	787	479		2.09	2.14	1.64	1.55

National Averages According to ITE						
ITE Code	AWVTE per Person	AWVTE per Vehicle Available	AWVTE per Household	Boulder Hsg Mix	Persons per Household	Veh Avl per Household
220 Apt	3.31	5.10	6.65	47%	2.01	1.30
210 SFD	2.55	6.02	9.52	53%	3.73	1.58
Wgtd Avg	2.91	5.59	8.17		2.92	1.45

Recommended AWWTE per Dwelling Unit by Bedroom Range			
Bedroom Range	AWVTE per Housing Unit Based on Persons (3)	AWVTE per Housing Unit Based on Vehicles Available (4)	Boulder AWWTE per Housing Unit (5)
0-1	3.81	5.31	4.56
2	5.41	7.10	6.26
3	6.58	9.28	7.93
4+	8.24	11.74	9.99
Total	6.23	8.66	7.45

(1) American Community Survey, Public Use Microdata Sample for CO PUMA 803 (2013 One-Year unweighted data).
 (2) Adjusted multipliers are scaled to make the average PUMS values match control totals based on American Community Survey 2013 1-year data for the City of Boulder.
 (3) Adjusted persons per housing unit multiplied by national weighted average trip rate per person.
 (4) Adjusted vehicles available per housing unit multiplied by national weighted average trip rate per vehicle available.
 (5) Average of trip rates based on persons and vehicles available per housing unit.

AWVTE per Dwelling by House Type			
ITE Code	AWVTE per Housing Unit Based on Persons (3)	AWVTE per Housing Unit Based on Vehicles Available (4)	Boulder AWWTE per Housing Unit (5)
All Other	5.15	8.11	6.63
210 SFD	7.22	9.11	8.17
All Types	6.23	8.66	7.45

Boulder Persons/HU
1.77
2.48
2.14

Boulder VehAvl/HU
1.45
1.63
1.55

Trip Generation by Dwelling Size

To derive AWWTE by dwelling size, TischlerBise matched trip generation rates and average floor area, by bedroom range, as shown in Figure A4. The logarithmic trend line formula, derived from the four actual averages in Boulder, is used to derive estimated trip ends by dwelling size. The table indicates trip rates for dwellings that range from 600 to 3600+ square feet, with 200 square foot increments to be consistent with Boulder’s current impact fee schedule. TischlerBise does not recommend average fees for all house sizes because it makes small units less affordable and essentially subsidizes larger units.

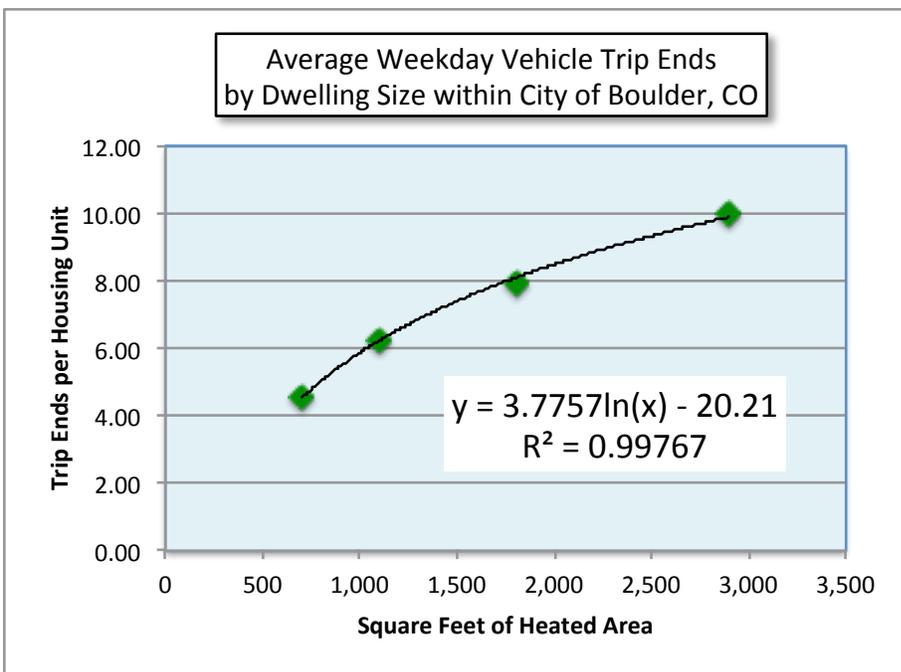


Apartment units will generally be in the lower end of the size range (generally one and two bedroom units). Single-unit dwellings will have floor areas in the upper end of the size range. Smaller units will likely have three bedrooms. All units with 3601 or more square feet of living space are assumed to generate a maximum 10.71 AWWTE per dwelling.

Figure A4: Vehicle Trips by Dwelling Size

Average dwelling size by bedroom range is from Property Assessor parcel database. Average weekday vehicle trip ends are calibrated to 2013 1-Year ACS PUMS data for CO PUMA 803 (City of Boulder).

Actual Averages per Hsg Unit			Fitted-Curve Values	
Bedrooms	Square Feet	Trip Ends	Square Feet	Trip Ends
0-1	700	4.56	600	3.94
2	1,100	6.26	800	5.03
3	1,800	7.93	1000	5.87
4+	2,900	9.99	1200	6.56
			1400	7.14
			1600	7.65
			1800	8.09
			2000	8.49
			2200	8.85
			2400	9.18
			2600	9.48
			2800	9.76
			3000	10.02
			3200	10.26
			3400	10.49
			3600+	10.71





2016 Transportation Development Excise Tax Study

Prepared for:
City of Boulder, Colorado

September 20, 2016

TischlerBise
FISCAL | ECONOMIC | PLANNING

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EXECUTIVE SUMMARY

As part of the 2016 transportation work scope, TischlerBise will prepare three products for the City of Boulder. This work product is a Development Excise Tax (DET) study for a broad set of growth-related transportation improvements. A second work product focuses on the capital cost of transportation improvements needed to accommodate new development assuming more rigorous Development Impact Fee (DIF) legal requirements. The third work product will focus on operational costs and on-going maintenance of Boulder's multimodal transportation system.

Boulder's DET is a one-time revenue imposed on new construction. An excise tax is imposed on the performance of an act, the engaging in an occupation, or the enjoyment of a privilege. In some states, home-rule cities may impose excise taxes using general taxation powers. Other states have limited the use of excise taxes to jurisdictions that have special enabling legislation. Boulder has collected an excise tax for transportation since the 1980s. In 1998, voters approved a consolidated DET that included transportation. By policy, a portion of the consolidated DET authorized by voters is also used to acquire land for parks, but the combined total for parkland and transportation is less than the total DET authorized for residential development.

CURRENT TRANSPORTATION DET

As shown in Figure DET1, the current Transportation DET is \$2.48 per square foot of nonresidential floor area and approximately \$2,227 per detached dwelling and \$1,650 per attached dwelling. Applying these rates to the projected increase in development within Boulder over the next ten years would yield approximately \$11.5 million in Transportation DET revenue, with residential units contributing 43% of the six-year total and 57% from nonresidential development.

Figure DET1: Transportation DET Rates Currently Collected

Tax Name	Nonresidential	Residential	
	Per Square Foot	Per Detached Dwelling Unit	Per Attached Dwelling Unit or Mobile Home
Development Excise Tax			
Park Land	N/A	\$1,144.84	\$795.98
Transportation	\$2.48	\$2,226.93	\$1,650.29
Total	\$2.48	\$3,371.77	\$2,446.27
Housing Excise Tax	\$0.51	\$0.23 per square foot	\$0.23 per square foot

The right column in Figure DET2 indicates the maximum consolidated DET amounts approved by voters in 1998. Nonresidential development is currently paying the maximum rate, but residential development could pay up to \$5,630 per detached dwelling and \$3,624 per attached dwelling. One option to consider during the 2016 DET update is to increase the transportation DET rates up to the maximum for residential units, as approved by voters. This change would increase the DET by \$3,403

per detached dwelling and \$1,974 per attached dwelling. Based on projected development over the next ten years, collecting the maximum DET from residential development would provide an additional \$6.4 million for transportation improvements over the next ten years (i.e. a total of \$17.9 million). Maximum voter-approved DET rates would obtain approximately 63% of future Transportation DET revenue from residential development and 37% from nonresidential development.

Figure DET2: Maximum Voter-Approved DET Rates

TYPE OF DEVELOPMENT	CURRENT	PROPOSED 1999	PROPOSED MAXIMUM (LIMITED BY CPD)
NEW AND ANNEXING DETACHED DWELLING UNIT	3,667.05	4,331.06	5,630.38
NEW AND ANNEXING ATTACHED DWELLING UNIT	2,369.03	2,787.77	3,624.10
NEW, ANNEXING AND EXPANDED NON- RESIDENTIAL DEVELOPMENT	1.45 PER SQUARE FOOT	1.91 PER SQUARE FOOT	2.48 PER SQUARE FOOT

PROPOSED 2016 TRANSPORTATION DEVELOPMENT EXCISE TAX

Figure DET3 summarizes the methods and cost components used in Boulder’s 2016 Transportation DET study. In contrast to the 1996 DET study, TischlerBise recommends switching from an emphasis on moving vehicles to moving people, primarily through bus, bike, and pedestrian facilities. As summarized in Figure DET3, capital costs are allocated to residential and nonresidential development based on a “functional population” analysis, as described further below.

Figure DET3: Proposed Transportation DET Methods and Cost Components

<i>Type of Improvements</i>	<i>Cost Allocation</i>	<i>Service Area</i>	<i>Plan-Based Method (future)</i>
<i>Bus Bike Walk</i>	Functional Population and Jobs	Citywide	Sidewalks, Multi-Use Paths, Bike Lanes and Transit

Figure DET4 shows the proposed 2016 Transportation DET schedule, along with both maximum and current Transportation DET rates. If City Council does not decide to seek voter approval for increasing the DET rates, TischlerBise recommends implementation of the maximum DET rate schedule already approved by voters.

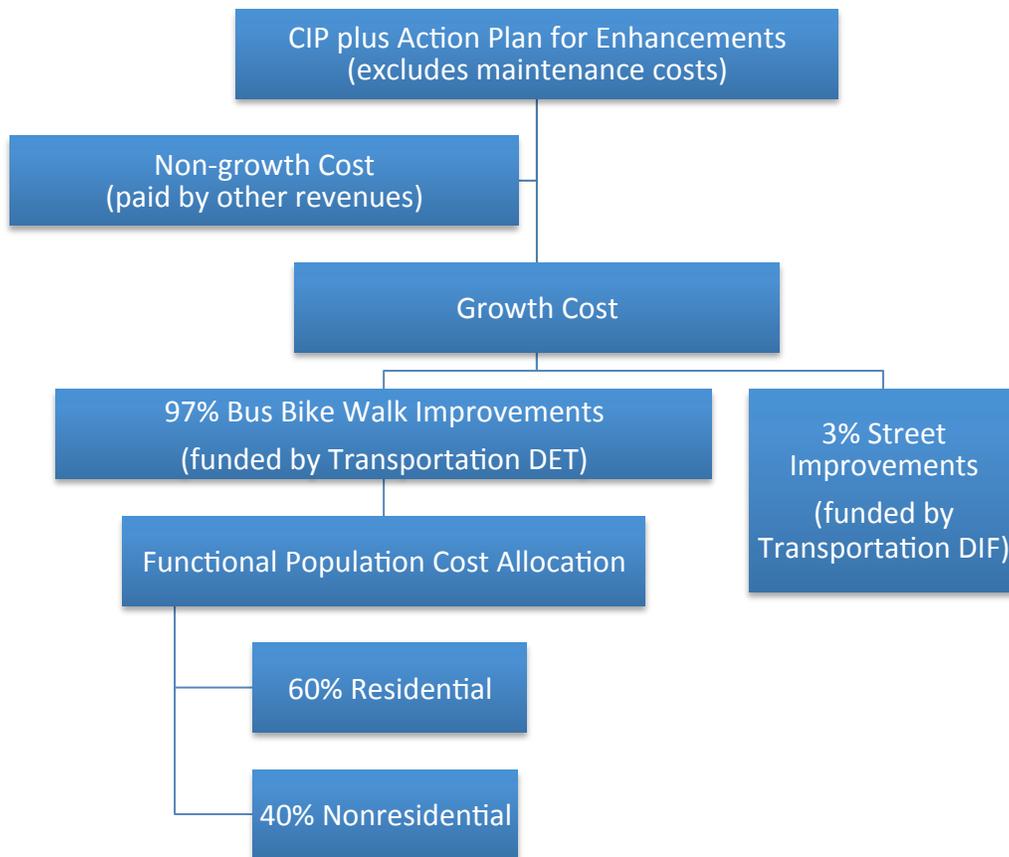
Figure DET4: Proposed 2016 Transportation DET Schedule

2016 Transportation DET	<i>Development Unit</i>	<i>Proposed Transportation DET</i>	<i>Maximum DET</i>	<i>Current Transportation DET</i>
Residential (by dwelling type)				
Attached	Dwelling Unit	\$4,454	\$3,624	\$1,650
Detached	Dwelling Unit	\$6,437	\$5,630	\$2,227
Nonresidential				
All Nonresidential	Square Foot	\$4.47	\$2.48	\$2.48

MULTIMODAL TRANSPORTATION DET

The 2016 Transportation DET study uses a plan-based methodology that includes improvements for all modes of travel. Figure DET5 provides an overview of the methodology. This study documents the general cost allocation between residential and nonresidential development, including detailed calculations used to derive specific DET amounts by dwelling type. From the universe of all projects in Boulder’s Capital Improvement Plan (CIP) and the Action Investment Program of the 2014 Transportation Master Plan (TMP), staff and consultants identified transportation improvements needed to accommodate new development over ten years. This study refers to these projects as “enhancements” to differentiate them from “maintenance” projects that are not eligible for DET funding. Also, each project was evaluated to quantify the “growth costs” to be funded by DET revenue, with non-growth costs funded by other revenues. Staff determined that 97% of enhancement projects are for Bus Bike Walk facilities (primarily moving people), with the remaining 3% for street improvements (i.e. primarily moving vehicles and freight). The growth cost of Bus Bike Walk improvements was allocated to residential and non-residential development based on functional population (described further below). The growth cost of street improvements was allocated according to estimated Vehicle Miles of Travel (VMT) for general types of development, as described in the 2016 Transportation DIF study.

Figure DET5: DET Calculation Flow Chart



GROWTH SHARE OF FUTURE TRANSPORTATION ENHANCEMENTS

The 9.9% default growth share is based on the projected average annual increase in person trips to and from Boulder from 2010 to 2035 (illustrated by Figure 3-22 in Boulder's State of the System Report). Because internal-external travel is most evident during morning and afternoon peak hours, it is a key factor in our perception of traffic congestion. Figure DET6 provides a reasonable means of quantifying the minimum impact of growth on transportation facilities.

Figure DET6: Person Trips To and From Boulder

Communities	2010	2035	Change	%Change
Broomfield	28,130	39,254	11,124	39.5%
Denver	13,643	14,416	773	5.7%
DIA	2,962	4,139	1,176	39.7%
ERIE	11,993	24,546	12,554	104.7%
Lafayette	18,613	21,564	2,950	15.9%
Longmont	40,976	47,774	6,798	16.6%
Lyons	1,892	1,968	77	4.0%
Louisville	25,799	26,214	415	1.6%
Superior	9,988	12,073	2,085	20.9%
TOTAL	153,995	191,947		

0.99% <= Average Annual Growth Rate

9.9% <= Percent Increase Over Ten Years

Data source

H:\Projects - Open\A-E\BOULDER Transit Master Plan 2012.777\05 Background\Travel Demand Model\Person_Trips

CIP PLUS ACTION INVESTMENT PROGRAM FOR TRANSPORTATION FACILITIES

As shown in Figure DET7, the ten-year growth-related cost of planned enhancement projects is approximately \$236 million. The upper two-thirds of the table lists CIP projects. The bottom third of the table lists additional Action Investment Program capital improvements, with updated capital costs as provided by Boulder's transportation staff.

The ten-year, growth share of local costs is 14.2% of the total cost, less grant funding. The proposed transportation DET rate schedule would fund \$32.53 million over ten years. Based on the CIP analysis by staff, approximately 97% of the growth cost is for Bus Bike Walk improvements and 3% will be spent on vehicular capacity (i.e. \$1.12 million over ten years).

Figure DET7: Growth-Related Cost of Transportation Enhancements

CIP#	Description	Ten-Year Cost (less grants)	Growth-Related Enhancement Costs		Growth Share of Local Cost	
			FY16-25 Bus Bike Walk	FY16-25 Streets		
310TR151NG	* Boulder Slough - 30th	Local share of multiuse pat	\$96,000	\$47,500	\$0	49.5%
310TR480NC	East Arapahoe	Transportation Corridor St	\$100,000	\$75,000	\$25,000	100.0%
310TR154NG	* 19th - Norwood to Up	Local share of reconstructi	\$157,000	\$16,800	\$8,400	16.1%
310TD021OC	Citywide	Intersection improvements	\$200,000	\$4,000	\$15,800	9.9%
310TR479OC	30th & Colorado	Transportation Corridor St	\$200,000	\$150,000	\$50,000	100.0%
310TR157NG	Citywide	Bldr Co/City Joint TIP Scop	\$289,000	\$289,000	\$0	100.0%
310TDOO4OC	Citywide Funds 2810 & 3	Development coordination	\$450,000	\$337,500	\$112,500	100.0%
310TD019NC	28th St - Baseline to Iris	Complete street elements;	\$470,000	\$42,000	\$4,700	9.9%
310BJ002NC	Bluff & 30th St	Traffic signal	\$532,000	\$10,500	\$42,100	9.9%
310TR692OC	Citywide	Tributary greenways	\$585,000	\$57,900	\$0	9.9%
310TR112OC	Citywide	Pedestrian facilities enhan	\$750,000	\$74,300	\$0	9.9%
3102ABCK02	Boulder Creek	Path improvements	\$770,000	\$76,200	\$0	9.9%
310TR743NC	28th St - Valmont to Iris	Multimodal improvements	\$860,000	\$76,900	\$8,500	9.9%
3102ABCK01	Boulder Creek	Path lighting	\$979,680	\$97,000	\$0	9.9%
310TR692OC	Citywide	Bikeway facilities enhance	\$1,350,000	\$133,700	\$0	9.9%
310TR152NG	* Broadway - Violet to H	Local share of reconstructi	\$1,825,000	\$661,000	\$34,800	38.1%
3102ABCK03	Boulder Creek - Arapaho	Underpass	\$2,365,000	\$234,100	\$0	9.9%
310TR156NC	Boulder Creek & Aprapa	Reconstruction and multim	\$2,500,000	\$248,300	\$0	9.9%
310TR153NG	* 30th St & Colorado	Local share of bike/ped un	\$3,150,000	\$588,500	\$149,600	23.4%
310TR773OC	Citywide	Pedestrian facilities repair/	\$3,774,000	\$375,500	\$0	9.9%
310TR003OC	Citywide	Major capital reconstructio	\$4,800,000	\$436,900	\$39,700	9.9%
310TR052OG	Citywide Funds 2800 & 2	TIP local match & TMP imp	\$18,363,000	\$1,642,800	\$182,500	9.9%
Years 7-10	Citywide	Additional CIP Projects	\$29,710,500	\$3,783,600	\$449,100	14.2%
Action Plan	Railroad Quite Zone Improvements		\$5,000,000	\$712,319	\$0	14.2%
Action Plan	HOP Conversion to Clean Vehicles		\$12,000,000	\$1,709,567	\$0	14.2%
Action Plan	Community Transit Routes Converted to BRT		\$12,833,000	\$1,828,239	\$0	14.2%
Action Plan	East Circulator / Williams Village Improvements		\$16,301,000	\$2,322,304	\$0	14.2%
Action Plan	New/Modified Community Transit Network Routes		\$26,165,000	\$3,727,568	\$0	14.2%
Action Plan	Transit Capital Plan		\$38,900,000	\$5,541,845	\$0	14.2%
Action Plan	Other Bike/Ped Enhancements		\$50,757,000	\$7,231,040	\$0	14.2%
Ten-Year Total =>			\$236,232,180	\$32,531,881	\$1,122,700	14.2%
				97%	3%	

* Projects with grant funding; enhancement cost growth share is approximately 9.9% of total cost

\$33,654,581 <= Ten Year Growth Cost
 \$202,577,599 <= Total to be funded by other revenues

COST ALLOCATION FOR BUS BIKE WALK FACILITIES

The demand for Bus Bike Walk facilities is a function of both residential and nonresidential development. As shown in Figure DET8, functional population is similar to what the U.S. Census Bureau calls "daytime population" by accounting for people living and working in a jurisdiction. In addition to the Boulder-specific data, TischlerBise has relied on extensive public and private sector input to establish reasonable "weighting factors" to account for time spent at either residential or nonresidential development. These weighting factors are shown below with grey shading.



The functional population analysis starts with 2015 estimates of jobs and population in Boulder (see yellow highlighting), as documented in the Land Use Assumptions by TischlerBise. According to the 2013 TMP State of the System report (see page 3-13), approximately 10% of Boulder jobs are self-employed persons. The remaining 90% of jobs require “journey-to-work” travel. The 2014 Boulder Valley Employee Survey indicates Boulder residents held 38% of these jobs, with persons living outside of Boulder holding the remaining 62% of journey-to-work jobs. The functional population analysis assumes all workers spend ten hours per weekday (annualized average) at nonresidential locations.

Residents who work in Boulder are assigned 10 hours to nonresidential development (discussed above) and 14 hours to residential development. Residents who work outside Boulder are assigned 14 hours to residential development. Jobs held by non-residents are assigned 10 hours to nonresidential development. Residents who don't work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages) to account for time spent shopping, eating out, and other social/recreational activities.

Based on Boulder’s 2015 functional population analysis, the cost allocation for residential development is 60%, while nonresidential development accounts for 40% of the demand for Bus Bike Walk infrastructure.

Figure DET8: Functional Population

Boulder Functional Population Analysis				<i>Demand</i>	<i>Person</i>
<i>Service Units in 2015</i>				<i>Hours/Day</i>	<i>Hours</i>
Nonresidential					
	Jobs Located in City*	98,510			
	10% Self-employed	9,851		10	98,510
	Jobs Requiring Journey-To-Work	88,659			
	Jobs Held By Residents**	38%	33,690	10	336,900
	Jobs Held By Non-residents**	62%	54,969 <= 56% of jobs	10	549,690
	Non-working Residents	51,054		4	204,216
					Nonresidential Subtotal
					1,189,316
					Nonresidential Share => 40%
Residential					
	Population*	104,808			
	Non-working Residents	51,054		20	1,021,080
	Resident Workers	53,754			
	81% Residents Working in City		43,541 <= 44% of jobs	14	609,574
	(includes self-employed)***				
	19% Residents Working Outside City***	10,213		14	142,982
					Residential Subtotal
					1,773,636
					Residential Share => 60%
					TOTAL
					2,962,952

* Boulder Land Use Assumptions, TischlerBise 01/27/16.
 ** Percentages from 2014 Boulder Valley Employee Survey, Table 36, Question 32.
 *** Percentages from 2014 Boulder Community Household Survey, Table 112, Question 24.

Based on the cost of planned transportation enhancements (see Figure DET7 above) Bus Bike Walk improvements are expected to cost \$32.53 million over the next ten years. As shown in Figure DET9, 60% of this amount, divided by the projected increase in Boulder’s population over the next ten years, yields a capital cost of \$2,575 per additional resident. The Bus Bike Walk component of the 2016 DET for transportation improvements is equal to the cost per person multiplied by the average number of persons per dwelling, by house type. For example, an apartment building would have to pay \$2,575 per person multiplied by an average of 1.73 persons per dwelling, or \$4,454 per dwelling unit (truncated). The DET for nonresidential development is equal to the capital cost per additional job, multiplied by the average number of jobs per development unit.

Figure DET9: Bus Bike Walk Improvements Allocated to Population & Jobs

Ten Year Growth Cost of Bus Bike Walk Improvements =>			\$32,531,881
Cost Range and Allocation per Service Unit			
	<i>Proportionate Share Based on Functional Population</i>	<i>2015 to 2025 Increase</i>	<i>Cost per Additional Service Unit</i>
Boulder Population	60%	7,580	\$2,575
Boulder Jobs	40%	7,013	\$1,856
	2015	2025	
Population	104,808	112,388	
Jobs	98,510	105,523	
Ten Year Increase in Population plus Jobs		7.2%	
Residential			
<i>Type</i>	<i>Development Unit</i>	<i>Persons per Housing Unit</i>	<i>Proposed Bus Bike Walk Component</i>
Attached	Dwelling Unit	1.73	\$4,454
Detached	Dwelling Unit	2.50	\$6,437
Nonresidential			
<i>Type</i>	<i>Development Unit</i>	<i>Jobs per Development Unit</i>	<i>Proposed Bus Bike Walk Component</i>
All Nonresidential	Sq Ft of Floor Area	0.00241	\$4.47

FUNDING STRATEGY FOR TRANSPORTATION IMPROVEMENTS

The revenue projection shown in Figure DET10 assumes implementation of the maximum, voter-approved DET schedule and the development projections described in the Land Use Assumptions by TischlerBise. To the extent the rate of development either accelerates or slows down, there will be a corresponding change in DET revenue and the timing of capital improvements.

Maximum voter-approved DET rates are expected to yield approximately \$17.9 million over the next ten years, which will cover approximately 55% the growth share of planned transportation improvements (i.e. CIP plus Action Investment Program). In comparison, the current Transportation DET rate schedule would yield approximately \$11.5 million over the next ten years. Based on the maximum voter-approved DET rate schedule, residential development will generate approximately 63% of projected revenue, with nonresidential development generating the remaining 37%.

Figure DET10: Projected Transportation DET Revenue

		<i>Attached Residential</i>	<i>Detached Residential</i>	<i>Industrial</i>	<i>Retail & Restaurants</i>	<i>Office & Other Services</i>
Maximum DET Rates =>		\$3,624	\$5,630	\$2.48	\$2.48	\$2.48
Year		per housing unit	per housing unit	per 1000 Sq Ft	per 1000 Sq Ft	per 1000 Sq Ft
		<i>Housing Units</i>	<i>Housing Units</i>	<i>Square Feet</i>	<i>Square Feet</i>	<i>Square Feet</i>
Base	2015	21,498	24,242	13,576,996	8,565,611	14,848,416
Year 1	2016	21,716	24,297	13,670,663	8,624,414	14,950,360
Year 2	2017	21,937	24,352	13,765,405	8,683,890	15,053,473
Year 3	2018	22,159	24,407	13,860,809	8,743,783	15,157,308
Year 4	2019	22,382	24,463	13,956,881	8,804,095	15,261,869
Year 5	2020	22,607	24,520	14,053,626	8,864,830	15,367,162
Year 6	2021	22,833	24,576	14,151,048	8,925,989	15,473,193
Year 7	2022	23,061	24,633	14,249,152	8,987,577	15,579,965
Year 8	2023	23,290	24,690	14,347,942	9,049,596	15,687,486
Year 9	2024	23,520	24,748	14,447,424	9,112,049	15,795,758
Year 10	2025	23,752	24,806	14,547,603	9,174,939	15,904,789
<i>Ten Year Increase</i>		2,254	563	970,607	609,328	1,056,373
Projected Revenue =>		\$8,168,000	\$3,172,000	\$2,407,000	\$1,511,000	\$2,620,000
Total Projected Transportation DET Revenue (rounded) =>						\$17,878,000
Res Share =>		63%			Nonres Share => 37%	

APPENDIX A: LAND USE ASSUMPTIONS RELATED TO TRANSPORTATION

Most of the demographic data used in the transportation studies are documented in Appendix A of the 2016 Capital Facility Development Impact Fee Study for the City of Boulder (TischlerBise 8/31/16). This Appendix contains additional information specific to the transportation DET analysis, such as average number of persons by house type in Boulder.

PERSONS PER HOUSING UNIT

According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Development fees often use per capita standards and persons per housing unit, or persons per household, to derive proportionate-share fee amounts. TischlerBise recommends that the DET for residential development in Boulder be imposed according to the number of year-round residents per housing unit. To be consistent with the current DET rate schedule in Boulder, TischlerBise derived the average number of persons for two dwelling types: 1) “detached” single-family houses, and 2) all other categories of “units in structure”, which is referred to as “attached” housing. Because the U.S. Census Bureau only publishes standard American Community Survey (ACS) tables with single-family detached and attached units combined, TischlerBise created a custom tabulation of 2013 five-year Public Use Microdata Sample (PUMS) for Public Use Microdata Area (PUMA) 803, which closely approximates the City of Boulder. The un-weighted survey results indicate detached units contained 1,224 persons in 490 housing units, which is an average of 2.50 persons per housing unit. For attached housing (i.e. all other dwellings) the PUMS survey found 824 persons residing in 475 housing units, which is an average of 1.73 persons per housing unit.