



**CITY OF BOULDER
CITY COUNCIL AGENDA ITEM**

MEETING DATE: February 3, 2015

AGENDA TITLE: Discussion and direction on development-related impact fees and excise taxes.

PRESENTER/S

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Susan Richstone, Deputy Director of Community Planning and Sustainability
Tom Carr, City Attorney
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EXECUTIVE SUMMARY

The purpose of this item is to seek council direction on:

1. Moving forward to review and update the city's current development-related impact fees and excise taxes, and to consider potential new development-related fees, including a housing linkage fee. A housing linkage fee is charged on new non-residential uses to mitigate impacts on the demand for affordable housing created by those uses.
2. Whether to move forward in the short term to put in place a citywide housing linkage fee based upon the 2009 TischlerBise Development Excise Tax Study and the existing fee already in place for commercial development utilizing the floor area ratio (FAR) bonus policy in the DT-5 (downtown) zone district (Attachment A, pp. 16-20).

One of the community concerns raised over the past year has been related to whether current development-related fees and taxes are fully implementing the city's policy that "growth pay its own way." Policy 1.30 *Growth to Pay Fair Share of New Facility Costs* of the Boulder Valley Comprehensive Plan states that "... Growth will be expected to pay its own way, with the requirement that new development pay the cost of providing

needed facilities and an equitable share of services, including affordable housing, and to mitigate negative impacts such as those to the transportation system.”

The intent of this work plan item is to update the city’s development-related impact fees and taxes to ensure that they reflect the current costs of growth. Community concerns have been expressed that the economic recovery in the past few years combined with increased housing costs have only further increased the need for low, moderate and middle income housing in the community in addition to impacting city infrastructure. Some community members have expressed a concern that the current fee structure is not keeping up with current economic trends.

Staff would like council’s direction on the following proposed next steps:

1. Bring forward an ordinance for City Council consideration later this month to put in place a housing linkage fee based on the analysis in the 2009 TischlerBise Excise Tax Study and existing housing linkage fee in the DT-5 zone district. The linkage fee in the DT-5 district applies only to the commercial floor area resulting from application of the downtown floor area ratio (FAR) bonus for office space. Impact fees are assessed at the time of building permit. If council supports moving forward in the short term to put in place a citywide housing linkage fee, council will need to decide the effective date for applying the fee. Development-related fees and taxes are assessed at the time of building permit application and paid prior to final inspection.
2. Move forward to hire a firm or firms to both update the city’s current fees and/ or excise taxes and prepare any additional studies including a potential commercial linkage fee for affordable housing.

On February 10, Carson Bise, President of TischlerBise, will be meeting with City Council. The purpose of the session with City Council is to provide an assessment of the city’s current range of development-related fees and taxes relative to best practices, identify any gaps, and hear initial council input on desired changes and the potential scope of a study or studies moving forward. On Wednesday February 11, there will be a community forum at BMoCA from 5-7 pm on the topic of development – related fees and taxes.

BACKGROUND

The city contracted with the firm of TischlerBise in 2008 to prepare a Development Excise Tax and Impact Fee study in order to evaluate all of the components of the city’s Development Excise Tax and consider potential changes related to impact fees. These studies are included as Attachments A and B. The impetus for the study was that the Development Excise Tax and Housing Excise Tax were at or near the limits the city could charge based on the ballot item approved by the voters, and the belief was that the level of the excise taxes did not cover the growth-related costs for the services included.

As a result of the 2009 study and council direction:

1. At the beginning of 2010, the city implemented capital facility impact fees and allocated DET capacity to address growth-related costs for fire, human services, library, police, municipal facilities, parks and recreation capital improvements, transportation, and parkland. This was a significant change to the city's development-related tax/ fee structure and, due to concerns about the overall cost increase in fees and taxes (including Plant Investment Fees for the various city utilities), City Council reduced the Education Excise Tax to zero. In addition, City Council approved placing an increase to the Housing Excise Tax (based on the rates in the 2009 study) on the ballot. The ballot item did not pass.
2. In 2011, City Council amended Section 9-8-1 Table 8-2 "Floor Area Additions" B.R.C. 1981 to allow for floor area additions of up to a maximum of 1.0 for commercial uses in DT-5 zone district and establish a housing linkage fee that would apply to the additional commercial square footage.

The changes implemented in 2010 put in place *impact fees* to fund growth-related capital improvements for a number of city services formerly included in the DET. Prior to 2010, the city had in place *excise taxes* approved by the voters in 1998. Impact fees and excise taxes are both used to fund capital improvements and address impacts of new development. An impact fee must be based on a study that establishes the nexus between the impact of development, amount of the fee and how the funds will be spent (see additional information below). An excise tax requires approval by the voters of the proposed tax. In 1996, the firm of Tischler and Associates prepared a study for the city that recommended significant increases to the city's development excise taxes in effect at that time. In 1997, City Council placed a proposal on the ballot that reduced the rates recommended in the 1996 study. That ballot measure failed. In 1998, a proposal that basically took the previous rate and increased it by the rate of inflation was placed on the ballot. That measure passed and new rates were set beginning in 1999.

Change to the DT-5 Zone District

The base FAR in the DT-5 is 1.7. Prior to 2011, developments in the Downtown could be approved for up to 2.7 FAR (a 1.0 FAR addition) if the additional square footage was for housing (.5) and/or structured parking (.5). In 2011, this "FAR bonus" policy was amended to also allow additional square footage above the 1.7 base FAR for commercial uses. This policy change also put in place the city's first "linkage fee" for affordable housing, with the floor area addition subject to the established fee. The purpose of the change was to provide the opportunity for "Class A" office space in the downtown where there was very little available, particularly larger office floor plates.

The linkage fee is intended to offset some of the affordable housing impacts that the additional floor area would have on the community. The DT-5 linkage fee is currently set at \$9.53 per square foot and has been applied to four downtown developments that have opted to use the commercial FAR bonus. Approximately \$875,000 has been collected from the linkage fee into the city's affordable housing program as a result of this policy.

Background on Impact Fees

An “impact fee” is a one time fee to fund capital improvements necessitated by new development. Colorado law explicitly authorizes municipalities to impose impact fees to defray the cost of any improvements that are necessary to accommodate new developments and also sets out requirements for the adoption of impact fees including:

1. The fee is for capital facilities needed to serve new development
2. The amount of the fee must be based upon “the reasonable impacts of proposed development on existing capital facilities” and must be assessed at a level no greater than necessary to defray the impacts directly related to the proposed development
3. A “capital facility” is “any improvement or facility that: (a) is directly related to any service that a local government is authorized to provide; (b) has an estimated useful life of five years or longer; and (c) is required by the charter or general policy of a local government pursuant to resolution or ordinance.”
4. An impact fee cannot be imposed to remedy any deficiency in capital facilities that exists without regard to the proposed development.
5. The fee needs to be based on a study that quantifies the impacts.
6. The fee needs to be accounted for separately and earmarked for the capital expenses for which they were collected.

There are three basic methods used to calculate impact fees:

1. **Incremental Expansion** – documents the current level of service for each type of public facility. 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.
2. **Plan-based** – commonly used for public facilities that have adopted plans or engineering studies to guide capital improvements, such as utility systems.
3. **Cost recovery** – based on the rationale that new development is paying for its share of the useful life and remaining unused capacity of an existing facility.

The incremental expansion method was used for all of the components of the city’s impact fees except for library space and police communications center.

ANALYSIS

Current Impact Fee and Excise Tax Rates

Attachment D includes the city’s current tax/fee schedule for the Development Excise Tax (DET), Housing Excise Tax (HET), and Capital Facility Impact Fees.

While impact fees may be implemented by the city based on a study as outlined above, excise taxes are approved by the voters. The city’s current DET rate for non-residential development and HET rates for both residential and non-residential development are at the maximum rate approved by the voters in 1998. The DET for residential development has some remaining capacity. Based on the appropriate studies, the city could transition

from excise taxes to a housing linkage fee as well as a transportation impact fee and park land fee, or choose to leave some or all of these as excise taxes. However, increases to the maximum amount that can be charged would require approval by Boulder voters.

Implementation of a Housing Linkage Fee Citywide based on the 2009 TischlerBise Study

If the City Council supports moving forward in the short term to put in place a citywide housing linkage fee, the following chart shows what the rate would be, based on the 2009 study adjusted for cost increases. The table below includes all of the categories of uses that would be included based on the 2009 study. Please note that for certain uses the fee would be based on number of rooms, beds or students as opposed to square footage. This would be an interim measure until a new linkage fee study is prepared.

Nonresidential (Floor Area)

	<i>Fee per sq. ft.</i>
Retail/Restaurant	\$6.96
Business Park	\$7.70
Office	\$9.53
Hospital	\$8.23
School	\$2.24
Mini-Warehouse	\$0.09
Warehousing	\$3.11
Light Industrial	\$5.62

Other Nonresidential

	<i>Fee per Demand Indicator</i>
Nursing Home (per bed)	\$877.64
Day Care (per student)	\$389.60
Lodging (per room)	\$1,072.44

Attachment C includes a list of projects that have site plan approvals but have not yet applied for a building permit. An important caveat to note is that the linkage fee would apply to net new square footage and to a change in use of existing square footage. Therefore, for example, in the case of the Eads/ Golden Buff project, existing hotel rooms and non-residential square footage would be credited. Staff is working on providing information on pre-existing square footage and use prior to Tuesday's meeting to complete the table.

Any linkage fee put in place at this time would be updated by the new study, with the appropriate fee level established based on updated data and analysis.

Non-residential development in recent years

Staff was requested to calculate how much would have been collected over the past few years had the city implemented a citywide housing linkage fee at the time the linkage fee was implemented for the FAR bonus in the DT-5 zone in late 2011.

Based on analysis of building permit records, city staff estimates that between November 1, 2011 and the end of 2014, the city would have assessed between \$7 and \$8 million in fees on approximately one million square feet of new non-residential development. This preliminary analysis was based on additional square footage of nonresidential space included in building permit applications from November 2011 through the end of December 2014 (subtracting out the square footage that paid the existing linkage fee and some of the larger projects that had existing buildings on the site). Since the fee varies by type of non-residential use, this is a rough estimate and staff was not able to go back through every permit and verify the specific nature of the use. A more in depth analysis of the uses, square footage by uses, and demolitions would be needed to develop a more refined estimate. Impact fees are assessed on net new square footage and also for change in use.

The [workbook](#) prepared for the Design Excellence Initiative tour in fall 2014 included information on some of the fees and taxes paid for the five recent developments visited. The Impact Fees and Excise Taxes paid by each of these five projects is listed below:

Two Nine North (1925 30 th St.):	\$2,806,274
Solana Apartments (3100 Pearl):	\$4,594,567
Province Apartments (950 28 th St.)	\$4,673,752
1600 Pearl (3 rd floor addition)	\$68,730
Gas Lamp (910 28 th St.)	\$277,775

It is important to note that the Two Nine North project paid excise taxes under the structure in place prior to 2010. Therefore, it includes payment of approximately \$370,000 in Education Excise Tax and does not include any of the Capital Facility Impact Fees implemented in 2010.

NEXT STEPS

Staff is requesting council direction on the following items:

1. Whether, given the high rate of current development and related concerns staff should move forward in the first half of the year to both update current fees and consider new fees such as a citywide housing linkage fee.
2. Whether to move forward immediately to establish a citywide housing linkage fee based on the 2008 TischlerBise study.

ATTACHMENTS

- A: 2008 TischlerBise Development Excise Tax Study
- B: 2008 TischlerBise Development Impact Fee Study
- C: Recently Approved Site Review Projects that have not yet applied for Building Permits
- D: City of Boulder current Development Excise Tax (DET), Housing Excise Tax (HET), and Capital Facility Impact Fees

DEVELOPMENT EXCISE TAX STUDY

City of Boulder, Colorado



January 9, 2009

Prepared By:



DEVELOPMENT EXCISE TAX STUDY
City of Boulder, Colorado

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EXECUTIVE SUMMARY

OVERVIEW

The City of Boulder retained TischlerBise to prepare an excise tax study for various infrastructure categories. This report is an update to a Development Excise Tax (DET) study prepared in 1996 when the same consulting firm was known as Tischler & Associates, Inc. Although the City currently has development excise taxes in place for libraries, parks/recreation, human services, municipal services, police, and fire infrastructure, the City's may decide to implement impact fees for these facilities. In addition, the City of Boulder is considering continuation of excise taxes for transportation and affordable housing, while adding new excise taxes for vehicles/equipment and park land.

Excise taxes are one-time revenues often used to fund new infrastructure needed to accommodate new development. 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. The City of Boulder has legislative authority to impose development excise taxes upon approval of the voters.

Excise taxes differ from impact fees in that they are primarily a tool for raising revenue, as opposed to a land use regulation designed to provide growth-related facilities. In addition, excise taxes do not have to be earmarked or accounted for separately from the City's general revenue, do not have to specifically benefit new growth, and are generally more flexible than impact fees. Excise taxes can be applied in several ways. Some communities apply a rate to the construction value of the new development; others use a flat fee per acre of development, while other communities apply a straight fee by type of housing unit or square-foot of development. In Boulder, the current DET is assessed per housing unit by type of unit (detached and attached) and per square foot of nonresidential development regardless of type.

DEVELOPMENT EXCISE TAX SUMMARY

Figure 1 summarizes the proposed development excise tax methodologies and cost components. Updated development excise taxes have been calculated for Transportation and Affordable Housing. The Transportation development excise tax is based on capital costs from the 2003 Transportation Master Plan (TMP) and is provided for both the Action Plan and Vision Plan. The improvements on which the excise tax is based include projects to enhance mobility and access through multimodal facilities including roads, intersections, bike lanes, underpasses, and pedestrian enhancements. The Transportation DET would be paid by both residential and nonresidential development.

The Affordable Housing development excise tax is based on the cost to the City to meet Boulder's future affordable housing needs. This excise tax would be paid only by nonresidential development, as employment is the most direct generator of affordable housing needs. The recommended DET component uses a plan-based methodology driven by the City's adopted goal for affordable housing and the cost to the City to subsidize the provision of affordable units.

A new excise tax for Vehicles and Equipment will be used to expand the City's fleet to maintain the current infrastructure standard. This excise tax uses the same calculation steps as the impact fee for Municipal Facilities, with both residential and nonresidential development paying the cost of additional vehicles and equipment.

The City of Boulder has a high level of service for park land. Boulder's 2006 Parks Master Plan documents numerous undeveloped park sites (see page 20) and states park acreage "meets the guidelines for Boulder's projected population at build-out." (see page 23) Consistent with this finding, the Park Land excise tax is derived using the current inventory of park and recreation sites and projected population in 2030.

Figure 1. Summary of Proposed Excise Tax Methodologies and Cost Components

Type of Public Facility	Method	Cost Allocation
<i>Transportation</i>	▪ Plan-based cost of multimodal transportation corridor improvements	Residential and Nonresidential Average Weekday Vehicle Trips
<i>Affordable Housing</i>	▪ Plan-based City cost to subsidize affordable housing	100% Nonresidential
<i>Vehicles and Equipment</i>	▪ Incremental expansion cost of vehicles and equipment	Population and Jobs
<i>Park Land</i>	▪ Buy-in	100% Residential

DEVELOPMENT EXCISE TAXES BY TYPE OF LAND USE

Figures 2, 3, and 4 provide schedules of Development Excise Taxes for residential and nonresidential development. The Transportation Excise Tax is provided for both the Action Plan and Vision Plan (see the Transportation chapter for additional details on these options). Residential excise taxes vary by type and size of housing, based on finished floor area. Figure 2 indicates transportation excise tax amounts for single family housing. For comparison with the current transportation excise tax, the proposed amount for an average size unit is shown with grey shading at the top of the following table. On the right side of the table below, proposed increases assume implementation of excise taxes for transportation, vehicles/equipment, and park land.

Figure 1. Summary of Development Excise Taxes for Single Family Residential

Single Family	TRANSPORTATION				Current Transportation Excise Tax	Proposed Increase	
	Action Plan	Vision Plan	Vehicles and Equipment	Park Land		Action Plan	Vision Plan
Average Size	\$9,143	\$11,132	\$391	\$4,241	\$2,062	\$11,713	\$13,702
Square Feet							
900 or less	\$4,033	\$4,910	\$170	\$1,844		\$3,985	\$4,862
1,000	\$4,644	\$5,654	\$197	\$2,138		\$4,917	\$5,927
1,100	\$5,196	\$6,326	\$221	\$2,397		\$5,752	\$6,882
1,200	\$5,700	\$6,940	\$243	\$2,634		\$6,515	\$7,755
1,300	\$6,164	\$7,505	\$263	\$2,852		\$7,217	\$8,558
1,400	\$6,593	\$8,027	\$281	\$3,053		\$7,865	\$9,299
1,500	\$6,993	\$8,514	\$299	\$3,241		\$8,471	\$9,992
1,600	\$7,367	\$8,969	\$315	\$3,416		\$9,036	\$10,638
1,700	\$7,718	\$9,397	\$330	\$3,581		\$9,567	\$11,246
1,800	\$8,050	\$9,800	\$344	\$3,736		\$10,068	\$11,818
1,900	\$8,363	\$10,182	\$358	\$3,883		\$10,542	\$12,361
2,000	\$8,660	\$10,544	\$371	\$4,023		\$10,992	\$12,876
2,100	\$8,943	\$10,888	\$383	\$4,155		\$11,419	\$13,364
2,200	\$9,213	\$11,216	\$395	\$4,282		\$11,828	\$13,831
2,300	\$9,470	\$11,530	\$406	\$4,403		\$12,217	\$14,277
2,400	\$9,717	\$11,830	\$416	\$4,518		\$12,589	\$14,702
2,500	\$9,953	\$12,118	\$427	\$4,629		\$12,947	\$15,112
2,600	\$10,181	\$12,395	\$436	\$4,736		\$13,291	\$15,505
2,700	\$10,399	\$12,661	\$446	\$4,838		\$13,621	\$15,883
2,800	\$10,610	\$12,918	\$455	\$4,937		\$13,940	\$16,248
2,900	\$10,813	\$13,165	\$464	\$5,033		\$14,248	\$16,600
3,000	\$11,010	\$13,404	\$472	\$5,125		\$14,545	\$16,939
3,100	\$11,200	\$13,636	\$481	\$5,214		\$14,833	\$17,269
3,200	\$11,384	\$13,860	\$489	\$5,300		\$15,111	\$17,587
3,300	\$11,562	\$14,077	\$496	\$5,384		\$15,380	\$17,895
3,400	\$11,735	\$14,287	\$504	\$5,465		\$15,642	\$18,194
3,500	\$11,903	\$14,492	\$511	\$5,544		\$15,896	\$18,485
3,600	\$12,066	\$14,691	\$518	\$5,621		\$16,143	\$18,768
3,700	\$12,225	\$14,884	\$525	\$5,695		\$16,383	\$19,042

Figure 3 indicates transportation excise tax amounts for multifamily housing. For comparison with the current transportation excise tax, the proposed amount for an average size unit is shown with grey shading at the top of the following table. On the right side of the table below, proposed increases assume implementation of excise taxes for transportation, vehicles/equipment, and park land.

Figure 2. Summary of Development Excise Taxes for Multifamily Residential

Multifamily	TRANSPORTATION				Current Transportation Excise Tax	Proposed Increase	
	Action Plan	Vision Plan	Vehicles and Equipment	Park Land		Action Plan	Vision Plan
Average Size	\$6,819	\$8,301	\$272	\$2,950	\$1,245	\$8,796	\$10,278
<i>Square Feet</i>							
600	\$5,625	\$6,848	\$179	\$1,949		\$6,508	\$7,731
700	\$5,992	\$7,295	\$217	\$2,359		\$7,323	\$8,626
800	\$6,359	\$7,742	\$250	\$2,714		\$8,078	\$9,461
900	\$6,726	\$8,189	\$279	\$3,028		\$8,788	\$10,251
1,000	\$7,093	\$8,636	\$305	\$3,308		\$9,461	\$11,004
1,100	\$7,460	\$9,083	\$328	\$3,562		\$10,105	\$11,728
1,200	\$7,827	\$9,530	\$350	\$3,794		\$10,726	\$12,429
1,300	\$8,195	\$9,977	\$369	\$4,007		\$11,326	\$13,108
1,400	\$8,562	\$10,424	\$387	\$4,204		\$11,908	\$13,770
1,500	\$8,929	\$10,871	\$404	\$4,388		\$12,476	\$14,418
1,600	\$9,296	\$11,318	\$420	\$4,560		\$13,031	\$15,053

Current excise taxes for nonresidential development do not vary by type. Proposed excise taxes for nonresidential development are shown in Figure 4. At the top of the table are development categories with tax amounts per square foot of floor area. Development categories shown at the bottom have unique demand indicators, such as the number of students in a day care center. On the right side of the table below, proposed increases assume implementation of excise taxes for transportation, affordable housing, and vehicles/equipment.

Figure 3. Summary of Development Excise Taxes for Nonresidential Development

ITE Code	TRANSPORTATION				Current Transportation plus Housing Excise Tax	Proposed Increase		
	Action Plan	Vision Plan	Affordable Housing	Vehicles and Equipment		Action Plan	Vision Plan	
<i>Nonresidential (per Square Foot of Floor Area)</i>								
820	Retail / Restaurant	\$55.27	\$67.29	\$6.65	\$0.19	\$2.28	\$59.83	\$71.85
770	Business Park	\$13.14	\$16.00	\$7.35	\$0.22	\$2.28	\$18.43	\$21.29
710	Office	\$18.90	\$23.01	\$9.10	\$0.27	\$2.28	\$25.99	\$30.10
610	Hospital	\$18.09	\$22.03	\$7.86	\$0.23	\$2.28	\$23.90	\$27.84
520	School	\$9.85	\$11.99	\$2.14	\$0.06	\$2.28	\$9.77	\$11.91
151	Mini-Warehouse	\$2.57	\$3.13	\$0.09	\$0.00	\$2.28	\$0.38	\$0.94
150	Warehousing	\$5.10	\$6.21	\$2.97	\$0.08	\$2.28	\$5.87	\$6.98
110	Light Industrial	\$7.17	\$8.74	\$5.37	\$0.16	\$2.28	\$10.42	\$11.99
<i>Other Nonresidential (per unique demand indicator)</i>								
620	Nursing Home (per bed)	\$2,441	\$2,971	\$838	\$25			
565	Day Care (per student)	\$2,214	\$2,696	\$372	\$11			
320	Lodging (per room)	\$5,798	\$7,060	\$1,024	\$30			

TRANSPORTATION EXCISE TAX

It is common practice for jurisdictions to require project-level improvements to be addressed through development exactions that remain roughly proportional to a specific project. Project-level improvements are typically specified in a development agreement. In contrast, system improvements may benefit multiple development projects or even the entire jurisdiction. System improvements are funded by development impact fees or development excise taxes. The City of Boulder has legislative authority to impose a transportation excise tax upon approval of the voters.

To derive a maximum supportable Transportation Excise Tax for the city of Boulder, TischlerBise used the planned capital enhancements and improvements from the 2003 Transportation Master Plan (TMP). The TMP provides three transportation investment programs based on different levels of funding: Current Funding, the Action Plan and the Vision Plan. For the Transportation Excise Tax, planned improvements at two funding levels in the TMP—Action Plan and Vision Plan—have been included as potential policy options in selection of the appropriate transportation excise tax.

The Action Plan represents the next best steps toward reaching the community's transportation goals, as outlined in the TMP, if additional funding becomes available. Pursuing and funding the Action Plan would approximately double the number of corridor segments that could be fully developed into multimodal environments. The Vision reflects the completed multimodal system desired by the community, as reflected in the TMP. Using both Plan levels provides information and flexibility for the City in its decision making regarding transportation improvements and funding.

To derive the maximum supportable Transportation Excise Tax, total City costs benefiting growth from the TMP, at both Action and Vision Plan levels, are used and allocated 100 percent to new development. Projects included in the Plans are enhancements and capital improvements and do not reflect replacement or maintenance of existing facilities. The TMP Action Plan and Vision Plan improvements are shown in Figure 5 and include such multimodal improvements and enhancements as road improvements, intersections, bike lanes, underpasses, and pedestrian enhancements for the corridors shown. Since construction costs have increased almost 40 percent (per Colorado Department of Transportation) over the past five years, the City's share of the capital cost is inflated to 2008 dollars and is now estimated to be approximately \$176 million for the Action Plan and \$214 for the Vision Plan.

Figure 5. Transportation Action and Vision Plans and Capital Costs

	Rank	Multimodal Corridor	Total Cost	City Cost	
ACTION PLAN	VISION PLAN	1	28th St- Iris to Arapahoe	\$128,434,372	\$35,612,585
		2	28th St- Arapahoe to Baseline	\$9,391,715	\$4,349,322
		3	Arapahoe- Folsom to 33rd St	\$7,152,295	\$2,433,915
		4	Broadway- Balsam to 27th Way	\$8,416,263	\$5,697,951
		5	Broadway- 27th Way to Table Mesa	\$3,169,117	\$3,142,237
		6	Pearl Pkwy- 28th St to Foothills	\$20,420,800	\$11,946,350
		7	Arapahoe- 33rd to 55th St	\$14,553,999	\$6,791,248
		8	Table Mesa- Moorehead to 55th St	\$3,776,511	\$3,509,050
		9	Pearl- Broadway to 28th St	\$435,921	\$406,143
		10	Arapahoe- 55th St to Westview Dr	\$24,938,766	\$8,850,750
		11	Arapahoe/Canyon- Pearl to Folsom	\$574,029	\$574,029
		12	Diagonal Hwy- 28th St to Fourmile Creek	\$8,905,728	\$6,393,203
		13	Table Mesa- Broadway to Moorehead	\$211,037	\$211,037
		14	Broadway- Table Mesa to Greenbriar Blvd	\$2,405,353	\$614,032
		15	Pearl Pkwy- Foothills to 55th St	\$9,997,108	\$7,019,306
		16	55th St- Valmont to Arapahoe	\$2,722,832	\$1,585,380
		17	Foothills Hwy- Baseline to US 36	\$51,914	\$51,914
		18	Broadway- Iris Av to Balsam Av	\$11,307,368	\$2,521,668
		19	Broadway- North US 36 to Violet AV	\$26,221,677	\$10,355,789
		20	28th St- Jay Rd to Iris Av	\$6,075,386	\$4,839,406
		21	Diagonal Hwy- Fourmile Creek to 71st St	\$12,053,797	\$8,894,628
ACTION PLAN TOTAL			\$301,215,989	\$125,799,942	
Construction Cost Increase 2003 to 2008*				1.4	
ACTION PLAN Current City Cost (rounded)				\$176,120,000	
		22	Baseline- 32nd St to 55th St	\$856,782	\$606,298
		23	US 36- Baseline easement to planning area boundary	\$6,361,787	\$3,382,173
		24	Broadway Violet Av to Iris Av	\$6,592,970	\$4,866,254
		25	Baseline- Broadway to 33rd	\$0	\$0
		26	Table Mesa- Vassar to Broadway	\$1,843,153	\$1,843,153
		27	Valmont- 28th St to Foothills Hwy	\$3,307,986	\$2,556,856
		28	South Boulder Rd- 55th to 76th St	\$97,880	\$97,880
		29	Foothills Hwy- Goose Creek to Colorado Blvd	\$3,584,379	\$200,000
		30	Foothills Hwy- Colorado to Baseline	\$349,469	\$349,469
		31	Arapahoe- Westview Dr to 75th St	\$3,443,587	\$403,177
		32	Balsam/Edgewood/Valmont- Broadway to 28th St	\$26,688	\$26,688
		33	Valmont- Foothills Hwy to Pearl Pkwy	\$2,283,663	\$2,149,913
		34	Pearl Pkwy- 55th to Jay Rd	\$1,752,170	\$583,338
		35	28th St- North Broadway to Jay Rd	\$7,067,035	\$5,387,596
		36	Baseline- 9th St to Broadway	\$844,226	\$673,070
		37	Foothills Hwy- Diagonal to Goose Creek	\$309,848	\$179,608
		38	55th St- Arapahoe to Baseline	\$433,520	\$433,520
		39	Iris Av- Broadway to 28th St	\$1,926,498	\$1,108,098
		40	63rd Street- Jay Rd to Diagonal	\$6,585,692	\$2,500,412
		41	Baseline- 55th St to 75th St	\$209,793	\$0
VISION PLAN TOTAL			\$349,093,114	\$153,147,445	
Construction Cost Increase 2003 to 2008*				1.4	
VISION PLAN Current City Cost (rounded)				\$214,406,000	

* Colorado Department of Transportation (per City of Boulder)

Calibration of the transportation excise tax requires projected development in the City of Boulder to be converted into average weekday vehicle trips, as described in the following sections. It should be noted that while Boulder’s transportation system is multimodal in nature, use of vehicle trips is a reasonable proxy to determine the relative demand and resulting proportionate share, by type of land use, for transportation improvements.

Trip Generation by Size of Housing

TischlerBise used Census 2000 data for the City of Boulder to derive custom trip generation rates by type of housing, as shown in Figure 6. Boulder-specific trip generation rates for residential development are lower than the national averages.

Figure 6. Residential Trip Generation Rates by Type of Housing in Boulder

Boulder, Colorado		<i>Households (2)</i>			<i>Vehicles per Household by Tenure</i>
	<i>Vehicles Available (1)</i>	<i>Single Family</i>	<i>Multi-family</i>	<i>Total</i>	
Owner-occupied	35,163	16,596	2,992	19,588	1.80
Renter-occupied	29,294	4,864	15,187	20,051	1.46
TOTAL	64,457	21,460	18,179	39,639	1.63
		54.14%	45.86%		

	<i>Persons (3)</i>	<i>Trip Ends (4)</i>	<i>Vehicles by Type of Housing</i>	<i>Trip Ends (5)</i>	<i>Average Trip Ends</i>	<i>Trip Ends per Household</i>
Single Family	53,709	139,467	36,898	213,240	176,353	8.22
Multifamily	33,292	114,162	27,559	108,875	111,518	6.13
TOTAL	87,001	253,628	64,457	322,116	287,872	7.26

- (1) Vehicles available by tenure from Table H46, SF3, Census 2000.
- (2) Households by tenure and units in structure from table H32, SF3, Census 2000.
- (3) Persons by units in structure from table H33, SF3, Census 2000.
- (4) Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2003). For Single Family, fitted curve equation is $EXP(0.91*LN(persons)+1.52)$. To fit within the data range of the ITE studies, the number of persons was divided by 100 and the equation result multiplied by 100. For Multifamily, fitted curve equation is $(3.43*persons)+30.02$.
- (5) Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2003). For Single Family, fitted curve equation is $EXP(0.99*LN(vehicles)+1.81)$. To fit within the data range of the ITE studies, the number of vehicles available was divided by 140 and the equation result multiplied by 140. For Multifamily, fitted curve equation is $(3.94*vehicles)+293.58$.

As noted above, Boulder's transportation excise tax calculations are based on average weekday vehicle trip ends. Trip generation rates are from the reference book Trip Generation (ITE 2003). 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 excise taxes, trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50%. As discussed further below, the excise tax methodology includes additional adjustments to make the tax rates proportionate to the infrastructure demand for particular types of development. Residential development has a larger trip adjustment factor of 54% to account for commuters leaving the City of Boulder for work. According to the 2001 National Household Travel Survey (see Table 29, in the Federal Highway Administration publication dated 12/04), home-based weekday work trips are typically 31% of production trips (i.e., all out-bound trips, which are 50% of all trip ends). Also, Census 2000 data from Table P26 in Summary File 3 indicates that 28% of Boulder workers travel outside the city for work. In combination, these factors ($0.31 \times 0.50 \times 0.28 = 0.04$) support the additional 4% allocation of trips to residential development.

Data contained in the 2004 ITE publication titled Trip Generation Handbook indicate an inverse relationship between commercial building size and pass-by trips. Appropriate trip adjustment factors may be calculated according to commercial building size. For commercial developments, the trip adjustment factor is less than 50% because retail development often attracts 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 a small commercial building of 50,000 square feet of floor area, the ITE data indicates that on average 39% of the vehicles that enter are passing by on their way to some other primary destination. The remaining 61% of attraction trips have the commercial building as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 61% multiplied by 50%, or approximately 31% of the trip ends.

Figure 7 summarizes the input variables used to determine the transportation cost allocation by type of development. Please see Appendix A for a more detailed explanation of the demographic data. In the table below HU means housing unit, KSF means square feet of nonresidential development, in thousands, and ITE stands for the Institute of Transportation Engineers.

Figure 7. Development Prototypes and Vehicle Trip Inputs

	<i>ITE Code</i>	<i>Dev Type</i>	<i>Wkdy Veh Trip Ends</i>	<i>Dev Unit</i>	<i>Trip Adj Factor</i>
R1	210	Single Family Res	8.22	HU	54%
R2	220	All Other Res	6.13	HU	54%
NR1	150	Goods Production	4.96	KSF	50%
NR2	820	Retail/Restaurant	86.56	KSF	31%
NR3	110	Other Services	6.97	KSF	50%

Figure 8 shows projected travel demand (average weekday trips) based on the input variables discussed above. Development projections at the top of the figure are multiplied by the input variables from the previous table to yield average weekday travel demand in the City of Boulder. (See Appendix A for further discussion of development projections included in Figure.) Trip generation rates and trip adjustment factors convert projected development into average weekday vehicle trips. For example, in the base year, single-family housing units will produce 131,495 weekday trips (25,445 x 8.22 x 54% = 112,945). The same calculation is done for each land use type through 2030.

Figure 8. Projected Travel Demand Summary

Year->	<i>Base 2008</i>	<i>1 2009</i>	<i>2 2010</i>	<i>3 2011</i>	<i>4 2012</i>	<i>5 2013</i>	<i>22 2030</i>	<i>22-Year Increase</i>
CITY OF BOULDER DEMAND DATA								
SINGLE FAMILY HU	25,445	25,477	25,509	25,542	25,575	25,608	26,206	761
ALL OTHER HU	19,440	19,729	20,020	20,313	20,608	20,905	26,294	6,854
GOODS PRODUCTION KSF	16,090	16,230	16,360	16,500	16,640	16,780	19,330	3,240
RETAIL/RESTAURANT KSF	6,160	6,210	6,260	6,310	6,370	6,420	7,400	1,240
OTHER SERVICES KSF	25,820	26,030	26,250	26,470	26,690	26,920	31,010	5,190
<i>SF RES TRIPS</i>	112,945	113,087	113,231	113,375	113,520	113,667	116,325	3,380
<i>ALL OTHER RES TRIPS</i>	64,350	65,307	66,269	67,239	68,216	69,199	87,037	22,687
<i>GOODS PRODUCTION TRIPS</i>	39,903	40,250	40,573	40,920	41,267	41,614	47,938	8,035
<i>RETAIL/RESTAURANT TRIPS</i>	165,295	166,637	167,978	169,320	170,930	172,272	198,569	33,274
<i>OTHER SERVICES TRIPS</i>	89,983	90,715	91,481	92,248	93,015	93,816	108,070	18,087
<i>Total Vehicle Trips</i>	472,476	475,995	479,532	483,102	486,948	490,568	557,939	85,462

The cost of transportation improvements needed to accommodate new development through 2030 is shown at the top of Figure 9. For the Action Plan, the average cost is \$2,060 per additional vehicle trips anticipated through the year 2030. Improvements specified in the Vision Plan have an average cost of \$2,508 for each additional vehicle trip. The transportation excise tax by type of nonresidential development is shown below. To derive

the excise tax for each development category, multiply the trip generation rate by the trip adjustment factor and the capital cost per vehicle trip.

Figure 9. Transportation Excise Taxes for Nonresidential Development

		<i>Transportation Plan</i>		<i>Action</i>	<i>Vision</i>
				\$176,120,000	\$214,406,000
				85,462	85,462
				\$2,060	\$2,508
<i>ITE</i>		<i>Avg Weekday</i>	<i>Trip</i>	<i>Action Plan</i>	<i>Vision Plan</i>
<i>Code</i>		<i>Veh Trip Ends</i>	<i>Adjustment</i>	<i>Excise Tax</i>	<i>Excise Tax</i>
		<i>per 1,000 Sq Ft</i>	<i>Factors</i>	<i>per Sq Ft</i>	<i>per Sq Ft</i>
<i>Nonresidential (Based on Floor Area)</i>					
820	Retail / Restaurant	86.56	31%	\$55.27	\$67.29
770	Business Park	12.76	50%	\$13.14	\$16.00
710	Office	18.35	50%	\$18.90	\$23.01
610	Hospital	17.57	50%	\$18.09	\$22.03
520	School	14.49	33%	\$9.85	\$11.99
151	Mini-Warehouse	2.50	50%	\$2.57	\$3.13
150	Warehousing	4.96	50%	\$5.10	\$6.21
110	Light Industrial	6.97	50%	\$7.17	\$8.74
<i>Other Nonresidential</i>					
<i>Unique Demand Indicators</i>					
620	Nursing Home (per bed)	2.37	50%	\$2,441	\$2,971
565	Day Care (per student)	4.48	24%	\$2,214	\$2,696
320	Lodging (per room)	5.63	50%	\$5,798	\$7,060

The Institute of Transportation Engineers (ITE) publishes formulas for to derive average weekday vehicle trip ends based on the number of persons and vehicles available in residential development. Using year 2006 PUMS data, TischlerBise derived average persons and vehicles available by number of bedrooms, as shown in Figure 10.

Figure 10. Trip Generation Rates by Number of Bedrooms

	<i>Persons (1)</i>	<i>Trip Ends (2)</i>	<i>Vehicles Available (1)</i>	<i>Trip Ends (3)</i>	<i>Average Trip Ends</i>	<i>Households (1)</i>	<i>Trip Ends per Household</i>	<i>Recommended Trip Ends (4)</i>
SF 0-2 Bdrms	77	238	65	381	310	46	6.73	6.10
SF 3 Bdrms	248	690	192	1,113	902	109	8.27	7.50
SF 4 Bdrms	257	713	193	1,119	916	90	10.18	9.22
SF 5+ Bdrms	98	297	81	474	385	32	12.04	10.91
SF Subtotal	680	1,938	531	3,087	2,512	277	9.07	8.22
MF 0-1 Bdrm	81	248	58	522	385	71	5.42	5.24
MF 2+ Bdrms	192	629	121	770	699	100	6.99	6.76
MF Subtotal	273	876	179	1,292	1,084	171	6.34	6.13
GRAND TOTAL	953		710			448		

(1) 2006 American Community Survey, Public Use Microdata Sample for Colorado PUMA 00803 (unweighted data).

(2) Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2003). For Single Family, fitted curve equation is $EXP(0.91 * LN(persons) + 1.52)$. For Multifamily, fitted curve equation is $(3.43 * persons) + 30.02$.

(3) Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2003). For Single Family, fitted curve equation is $EXP(0.99 * LN(vehicles) + 1.81)$. For Multifamily, fitted curve equation is $(3.94 * vehicles) + 293.58$.

(4) Recommended trip ends are scaled down to make the average trip ends by type of housing match the average trip generation rates derived from Census 2000 Summary File 3 data.

To derive number of vehicle trip ends by square feet of housing TischlerBise combined demographic data from the Census Bureau and house size data from the Boulder County Assessor's database. The number of bedrooms per housing unit was the common connection between the two databases.

Average floor area and number of trip ends by bedroom range are plotted in the chart below, with a logarithmic trend line derived from the averages by bedroom range in the City of Boulder. TischlerBise derived the estimated average number of trip ends and preliminary road impact fees by size of housing, using 100 square feet intervals. The input variables used to derive the transportation excise tax are discussed above. For single-family housing in the City of Boulder, TischlerBise recommends a minimum impact fee based on a unit size of 900 square feet and a maximum impact fee based on a unit size of 3,700 square feet.

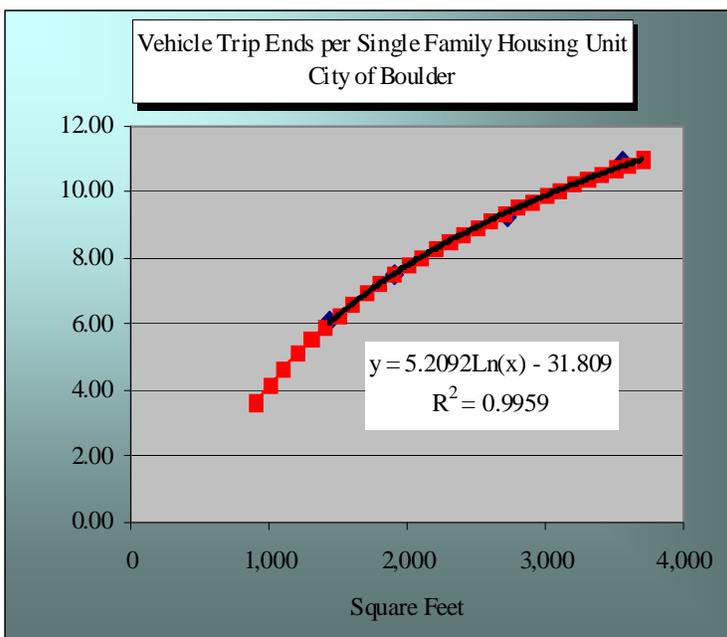
Figure 11. Transportation Excise Tax by Floor Area of Single Family Housing

Source: Average weekday vehicle trip ends by bedroom range from 2006 ACS PUMS. Finished square feet from Boulder County Assessor parcel database.

Residential Trip Adjustment Factor=> 54%
Capital Cost per Vehicle Trip=> \$2,060 \$2,508

Single Family Averages		
Bedrooms	Square Feet	Trip Ends
2 or less	1,428	6.10
3 bedrooms	1,903	7.50
4 bedrooms	2,724	9.22
5 or more	3,552	10.91

Square Feet	Vehicle Trip Ends	Action Plan	Vision Plan
900	3.63	\$4,033	\$4,910
1,000	4.17	\$4,644	\$5,654
1,100	4.67	\$5,196	\$6,326
1,200	5.12	\$5,700	\$6,940
1,300	5.54	\$6,164	\$7,505
1,400	5.93	\$6,593	\$8,027
1,500	6.29	\$6,993	\$8,514
1,600	6.62	\$7,367	\$8,969
1,700	6.94	\$7,718	\$9,397
1,800	7.24	\$8,050	\$9,800
1,900	7.52	\$8,363	\$10,182
2,000	7.79	\$8,660	\$10,544
2,100	8.04	\$8,943	\$10,888
2,200	8.28	\$9,213	\$11,216
2,300	8.51	\$9,470	\$11,530
2,400	8.74	\$9,717	\$11,830
2,500	8.95	\$9,953	\$12,118
2,600	9.15	\$10,181	\$12,395
2,700	9.35	\$10,399	\$12,661
2,800	9.54	\$10,610	\$12,918
2,900	9.72	\$10,813	\$13,165
3,000	9.90	\$11,010	\$13,404
3,100	10.07	\$11,200	\$13,636
3,200	10.23	\$11,384	\$13,860
3,300	10.39	\$11,562	\$14,077
3,400	10.55	\$11,735	\$14,287
3,500	10.70	\$11,903	\$14,492
3,600	10.85	\$12,066	\$14,691
3,700	10.99	\$12,225	\$14,884



TischlerBise also used American Community Survey 2006 PUMS data for Boulder to determine average weekday vehicle trips by size of multifamily housing. In contrast to the analysis of single family units, multifamily units are more uniform regarding floor area, with a limited number of units with three or more bedrooms. To avoid sample size problems, TischlerBise derived average floor area and trip generation for two bedroom ranges (0-1 bedroom and 2+ bedrooms) as shown in Figure 12. A linear formula was derived for the two bedroom ranges to derive trip generation rates in 100-foot intervals.

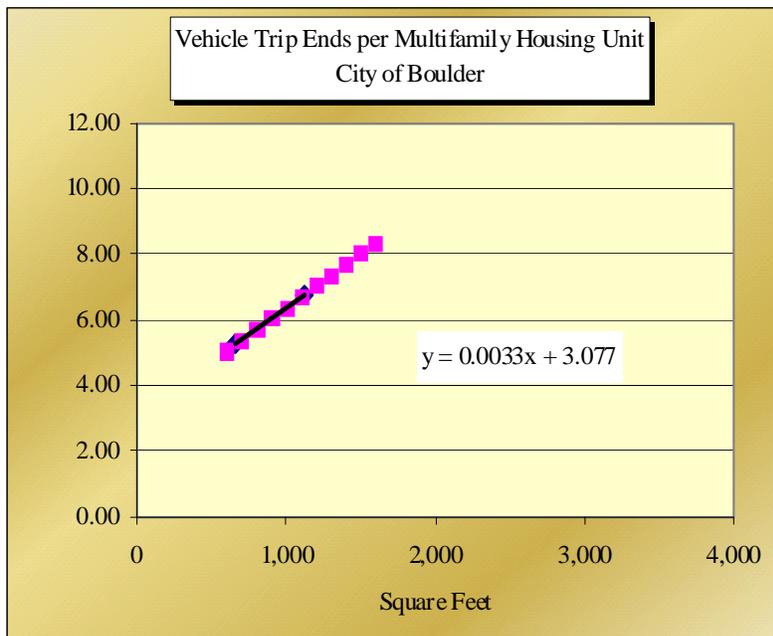
Figure 12. Transportation Excise Tax by Floor Area of Multifamily Housing

Source: Average weekday vehicle trip ends by bedroom range from 2006 ACS PUMS. Finished square feet from Boulder County Assessor parcel database.

Residential Trip Adjustment Factor=> 54%
Capital Cost per Vehicle Trip=> \$2,060 \$2,508

Averages for Multifamily Housing		
Bedrooms	Square Feet	Trip Ends
1 or less	656	5.24
2 or more	1,117	6.76

Square Feet	Vehicle Trip Ends	Action Plan	Vision Plan
600	5.06	\$5,625	\$6,848
700	5.39	\$5,992	\$7,295
800	5.72	\$6,359	\$7,742
900	6.05	\$6,726	\$8,189
1,000	6.38	\$7,093	\$8,636
1,100	6.71	\$7,460	\$9,083
1,200	7.04	\$7,827	\$9,530
1,300	7.37	\$8,195	\$9,977
1,400	7.70	\$8,562	\$10,424
1,500	8.03	\$8,929	\$10,871
1,600	8.36	\$9,296	\$11,318



AFFORDABLE HOUSING EXCISE TAX

Residential and nonresidential development in the City of Boulder currently pays a Housing Excise Tax (HET) to help provide permanent affordable housing in the City. As part of the Impact Fee/Excise Tax Study, TischlerBise was asked to calculate an impact fee or excise tax for Affordable Housing. Due to limitations in the State Impact Fee Act and impact fee case law, TischlerBise recommends an excise tax for Affordable Housing. If this Development Excise Tax is approved by the voters, the current HET should be repealed.

The City's current adopted goal for provision of permanent affordable housing is 10 percent of the City's housing stock. The breakdown of units by income category is 35 percent of units for very low-income households (<30% of Area Median Income (AMI)); 40 percent for low-income households (30-68% AMI) and 25 percent for moderate income households (69-80% AMI). The City's current inventory of approximately 2,800 permanently affordable units is short by approximately 1,700 units. The City will continue to pursue adding these units to the inventory to meet the current need through a variety of means such as funding, policies and planning, direct services, and asset management.¹

- Funding is currently from a variety of grants and loans—approximately \$3.5-4.5 million annually—provided to non-profit and for-profit agencies and housing developers. Public investment is used toward acquisition, rehabilitation, and/or new construction of permanently affordable rental or for-sale housing. Funding and financing sources include locally-controlled funds such as Affordable Housing Funds (from the General Fund and Cash-in-Lieu); Community Housing Assistance Program (CHAP); property tax dedicated mill levy; Housing Excise Tax; CDBG (federal funds); HOME (federal funds); and Private Activity Bonds (tax-exempt bond allocation that may be used to finance affordable housing). State and Federal funds and financing are available as well.
- Policies and Planning: Design, development and implementation of policies that increase affordable housing inventory. Planning efforts focus on identification of future housing needs and mechanisms to address them. Planning staff also implements the city's Inclusionary Zoning Ordinance, which requires that at least 20 percent of new residential development is committed as permanently affordable.

¹ Discussion below from, *City of Boulder Affordable Housing Report, February 2008*.

If the City were to stop growing today, the affordable housing goal would still be pursued through the above means. However, the City will not stop growing and additional units will be required to meet the needs of future development. To meet the City's future affordable housing needs, TischlerBise recommends implementation of a development excise tax for affordable housing, paid only by nonresidential development. Nonresidential development should pay the affordable housing excise tax because employment is the most direct generator of affordable housing needs. The recommended DET component uses a plan-based methodology driven by the City's adopted goal for affordable housing and the average cost to the City to subsidize the provision of affordable units.

It should be noted, that impact fees or development excise taxes on new residential development can be waived for affordable units. If the City were to adopt impact fees, the amount waived or foregone would have to be covered through other means (such as from the General Fund) to make each impact fee account whole. This should be addressed in the ordinance that adopts the fee. Without this waiver, the proposed impact fees will add to the cost of an affordable housing unit.

Furthermore, the consultant recommends that the existing dedicated property tax for housing and other existing funding sources be used to correct the existing deficiency in LOS and cover housing-related operating costs. With this funding strategy, Boulder will be able to correct the existing deficiency in affordable housing with property tax revenue and other means such as inclusionary zoning, while meeting its future growth-related affordable housing needs through the updated development excise tax.

Nonresidential development will be assessed the tax per square foot of gross floor area, or based on unique demand indicators, such as the number of rooms in a hotel. The tax rate is derived by multiplying the affordable housing cost per employee by the number of employees per demand indicator.

Figure 13 summarizes the demand for affordable housing units through 2030. The current employment base of 97,750 jobs is projected to increase to 117,400 jobs by 2030. Residential development is projected to increase by 7,500 units. Assuming the City's current target of 10 percent as permanently affordable, an additional 750 units are needed to accommodate future affordable housing needs brought about by nonresidential development in the City. The 750 units are further broken down by income category, per the City's targets at 35 percent for very low income, 40 percent for low income, and 25 percent for moderate income. The projected net increase of 19,650 jobs is used as the denominator in the LOS calculation for affordable housing.

Figure 13. Affordable Housing Demand

<i>Demand Units</i>	<i>Base Year</i> 2008	<i>2030</i> <i>Projection</i>	<i>Net</i> <i>Increase</i>
Jobs in Boulder	97,750	117,400	19,650
Housing Units*	45,000	52,500	7,500
10% Permanently Affordable HU Goal			750

*% of Aff. Units***

35% Very Low Income Aff. Units (<30% AMI)	262
40% Low Income Aff. Units (30-68% AMI)	300
25% Moderate Income Aff. Units (69-80% AMI)	187
TOTAL	750

* Current affordable housing goal is based on 45,000 total housing units, therefore this is base year figure.

** City of Boulder adopted targets.

Figure 14 provides detail on total subsidy required for each affordable housing unit income category and the City's estimated share of the subsidy. Income levels and affordable prices are from 2008 housing data, provided by City staff. City subsidy estimates were provided by City of Boulder staff based on recent practice. The City share of the subsidy is the basis for the excise tax calculation. However, it should be noted that staff notes that the external sources of subsidy that are used to leverage financing—namely Federal funds, foundation money, donations to non-profits, tax credits, etc.—are not anticipated to increase to meet additional future demand generated by new nonresidential development. If this is the case and the City share increases commensurately, the methodology used to calculate the Affordable Housing excise tax, which is based on current practice, may not fully cover future costs. This should be monitored for potential refinement in future updates.

Figure 14. Affordable Housing Costs / Subsidy Requirement

	<i>Median Income</i>	<i>Moderate Income</i>	<i>Low Income</i>	<i>Very Low Income</i>
<i>% of AMI (range) —></i>	100%	69-80%	30-68%	<30%
<i>% of AMI (assumption) —></i>		75.7%	50.0%	30%
Assumed Income for Household Size*	\$78,300	\$59,265	\$39,150	\$23,500
Affordable Price of Attached Unit**	\$220,600	\$156,700	\$89,078	\$36,500
Median Price of Attached Unit**	\$250,000	\$250,000	\$250,000	\$250,000
Total Subsidy Required	\$29,400	\$93,300	\$160,922	\$213,500
City Share of Subsidy***	\$0	\$50,000	\$60,000	\$70,000

* City of Boulder, 2008 Housing and Income Data; assume 3-person household

** City of Boulder, 2008 Housing and Income Data; assumes Attached Unit

*** City of Boulder

The City’s total share of the cost to provide permanently affordable housing due to new nonresidential development between 2008 and 2030 is estimated to be approximately \$45.8 million. The estimated cost was derived from the projected increase in the need for affordable units and the current estimated City subsidy per unit. Based on the projected increase in employment from 2008 to 2030 of 19,650, the cost per job is \$2,328. Detail is provided in Figure 15.

Figure 15. Projected Future Affordable Housing Costs

<i>Cost of Affordable Housing</i>	<i>City Cost per Unit*</i>	<i>Affordable Units</i>	<i>Total Need**</i>
Very Low Income Aff. Units (<30% AMI)	\$70,000	262	\$18,375,000
Low Income Aff. Units (30-68% AMI)	\$60,000	300	\$18,000,000
Moderate Income Aff. Units (69-80% AMI)	\$50,000	187	\$9,375,000
TOTAL			\$45,750,000
Net Increase in Jobs (2008 thru Buildout)			19,650
Net City Cost per Additional Job in Boulder			\$2,328

* See "Subsidy Requirement"; represents the estimated City share of gap between median price and affordable price for attached units

** Based on net increase in affordable unit needs by income category multiplied by estimated City share of subsidy required.

To derive the affordable housing development excise tax per square foot, the City cost per job is multiplied by the number of employees per demand unit. For example for retail establishments, the cost per job of \$2,328 is multiplied by 2.86 employees per 1,000 square feet and divided by 1,000 ($\$2,328 \times 2.86 / 1,000 = \6.65 per square foot). As shown in Figure 16, the resulting affordable housing excise tax for office development is 19 times the City’s current adopted tax rate of \$0.49 per square foot of nonresidential development.

Figure 16. Affordable Housing Development Excise Tax Calculation

<u>Level Of Service</u>	<u>Per Employee</u>
Affordable Housing City Cost per Job	\$2,328

<i>ITE Code</i>	<i>Employees Per 1,000 Sq Ft</i>	<i>Excise Tax per Sq Ft</i>	
<u>Nonresidential (Floor Area)</u>			
820	Retail / Restaurant	2.86	\$6.65
770	Business Park	3.16	\$7.35
710	Office	3.91	\$9.10
610	Hospital	3.38	\$7.86
520	School	0.92	\$2.14
151	Mini-Warehouse	0.04	\$0.09
150	Warehousing	1.28	\$2.97
110	Light Industrial	2.31	\$5.37
		<i>Excise Tax per Demand Indicator</i>	
<u>Other Nonresidential</u>			
620	Nursing Home (per bed)	0.36	\$838
565	Day Care (per student)	0.16	\$372
320	Lodging (per room)	0.44	\$1,024

VEHICLES AND EQUIPMENT EXCISE TAX

A new excise tax for Vehicles and Equipment may be used to expand the City's fleet to maintain the current infrastructure standard. This excise tax uses the same calculation steps as the impact fee for Municipal Facilities, with both residential and nonresidential development paying the cost of additional vehicles and equipment. As shown in Figure 17, the total value of Boulder's fleet (~\$24.7 million excluding fire apparatus that will be funded with fire impact fees) was allocated 72% to residential development and 28% to nonresidential development. This cost allocation is based on Boulder's functional population that accounts for residents and jobs, with adjustments for commuting patterns. The current count of vehicles and equipment by class, along with the average purchase price for each class, were provided by City staff.

Figure 17. Current Standards for Vehicles and Equipment

Class	Count	Description	Average Purchase Cost	TOTAL by Class
MA-100	14	SEDAN FULL SIZE NON-PATROL	\$28,877	\$404,278
MA-150	24	SEDAN COMPACT	\$21,614	\$518,736
MA-200	43	SEDAN POLICE PATROL	\$35,623	\$1,531,789
MA-300	73	TRUCK 1/2 TON AND 3/4 TON	\$30,867	\$2,253,291
MA-315	55	COMPACT PICKUP	\$23,376	\$1,285,680
MA-320	65	SPORT UTILITY	\$31,053	\$2,018,445
MA-325	15	FULL SIZE VAN	\$47,719	\$715,785
MA-350	17	MINI VAN	\$24,431	\$415,327
MA-400	39	TRUCK-1 TON	\$36,738	\$1,432,782
MA-401	5	TRUCK 1 TON DIESEL	\$39,110	\$195,550
MA-425	1	TRUCK-14500 GVWR GAS	\$26,559	\$26,559
MA-500	14	TRUCK-15K-19K GVWR	\$67,751	\$948,514
MA-600	9	TRUCK-20K-39K GVWR	\$125,611	\$1,130,499
MA-625	19	TRUCK-40K+ GVWR	\$133,414	\$2,534,866
MA-650	5	STREET SWEEPERS	\$156,384	\$781,920
MA-675	6	TRUCK-SEWER MAINTENANCE	\$131,249	\$787,494
MA-700	50	OFF ROAD/EARTH MOVING HVY DTY	\$51,313	\$2,565,650
MA-701	2	OFF ROAD/EARTH MOVING LT DTY	\$33,657	\$67,314
MA-800	153	MISC EQUIP W/METER W/ENGINE	\$15,874	\$2,428,722
MA-900	290	MISC EQUIP W/O METER W/ENGINE	\$8,071	\$2,340,590
MA-901	38	MISC EQUIP W/O METER W/O ENGIN	\$8,916	\$338,808
TOTAL	937			\$24,722,599

Weighted Average Cost per Unit => \$26,000

	Proportionate Share	2008 Demand Units	Cost per Demand Unit
Residential	72%	103,100 Population	\$170.13
Nonresidential	28%	97,750 Jobs	\$69.78

6.54 items per 1,000 persons

2.68 items per 1,000 jobs

Source: City of Boulder fleet database.

The current infrastructure standard for vehicles and equipment is an average expenditure of \$107.13 for each resident of Boulder. Excise taxes for both Single Family and Multifamily housing are shown in Figure 18. The excise tax amount is based on the average number of persons, by unit size, and the capital cost per person for vehicles and equipment. Appendix A provides documentation on the average number of persons by type and size of housing.

Figure 18. Vehicle and Equipment Excise Tax for Residential Development

<i>Level Of Service</i>	<u>Per Person</u>
Vehicles and Equipment Cost	\$170.13

<i>Square Feet</i> <i>(finished floor area)</i>	<i>Persons per Housing Unit</i>		<i>Excise Tax per Housing Unit</i>	
	<i>Single Family</i> <i>(SFD, SFA & MH)</i>	<i>Multifamily</i> <i>(all other types)</i>	<i>Single Family</i> <i>(SFD, SFA & MH)</i>	<i>Multifamily</i> <i>(all other types)</i>
Wt Avg	2.30	1.60	\$391	\$272
600	1.00	1.06	\$170	\$179
700	1.00	1.28	\$170	\$217
800	1.00	1.47	\$170	\$250
900	1.00	1.64	\$170	\$279
1,000	1.16	1.79	\$197	\$305
1,100	1.30	1.93	\$221	\$328
1,200	1.43	2.06	\$243	\$350
1,300	1.55	2.17	\$263	\$369
1,400	1.66	2.28	\$281	\$387
1,500	1.76	2.38	\$299	\$404
1,600	1.85	2.47	\$315	\$420
1,700	1.94		\$330	
1,800	2.03		\$344	
1,900	2.11		\$358	
2,000	2.18		\$371	
2,100	2.25		\$383	
2,200	2.32		\$395	
2,300	2.39		\$406	
2,400	2.45		\$416	
2,500	2.51		\$427	
2,600	2.57		\$436	
2,700	2.62		\$446	
2,800	2.68		\$455	
2,900	2.73		\$464	
3,000	2.78		\$472	
3,100	2.83		\$481	
3,200	2.87		\$489	
3,300	2.92		\$496	
3,400	2.96		\$504	
3,500	3.01		\$511	
3,600	3.05		\$518	
3,700	3.09		\$525	

Figure 19 indicates the vehicle and equipment excise tax for nonresidential development. The excise tax is derived from the average number of employees per demand unit and the capital cost per employee. Appendix A provides documentation on the ratio of jobs to nonresidential demand units (i.e. floor area or unique indicators such as rooms in a hotel).

Figure 19. Vehicle and Equipment Excise Tax for Nonresidential Development

<i>Level Of Service</i>		<i>Per Employee</i>	
Vehicles and Equipment Cost		\$69.78	
<i>ITE Code</i>		<i>Employees per 1,000 Square Feet</i>	<i>Excise Tax per Square Foot</i>
<i>Nonresidential (Floor Area)</i>			
820	Retail / Restaurant	2.86	\$0.19
770	Business Park	3.16	\$0.22
710	Office	3.91	\$0.27
610	Hospital	3.38	\$0.23
520	School	0.92	\$0.06
151	Mini-Warehouse	0.04	\$0.00
150	Warehousing	1.28	\$0.08
110	Light Industrial	2.31	\$0.16
<i>Other Nonresidential</i>			
		<i>Excise Tax per Demand Indicator</i>	
620	Nursing Home (per bed)	0.36	\$25
565	Day Care (per student)	0.16	\$11
320	Lodging (per room)	0.44	\$30

PARK LAND EXCISE TAX

The City of Boulder has a high level of service for park land. Boulder's 2006 Parks Master Plan documents numerous undeveloped park sites (see page 20). On page 23, the Plan concludes park acreage "meets the guidelines for Boulder's projected population at build-out." Consistent with this finding, the Park Land excise tax is derived using the current inventory of park and recreation sites and projected population in 2030 (i.e. a buy-in approach). This funding strategy is consistent with the development impact fee for parks and recreation, which excludes the cost of land.

Figure 20 itemizes Boulder's current inventory of park and recreation sites. With 1,631 acres of land and an estimated cost factor of \$134,000 per acre, Boulder has already invested approximately \$1,844 for each resident expected by the year 2030. The land cost factor (approximately \$3 per square foot) is the weighted average cost of three recent acquisitions by the City of Boulder (i.e., Elks, Mesa, and Valmont Parks purchased between 1999 and 2003).

Figure 20. Infrastructure Standard for Park Land

Site Name	Acres	General Use	Location
BOULDER RESERVOIR	390.0	Natural Lands	51st St., N. of Jay Rd.
AREA III	186.0	Natural Lands / Undeveloped	N. 26th St.
FLATIRONS GOLF COURSE	127.0	Golf Course	5706 Arapahoe
VALMONT CITY PARK	126.0	Park / Dog Park	Valmont Rd. & Airport Rd.
NATURAL AREA / HABITAT	118.0	Natural Lands	N. 51st St.
BOULDER RESERVOIR REC AREA	67.0	Marina, Beach	51st St., N. of Jay Rd.
FOOTHILLS COMMUNITY	65.5	Park / Office/Maintenance	800 Cherry Ave.
COOT LAKE	65.0	Park / Natural Lands	5600 63rd St.
EAST BOULDER COMMUNITY PARK	53.6	Park / Dog Park	5660 Sioux Dr.
PLEASANT VIEW FIELDS	52.0	Athletic Fields	3805 47th St.
HARLOW PLATTS COMMUNITY PARK	50.5	Park / Lake	Gillespie, S. of Grinnell
GERALD STAZIO BALLFIELDS	42.0	Athletic Fields	2445 Stazio
TOM WATSON	31.0	Park/Courts/Ballfields	6180 N. 63rd St.
EATON	28.5	Park / Natural Lands	E. end of Nautilus Ct.
SCOTT CARPENTER PARK/POOL	16.8	Park / Pool	30th & Arapahoe
TANTRA	16.8	Park	46th & Hanover
CHAUTAUQUA	14.8	Park	900 Baseline Rd.
NORTH BOULDER	12.5	Park	9th & Dellwood
PARK EAST	11.3	Greenway / Park	Aurora & Mohawk
MAXWELL LAKE	8.6	Undeveloped Park	Linden Park Dr. N. of Linden
MARTIN	8.3	Park	36th & Eastman
AURORA 7	7.9	Park	38th & Aurora
ELKS	7.9	Park	3995 N. 28th
CRESTVIEW	7.7	Park	17th & Sumac Ave.
EAST MAPLETON BALLFIELDS	7.6	Athletic Fields	30th & Mapleton
HOWARD HEUSTON	7.5	Park / Dog Park	34th St., S. of Iris Ave.
CENTRAL MUNICIPAL COMPLEX	7.4	Park / City Offices	Canyon & Broadway Ave.
VIOLET	7.3	Undeveloped	17th & Violet Ave.
EBEN G. FINE	7.0	Park	3rd & Arapahoe Ave.
BEAR CREEK	6.6	Park	Lehigh & Table Mesa
WEST HIGHLAND	6.5	Park	W. end of Dartmouth
BURKE	6.0	Park	Mohawk & Pawnee
CENTRAL PARK	5.5	Park / Bandshell	13th & Canyon Blvd.
PARKSIDE	5.5	Park	26th & Kalmia Ave.
N BOULDER REC CENTER / OLMSTED	5.2	Rec Center / Park	Broadway Ave. & Forest
HEATHERWOOD	5.0	Undeveloped Park	Heatherwood, E. of 75th
ARAPAHOE RIDGE	4.6	Park	Eisenhower Dr., S. of Arapahoe
KEEWAYDIN MEADOWS	4.5	Park	Manhattan & Sioux
CHRISTIENSEN	4.4	Park	3100 Kings Ridge Blvd.
SHANAHAN RIDGE	4.4	Park	Lehigh & Greenbriar
COLUMBINE	4.3	Park	23rd & Glenwood
ELMERS TWO MILE	4.0	Park	2700 Iris Ave.
PALO EAST	4.0	Park	Corriente Pl. & Campo Ct.
MEADOW GLEN	2.5	Park	Pennsylvania Ave., E. of 55th
PARK OPERATIONS FACILITY	2.0	Office / Maintenance	E. end of Old Pearl St.
ADM OFFICES / IRIS CENTER	1.4	Main Dept Offices	3198 N. Broadway Ave.
EAST BOULDER COMMUNITY CENTER	1.1	Recreation Center	5660 Sioux Dr.
TANTRA MAINTENANCE FACILITY	1.0	Office / Maintenance	Tantra Dr.
SPRUCE POOL	0.8	Pool	21st & Spruce
S BOULDER RECREATION CENTER	0.6	Recreation Center	1360 Gillespie
Total Acres	1,631.4	Population in 2030	118,500
Land Cost per Acre	\$134,000	Park Land Cost per Person	\$1,844

Park Land excise taxes, by type and size of residential unit, are shown in Figure 21. The cost per person for park land, multiplied by the average number of persons per housing unit, yields the excise tax amount. Documentation on the average number of persons by finished floor area is provided in Appendix A.

Figure 21. Excise Tax Schedule for Park Land

<i>Level Of Service Standard</i>	<u>Per Person</u>
Park Land Cost	\$1,844

<i>Square Feet</i> <i>(finished floor area)</i>	<i>Persons per Housing Unit</i>		<i>Excise Tax per Housing Unit</i>	
	<i>Single Family (SFD, SFA & MH)</i>	<i>All Other Types</i>	<i>Single Family (SFD, SFA & MH)</i>	<i>All Other Types</i>
Wt Avg	2.30	1.60	\$4,241	\$2,950
600	1.00	1.06	\$1,844	\$1,949
700	1.00	1.28	\$1,844	\$2,359
800	1.00	1.47	\$1,844	\$2,714
900	1.00	1.64	\$1,844	\$3,028
1,000	1.16	1.79	\$2,138	\$3,308
1,100	1.30	1.93	\$2,397	\$3,562
1,200	1.43	2.06	\$2,634	\$3,794
1,300	1.55	2.17	\$2,852	\$4,007
1,400	1.66	2.28	\$3,053	\$4,204
1,500	1.76	2.38	\$3,241	\$4,388
1,600	1.85	2.47	\$3,416	\$4,560
1,700	1.94		\$3,581	
1,800	2.03		\$3,736	
1,900	2.11		\$3,883	
2,000	2.18		\$4,023	
2,100	2.25		\$4,155	
2,200	2.32		\$4,282	
2,300	2.39		\$4,403	
2,400	2.45		\$4,518	
2,500	2.51		\$4,629	
2,600	2.57		\$4,736	
2,700	2.62		\$4,838	
2,800	2.68		\$4,937	
2,900	2.73		\$5,033	
3,000	2.78		\$5,125	
3,100	2.83		\$5,214	
3,200	2.87		\$5,300	
3,300	2.92		\$5,384	
3,400	2.96		\$5,465	
3,500	3.01		\$5,544	
3,600	3.05		\$5,621	
3,700	3.09		\$5,695	

IMPLEMENTATION AND ADMINISTRATION

All costs in the development excise tax 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 the tax amounts. 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, which provides comparative cost multipliers for various geographies and types of construction. The multipliers can be applied against the calculated excise tax amounts. If cost estimates change significantly the City should redo the calculations.

It is recommended that the excise taxes be collected at the time of building permit. Revenue from excise taxes does not typically have to be earmarked or accounted for separately from the City's general revenue and does not have to specifically benefit new growth.

APPENDIX A. DEMOGRAPHIC DATA

In this Appendix, TischlerBise documents the demographic data and development projections used in the Impact Fee / Development Excise Tax study for the City of Boulder. Although long-range projections are necessary for planning capital improvements, a shorter time frame of five years is critical for the impact fees analysis. Infrastructure standards are calibrated using 2008 data and the first projection year for the cash flow model will be 2009. The City of Boulder's fiscal year begins January 1st.

POPULATION AND HOUSING CHARACTERISTICS

TischlerBise recommends the use of two residential categories in the impact fee calculations: 1) Single Family (detached and attached) and 2) All Other housing types. Differentiating impact fees by type of housing helps make the fees proportionate to the demand for public facilities. Single Family housing units are normally larger and have more persons than All Other housing types. According to the U.S. Census Bureau's American Community Survey data for 2006, Single Family housing in Boulder averages 2.3 persons per unit (see the rows with yellow shading in Figure A1). All Other housing averages 1.6 persons per unit (see the rows with tan shading in the table below).

Impact fees often use per capita standards and persons per housing unit or persons per household to derive proportionate-share fee amounts. When persons per housing unit multipliers are used in the fee calculations, infrastructure standards are derived using year-round population. When persons per household multipliers are used in the fee calculations, the impact fee methodology assumes all housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. In the City of Boulder impact fee will be derived using year-round population and the average number of persons per housing unit.

Figure A1. Persons per Housing Unit

<i>House Type Demographics</i>				<i>Housing</i>	<i>Persons Per</i>	
	<i>Persons</i>	<i>Hshlds</i>	<i>PPH</i>	<i>Units</i>	<i>Housing Unit</i>	<i>Hsg Mix</i>
Single Family (SFD, SFA & MH)	54,948	21,776	2.52	23,678	2.3	57%
All Other Types	28,671	16,097	1.78	17,651	1.6	43%
Group Quarters	8,855					
Total	92,474	37,873		41,329		

Source: U.S. Census Bureau, 2006 American Community Survey.

AVERAGE NUMBER OF PERSONS BY SIZE OF HOUSING UNIT

To derive impact fees by floor area of housing requires a linkage of demographic data from the U.S. Census Bureau and house size data from the Boulder County Assessor, with number of bedrooms as the common connection between the two databases. Number of persons by bedroom range may be determined from survey data provided by the U.S. Census Bureau. The City of Boulder is in Public Use Microdata Area (PUMA) 00803. PUMAs are areas of roughly 100,000 persons for which the Census Bureau makes available a 5% sample of responses to the long-form census questionnaire. TischlerBise used this data to prepare persons per housing unit multipliers that vary by type of housing and number of bedrooms. Because the number of persons increases with the number of bedrooms, this approach may be used to make impact fees more “progressive” with higher impact fees imposed on larger housing units and lower impact fees on smaller, more affordable housing.

The tables below indicate persons per housing unit by type of housing and number of bedrooms. Results for Single Family housing are shown in Figure A2, with Figure A3 indicating average persons by bedroom range for All Other housing types. To minimize sample size problems, TischlerBise aggregated bedroom ranges.

Figure A2. Persons per Single Family Housing Unit by Bedroom Range

Single Family Dwellings
Boulder, Colorado

	<i>0-2 Bdrms</i>	<i>3 Bdrms</i>	<i>4 Bdrms</i>	<i>5+ Bdrms</i>	<i>Wt Avg</i>
Single Family	1.63	2.15	2.73	2.95	2.32

Source: Data for Colorado PUMA 00803 (includes SFD, SFA and MH)
2006 American Community Survey, Public Use Microdata Sample.

Figure A3. Average Persons by Bedroom Range for All Other Housing Types

All Other Dwellings
Boulder, Colorado

	<i>0-1 Bdrm</i>	<i>2 Bdrms</i>	<i>3+ Bdrms</i>	<i>Wt Avg</i>
2+ Units per Structure	1.20	1.79	2.46	1.62

*Source: Data for Colorado PUMA 00803 (all other housing types)
2006 American Community Survey, Public Use Microdata Sample.*

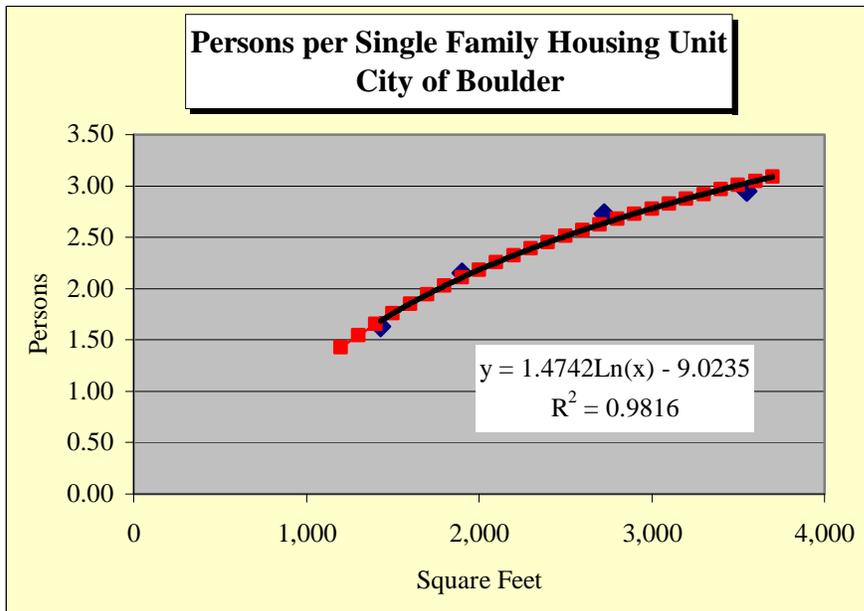
Using key variables from the County Assessor's parcel database, TischlerBise determined the average finished floor area by type of housing and bedroom range. For Single Family housing, average floor area and number of persons by bedroom range are plotted in Figure A4, with a logarithmic trend line derived from the four actual averages in the City of Boulder. Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons by size of Single Family housing, using 100 square foot intervals. For the purpose of impact fees in City of Boulder if the City wishes to assess fees by size of unit, TischlerBise recommends a minimum fee based on a Single Family unit size of 1,200 square feet and a maximum fee based on a Single Family unit size of 3,700 square feet of finished floor area.

Figure A4. Average Persons by Floor Area of Single Family Housing

Source: Persons by bedroom range from 2006 ACS PUMS. Finished square feet from Boulder County Assessor parcel database.

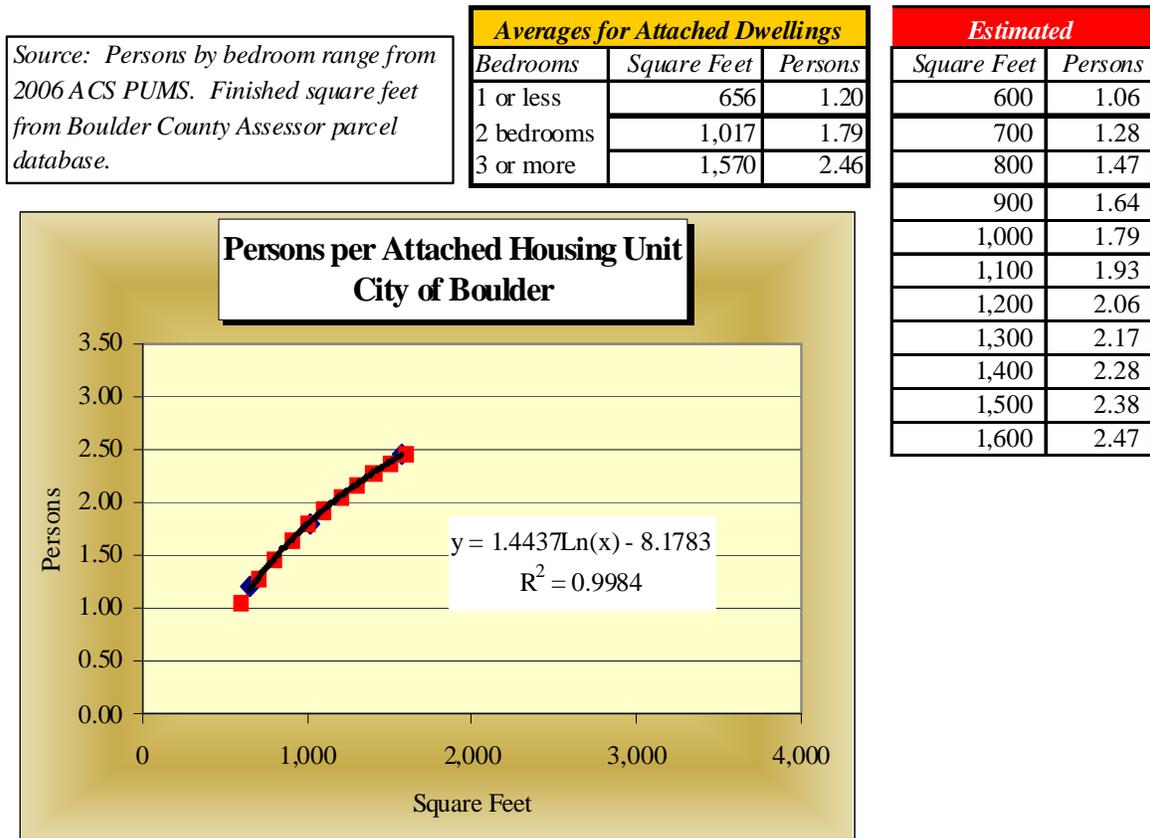
Single Family Averages		
Bedrooms	Square Feet	Persons
2 or less	1,428	1.63
3 bedrooms	1,903	2.15
4 bedrooms	2,724	2.73
5 or more	3,552	2.95

Estimated	
Square Feet	Persons
1,200	1.43
1,300	1.55
1,400	1.66
1,500	1.76
1,600	1.85
1,700	1.94
1,800	2.03
1,900	2.11
2,000	2.18
2,100	2.25
2,200	2.32
2,300	2.39
2,400	2.45
2,500	2.51
2,600	2.57
2,700	2.62
2,800	2.68
2,900	2.73
3,000	2.78
3,100	2.83
3,200	2.87
3,300	2.92
3,400	2.96
3,500	3.01
3,600	3.05
3,700	3.09



For All Other housing types, the average floor area and number of persons by bedroom range are plotted in Figure A5. A logarithmic trend line was determined from the three actual averages in the City of Boulder. Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons by unit size, using 100 square feet intervals. For All Other housing types, TischlerBise recommends a minimum fee based on a unit size of 600 square feet and a maximum fee based on a unit size of 1,600 square feet of finished floor area, if the City wishes to assess fees by size of unit.

Figure A5. Average Persons by Floor Area of Attached Housing



RECENT RESIDENTIAL CONSTRUCTION

Figure A6 indicates City of Boulder 2006 estimates for year-round residents and housing units. From 2000 to 2006, Boulder added an average of 308 housing units per year. The chart at the bottom of Figure A6 indicates the estimated number of housing units added by decade in City of Boulder. If the recent rate of housing construction continues, the first decade of the

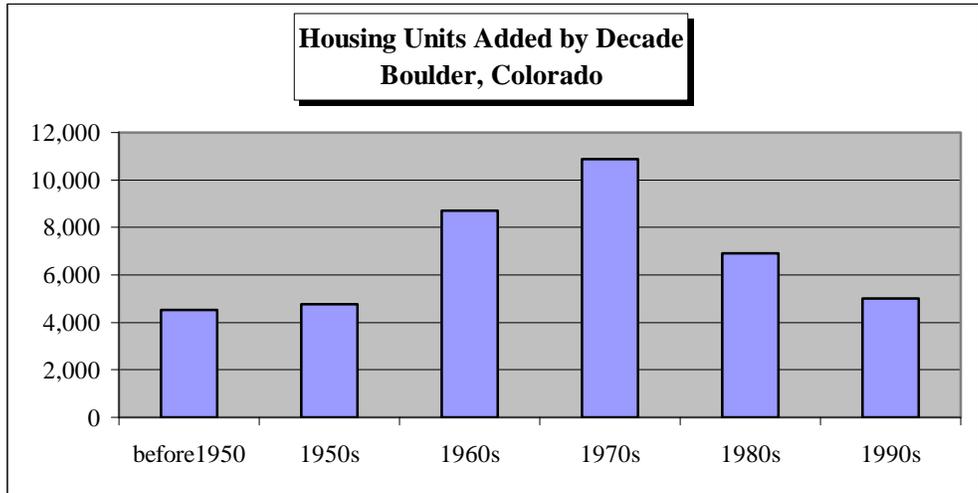
21st century will experience an increase of approximately 3,000 housing units, which is less than the number of housing units added during the 90s.

Figure A6. City of Boulder Housing Units and Population in 2006

Boulder, Colorado	
Estimated Population in 2006*	101,918
Housing Units 2000*	42,740
<i>New Housing Units 2000-2006</i>	<i>1,848</i>
Housing Units in 2006*	44,588

From 2000 to 2006, Boulder added approximately 308 housing units per year.

* City of Boulder estimates.



Source: Units by decade based on Table H34, SF3 Census 2000, U.S. Census Bureau.

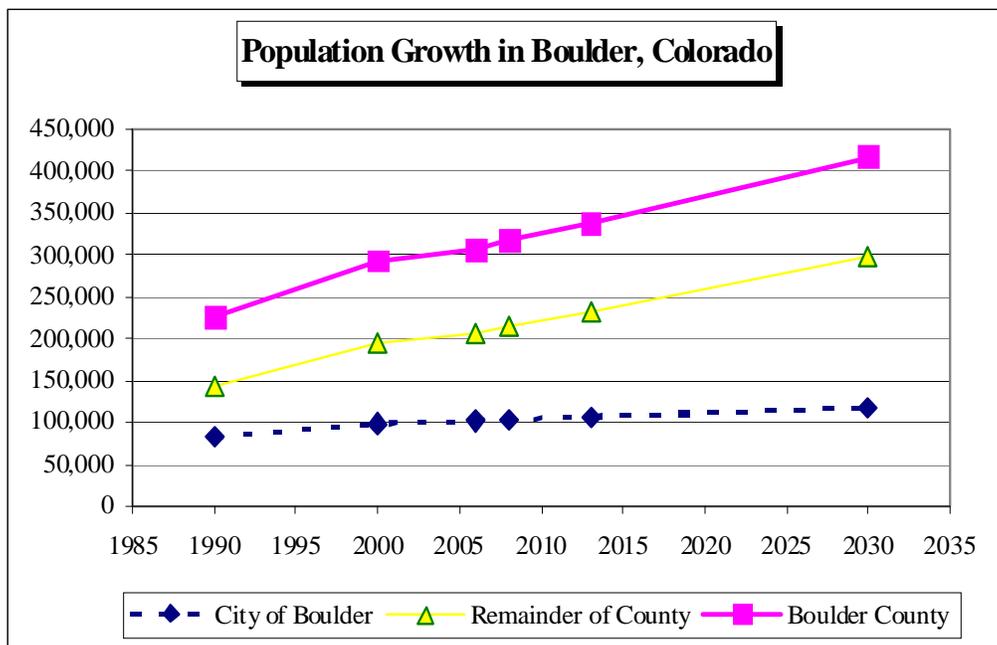
POPULATION PROJECTIONS

The impact fee study will use population and job projections as the key growth indicators, from which housing unit and nonresidential floor area data will be derived. According to the City’s 2008 Community Data Report, Boulder will be home to 118,500 residents by the year 2030 (Area I only). In that same year, Boulder County is expected to have a population of 417,517 (Woods & Poole Economics 2007). As shown in Figure A7, Boulder’s population share is expected to decrease from 33% of total county population in 2006, to 28% by the year 2030.

Figure A7. Population Growth in Boulder

	<i>1990</i>	<i>2000</i>	<i>2006</i>	<i>2008</i>	<i>2013</i>	<i>2030</i>
Boulder County	226,374	293,878	308,110	317,358	338,739	417,517
City of Boulder	83,312	99,093	101,918	103,100	106,414	118,500
Remainder of County	143,062	194,785	206,192	214,258	232,325	299,017
City of Boulder Share	37%	34%	33%	32%	31%	28%

Source: Boulder County from Woods & Poole Economics (2007). City of Boulder 1990 from U.S. Census Bureau; 2000 and 2006 estimates from City of Boulder. City of Boulder 2008 and 2030 (Area I) from 2008 Community Data Report.



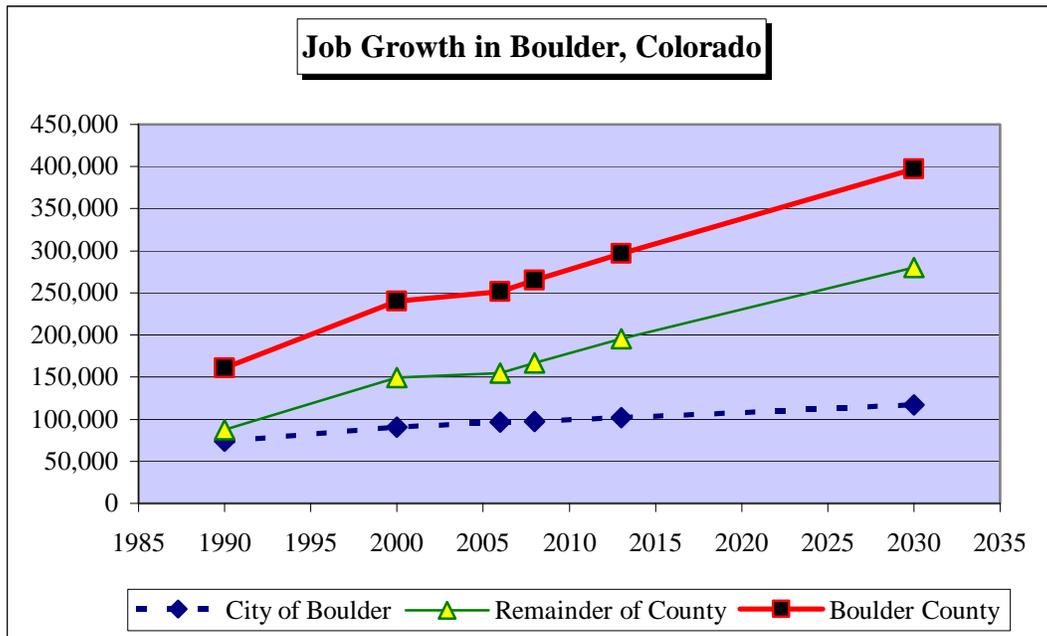
JOBS BY PLACE OF WORK

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. Similar to the above population share discussion, Boulder’s capture ratio of countywide jobs is shown in Figure A8. Boulder County job data were obtained from Woods & Poole Economics, Inc. (2007). Estimated jobs within the City of Boulder, in both 1990 and 2000, are from the Census Transportation Planning Package. Job projections from the 2008 Community Data Report indicate Boulder’s capture ratio decreases from 39% of countywide jobs in 2006 to 30% by the year 2030.

Figure A8. Job Growth in Boulder

	1990	2000	2006	2008	2013	2030
Boulder County	161,089	239,740	251,526	264,722	297,100	397,456
City of Boulder	73,650	90,255	96,968	97,750	101,905	117,400
Remainder of County	87,439	149,485	154,558	166,972	195,195	280,056
City of Boulder Share	46%	38%	39%	37%	34%	30%

Source: Boulder County from Woods & Poole Economics (2007) based on Bureau of Economic Analysis data. City of Boulder 1990 and 2000 from Census Transportation Planning Package. City of Boulder estimate for 2006. City of Boulder 2008 and 2030 (Area I) from 2008 Community Data Report.



NONRESIDENTIAL DEMAND INDICATORS

In the impact fee study, vehicle trips or employees per demand unit are used to differentiate fees by type of nonresidential development. In Figure A9, gray shading indicates the three nonresidential development prototypes used by TischlerBise to calculate vehicle trips and estimate potential impact fee revenue. The first prototype, for goods-producing jobs, is a warehouse with 784 square feet per employee. The second prototype, for retail and restaurant jobs, is a shopping center with 50,000 square feet of floor area. To more closely match Boulder's actual floor area determined by the County Assessor's parcel database, TischlerBise used Light Industrial as the prototype for Other Services.

Figure A9. Employee and Building Area Ratios

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit*	Wkdy Trip Ends Per Employee*	Emp Per Dmd Unit**	Sq Ft Per Emp
Commercial / Shopping Center						
821	25K gross leasable area	1,000 Sq Ft	110.32	na	3.33	300
820	50K gross leasable area	1,000 Sq Ft	86.56	na	2.86	350
820	100K gross leasable area	1,000 Sq Ft	67.91	na	2.50	400
820	200K gross leasable area	1,000 Sq Ft	53.28	na	2.22	450
820	400K gross leasable area	1,000 Sq Ft	41.80	na	2.00	500
General Office						
710	10K gross floor area	1,000 Sq Ft	22.66	5.06	4.48	223
710	25K gross floor area	1,000 Sq Ft	18.35	4.43	4.14	241
710	50K gross floor area	1,000 Sq Ft	15.65	4.00	3.91	256
710	100K gross floor area	1,000 Sq Ft	13.34	3.61	3.70	271
710	200K gross floor area	1,000 Sq Ft	11.37	3.26	3.49	287
Industrial						
770	Business Park***	1,000 Sq Ft	12.76	4.04	3.16	317
151	Mini-Warehouse	1,000 Sq Ft	2.50	56.28	0.04	22,512
150	Warehousing	1,000 Sq Ft	4.96	3.89	1.28	784
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
Other Nonresidential						
720	Medical-Dental Office	1,000 Sq Ft	36.13	8.91	4.05	247
620	Nursing Home	bed	2.37	6.55	0.36	na
610	Hospital	1,000 Sq Ft	17.57	5.20	3.38	296
565	Day Care	student	4.48	28.13	0.16	na
530	Secondary School	student	1.71	19.74	0.09	na
520	Elementary School	student	1.29	15.71	0.08	na
520	Elementary School	1,000 Sq Ft	14.49	15.71	0.92	1,084
320	Lodging	room	5.63	12.81	0.44	na

* Source: Trip Generation, Institute of Transportation Engineers (2003).

** Employees per demand unit calculated from trip rates, except for Shopping Center data, which are derived from Development Handbook and Dollars and Cents of Shopping Centers, published by the Urban Land Institute.

*** According to ITE, a Business Park is a group of flex-type buildings served by a common roadway system. The tenant space includes a variety of uses with an average mix of 20-30% office/commercial and 70-80% industrial/warehousing.

DEVELOPMENT PROJECTIONS

Key demographic data for the City of Boulder impact fee study are shown in Figure A10. Cumulative data are shown in the top section and annual increases at the bottom of the table. City of Boulder data shown with light green shading are from the 2008 Community Data

Report. Because of the recent downturn in development activity, TischlerBise used an exponential curve formula to derive interim year data between the 2008 and 2030 “end-points.” This method minimizes annual increases in the short run. Job allocation by nonresidential prototype is based on the most recent Labor Shed Area Profile Report from the U.S. Census Bureau’s website called Longitudinal Employer-Household Dynamics.

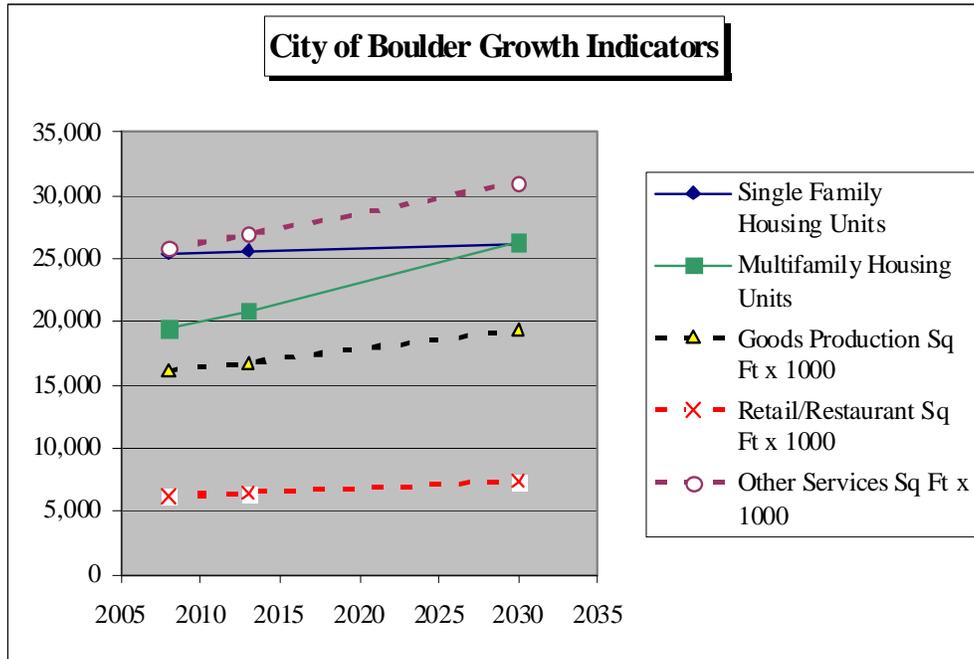
Figure A10. Citywide Demographic Data

	<i>Base Year</i>							
	2000	2008	2009	2010	2011	2012	2013	2030
<i>Cumulative</i>	<i>FY 08-09</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>22</i>	
Year-Round Population	99,093	103,100	103,754	104,413	105,076	105,743	106,414	118,500
Jobs	90,255	97,750	98,567	99,391	100,222	101,060	101,905	117,400
Housing Units	42,740	44,885	45,206	45,529	45,854	46,182	46,512	52,500
Single Family Hsg Units	23,080	25,445	25,477	25,509	25,542	25,575	25,608	26,206
All Other Hsg Units	19,660	19,440	19,729	20,020	20,313	20,608	20,905	26,294
Jobs to Housing Ratio		2.18	2.18	2.18	2.19	2.19	2.19	2.24
Persons per Hsg Unit		2.30	2.30	2.29	2.29	2.29	2.29	2.26
<u>Job Allocation by Type of Development</u>								
Goods Producing Share		21%	21%	21%	21%	21%	21%	21%
Retail/Restaurant Share		18%	18%	18%	18%	18%	18%	18%
Other Services Share		61%	61%	61%	61%	61%	61%	61%
<u>Nonres Sq Ft (x 1,000)</u>								
Goods Producing		16,090	16,230	16,360	16,500	16,640	16,780	19,330
Retail/Restaurant		6,160	6,210	6,260	6,310	6,370	6,420	7,400
Other Services		25,820	26,030	26,250	26,470	26,690	26,920	31,010
Total		48,070	48,470	48,870	49,280	49,700	50,120	57,740
Avg Sq Ft Per Job		492	492	492	492	492	492	492
								<i>2008 to 2030</i>
<u>Annual Increase</u>								<i>Increase</i>
Year-Round Population		654	659	663	667	671	676	15,400
Jobs		817	824	831	838	845	852	19,650
Housing Units		321	323	325	328	330	332	7,615
Goods Producing KSF*		140	130	140	140	140	140	3,240
Retail/Restaurant KSF*		50	50	50	60	50	50	1,240
Other Services KSF*		210	220	220	220	230	220	5,190
* KSF = square feet of floor area in thousands.								Cumulative KSF Increase =>
								Avg Anl KSF Increase =>
								440

Key land use assumptions for City of Boulder are summarized in Figure A11. Residential growth rates range from 0.1% annually for Single Family housing to 1.5% per year for Multifamily housing types. Nonresidential growth rates average 0.8% per year. Over the next five years, housing unit construction is projected to average 326 units per year.

Figure A11. Summary of Land Use Assumptions

Boulder, Colorado	2008	2013	2030	2008 to 2013	
	FY08-09	FY13-14	FY30-31	Average Annual	
				Increase	Growth Rate
Single Family Housing Units	25,445	25,608	26,206	33	0.1%
Multifamily Housing Units	19,440	20,905	26,294	293	1.5%
Goods Production Sq Ft x 1000	16,090	16,780	19,330	138	0.9%
Retail/Restaurant Sq Ft x 1000	6,160	6,420	7,400	52	0.8%
Other Services Sq Ft x 1000	25,820	26,920	31,010	220	0.9%



DEVELOPMENT IMPACT FEE STUDY

City of Boulder, Colorado



January 8, 2009

Prepared By:

TischlerBise
Fiscal, Economic & Planning Consultants

DEVELOPMENT IMPACT FEE STUDY

City of Boulder, Colorado

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EXECUTIVE SUMMARY

OVERVIEW

The City of Boulder retained TischlerBise to prepare an impact fee study for various infrastructure categories. This report updates the Development Excise Tax (DET) study prepared in 1996 when the firm was known as Tischler & Associates, Inc. Although the City currently has development excise taxes in place, it was the City's desire to have the current excise tax methodologies updated with an impact fee approach, thereby giving the City the option to adopt impact fees and/or revise the current development excise taxes.

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 Services
- 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. 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 **proportional** 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. All three methodologies are employed for the fees included in this study and are described further in this report in the respective fee chapter. 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

Type of Public Facility	Incremental Expansion	Plan Based	Cost Recovery	Cost Allocation
<i>Library</i>	▪ Collection Materials	Not applicable	▪ Library Space	100% Residential
<i>Parks and Recreation</i>	▪ Park Improvements ▪ Recreation Space ▪ Parks and Rec Admin & Support Facilities	Not applicable	Not applicable	100% Residential
<i>Human Services</i>	▪ Human Service Space	Not applicable	Not applicable	100% Residential
<i>Municipal Services</i>	▪ Government Space	Not applicable	Not applicable	Functional Population
<i>Police</i>	▪ Station Space	▪ Communications Center	Not applicable	Functional Population
<i>Fire</i>	▪ Stations ▪ Apparatus	Not applicable	Not applicable	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 included for Library, Parks and Recreation, and Human Services.

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.

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. Figures 2, 3, and 4 provide schedules of the *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.

Development excise taxes for single-family residential development are currently imposed by type of housing with no variation by size of unit. For comparison of the proposed impact fees with the current DET, the row with grey shading at the top of the following table indicates proposed impact fee amounts for the average size unit. The current DET amount and proposed increase per housing unit are on the right side of the table.

Figure 2. Summary of Maximum Allowable Impact Fees for Single Family Residential

		MAXIMUM ALLOWABLE IMPACT FEES								
		<i>Library</i>	<i>Parks & Recreation</i>	<i>Human Services</i>	<i>Municipal Facilities</i>	<i>Police</i>	<i>Fire</i>	<i>TOTAL</i>	Current DET	Proposed
									Less	Increase
									Transportation	
Single Family	Per Housing Unit	\$441	\$3,022	\$142	\$269	\$283	\$201	\$4,358	\$3,568.48	\$789.52
Average Size										
Square Feet										
900 or less		\$192	\$1,314	\$62	\$117	\$123	\$87	\$1,895		
1,000		\$222	\$1,524	\$72	\$135	\$143	\$101	\$2,197		
1,100		\$249	\$1,708	\$80	\$152	\$160	\$113	\$2,462		
1,200		\$274	\$1,877	\$88	\$167	\$176	\$124	\$2,706		
1,300		\$296	\$2,032	\$96	\$181	\$190	\$135	\$2,930		
1,400		\$317	\$2,175	\$102	\$193	\$204	\$144	\$3,135		
1,500		\$337	\$2,309	\$109	\$205	\$216	\$153	\$3,329		
1,600		\$355	\$2,434	\$115	\$217	\$228	\$161	\$3,510		
1,700		\$372	\$2,552	\$120	\$227	\$239	\$169	\$3,679		
1,800		\$389	\$2,662	\$125	\$237	\$249	\$177	\$3,839		
1,900		\$404	\$2,767	\$130	\$246	\$259	\$184	\$3,990		
2,000		\$418	\$2,866	\$135	\$255	\$269	\$190	\$4,133		
2,100		\$432	\$2,961	\$139	\$263	\$277	\$196	\$4,268		
2,200		\$445	\$3,051	\$144	\$272	\$286	\$202	\$4,400		
2,300		\$458	\$3,137	\$148	\$279	\$294	\$208	\$4,524		
2,400		\$470	\$3,220	\$152	\$287	\$302	\$214	\$4,645		
2,500		\$482	\$3,299	\$155	\$294	\$309	\$219	\$4,758		
2,600		\$493	\$3,375	\$159	\$300	\$316	\$224	\$4,867		
2,700		\$503	\$3,448	\$163	\$307	\$323	\$229	\$4,973		
2,800		\$514	\$3,518	\$166	\$313	\$330	\$234	\$5,075		
2,900		\$524	\$3,586	\$169	\$319	\$336	\$238	\$5,172		
3,000		\$533	\$3,652	\$172	\$325	\$342	\$242	\$5,266		
3,100		\$542	\$3,715	\$175	\$331	\$348	\$247	\$5,358		
3,200		\$551	\$3,777	\$178	\$336	\$354	\$251	\$5,447		
3,300		\$560	\$3,836	\$181	\$342	\$360	\$255	\$5,534		
3,400		\$569	\$3,894	\$184	\$347	\$365	\$259	\$5,618		
3,500		\$577	\$3,950	\$186	\$352	\$370	\$262	\$5,697		
3,600		\$585	\$4,005	\$189	\$357	\$375	\$266	\$5,777		
3,700		\$593	\$4,058	\$191	\$361	\$380	\$269	\$5,852		

Development excise taxes for multifamily residential development are currently imposed by type of housing with no variation by size of unit. For comparison of the proposed impact fees with the current DET, the row with grey shading at the top of the following table indicates proposed impact fee amounts for the average size unit. The current DET amount and proposed increase per housing unit are on the right side of the table.

Figure 3. Summary of Maximum Allowable Impact Fees for Multifamily Residential

MAXIMUM ALLOWABLE IMPACT FEES								Current DET Less Transportation	Proposed Increase	
<i>Library Parks & Human Municipal Police Fire TOTAL</i>										
<i>Recreation Services Facilities</i>										
<i>Multifamily</i>	<i>Per Housing Unit</i>							\$3,122	\$2,380.54	\$741.46
	<i>Average Size</i>	\$307	\$2,102	\$99	\$187	\$197	\$230			
<i>Square Feet</i>										
	600	\$202	\$1,388	\$65	\$123	\$130	\$151	\$2,059		
	700	\$245	\$1,681	\$79	\$149	\$157	\$183	\$2,494		
	800	\$282	\$1,934	\$91	\$172	\$181	\$211	\$2,871		
	900	\$315	\$2,158	\$102	\$192	\$202	\$236	\$3,205		
	1,000	\$344	\$2,357	\$111	\$210	\$221	\$257	\$3,500		
	1,100	\$370	\$2,538	\$120	\$226	\$238	\$277	\$3,769		
	1,200	\$395	\$2,703	\$127	\$241	\$253	\$295	\$4,014		
	1,300	\$417	\$2,855	\$134	\$254	\$267	\$312	\$4,239		
	1,400	\$437	\$2,996	\$141	\$267	\$281	\$327	\$4,449		
	1,500	\$456	\$3,127	\$147	\$278	\$293	\$342	\$4,643		
	1,600	\$474	\$3,249	\$153	\$289	\$304	\$355	\$4,824		

Currently, development excise taxes for nonresidential development are imposed per square foot of floor area with no variation by type of development. To make the proposed impact fees proportionate to the demand for infrastructure, TischlerBise used trip generation rates or jobs per demand unit to vary the impact fees by type of development. With this change in methodology, proposed fee amounts for retail and office development will increase. As shown in Figure 4, proposed impact fees for and industrial and warehouse development are less than the current development excise taxes.

Figure 4. Summary of Maximum Allowable Impact Fees for Nonresidential

ITE Code	Maximum Allowable Impact Fees				Current DET Less Transportation	Proposed Increase (Decrease)	
	Municipal Facilities	Police	Fire	TOTAL			
<i>Nonresidential (per Square Foot of Floor Area)</i>							
820	Retail / Restaurant	\$0.13	\$0.44	\$0.35	\$0.92	\$0.686	\$0.23
770	Business Park	\$0.15	\$0.10	\$0.09	\$0.34	\$0.686	(\$0.35)
710	Office	\$0.18	\$0.15	\$0.52	\$0.85	\$0.686	\$0.16
610	Hospital	\$0.16	\$0.14	\$0.45	\$0.75	\$0.686	\$0.06
520	School	\$0.04	\$0.07	\$0.12	\$0.23	\$0.686	(\$0.46)
151	Mini-Warehouse	\$0.00	\$0.02	\$0.00	\$0.02	\$0.686	(\$0.67)
150	Warehousing	\$0.06	\$0.04	\$0.04	\$0.14	\$0.686	(\$0.55)
110	Light Industrial	\$0.11	\$0.05	\$0.07	\$0.23	\$0.686	(\$0.46)
<i>Other Nonresidential (per unique demand indicator)</i>							
620	Nursing Home (per bed)	\$17	\$19	\$48	\$84		
565	Day Care (per student)	\$7	\$17	\$21	\$45		
320	Lodging (per room)	\$21	\$47	\$59	\$127		

INTRODUCTION TO IMPACT FEES

DEFINITION

Impact fees, also known as development or development impact fees, are one-time payments used to fund capital improvements necessitated by new growth. Impact fees have been utilized by local governments in various forms for at least fifty years. Impact fees do have limitations, and should not be regarded as the total solution for infrastructure financing needs. Rather, they should be considered one component of a comprehensive portfolio to ensure adequate provision of public facilities with the goal of maintaining current levels of service in a community. Any community considering impact fees should note the following limitations:

- Impact fees can only be used to finance capital infrastructure and cannot be used to finance ongoing operations and/or maintenance costs;
- Impact fees cannot be deposited in the local government's General Fund. The funds must be accounted for separately in individual accounts and earmarked for the capital expenses for which they were collected; and
- Impact fees cannot be used to correct existing infrastructure deficiencies unless there is a funding plan in place to correct the deficiency for all current residents and businesses in the community.

LEGAL FRAMEWORK

U.S. Constitution. Like all land use regulations, development exactions—including impact fees—are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. Both state and federal courts have recognized the imposition of impact fees on development as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is in the protection of public health, safety, and welfare by ensuring that development is not detrimental to the quality of essential public services.

There is little federal case law specifically dealing with impact fees, although other rulings on other types of exactions (e.g., land dedication requirements) are relevant. In one of the most important exaction cases, the U. S. Supreme Court found that a government agency imposing

exactions on development must demonstrate an “essential nexus” between the exaction and the interest being protected (see *Nollan v. California Coastal Commission*, 1987). In a more recent case (*Dolan v. City of Tigard, OR*, 1994), the Court ruled that an exaction also must be “roughly proportional” to the burden created by development. However, the *Dolan* decision appeared to set a higher standard of review for mandatory dedications of land than for monetary exactions such as impact fees.

FINDINGS

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

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

Demonstrating a Benefit. A sufficient benefit relationship requires that facility fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. Fees must be expended in a timely manner and the facilities funded by the fees must serve the development paying the fees. However, nothing in the U.S. Constitution or the State enabling legislation requires that facilities funded with fee revenues be available *exclusively* to development paying the fees. In other words, existing development may benefit from these improvements as well.

Procedures for the earmarking and expenditure of fee revenues are typically mandated by the State enabling act, as are procedures to ensure that the fees are expended expeditiously or refunded. All of these requirements are intended to ensure that developments benefit from the fees they are required to pay. Thus, an adequate showing of benefit must address procedural as well as substantive issues.

Demonstrating Proportionality. The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the *Dolan* case (although the relevance of that decision to impact fees has been debated) and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate impact fees for various types of facilities and categories of development. The demand for facilities is measured in terms of relevant and measurable attributes of development. For example, the need for school improvements is measured by the number of public school-age children generated by development.

METHODOLOGIES AND CREDITS

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

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

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

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

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

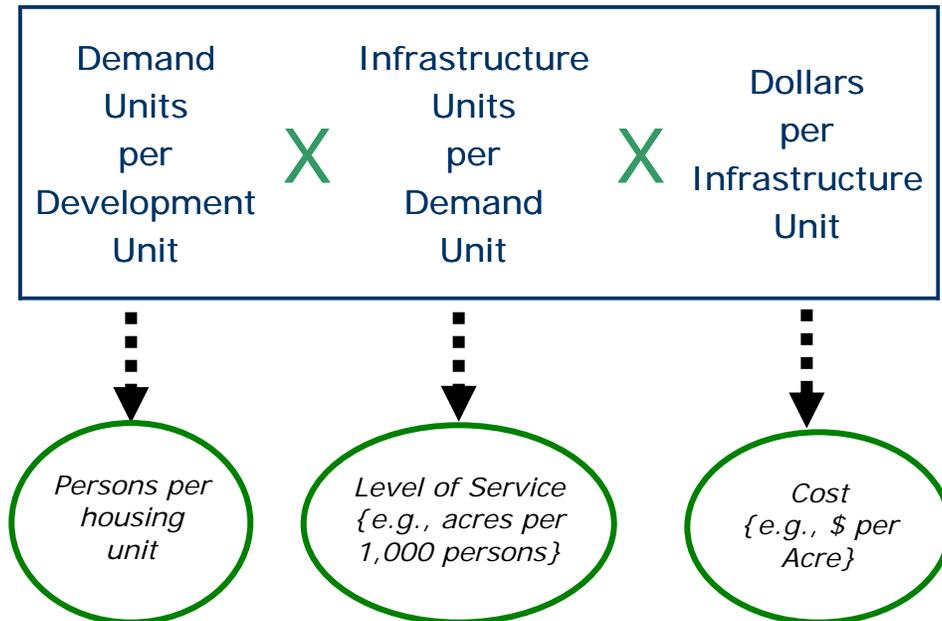
Credits. Regardless of the methodology, a consideration of “credits” is integral to the development of a legally valid impact fee methodology. There are two types of “credits” each with specific, distinct characteristics, but both of which should be addressed in the development of impact fees. The first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

CONCEPTUAL IMPACT FEE FORMULA

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 even the entire jurisdiction. The basic steps in a generic impact fee formula are illustrated in Figure 5. 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 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 park development.

Figure 5. General Impact Fee Steps

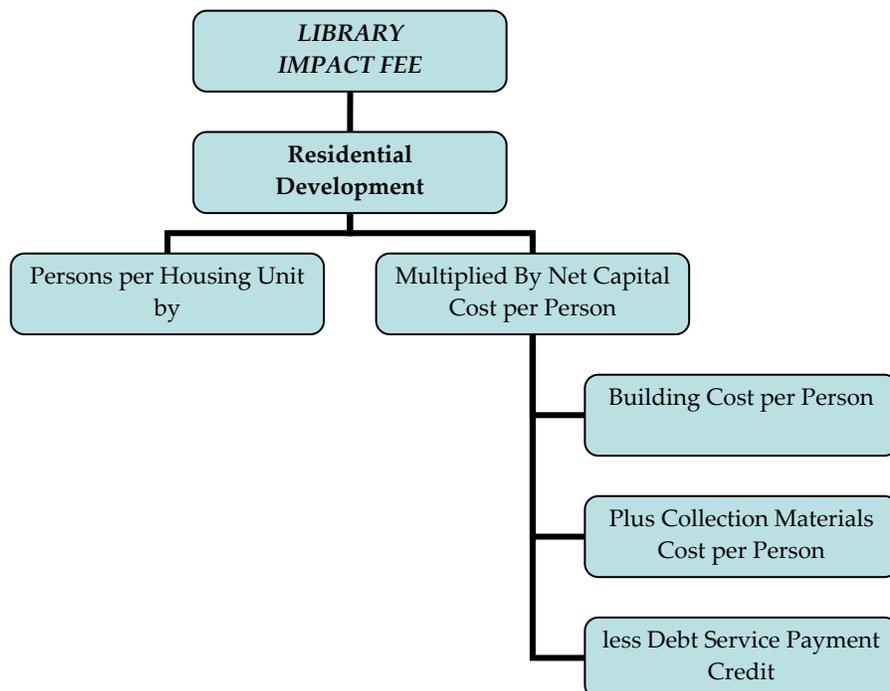


LIBRARY IMPACT FEES

METHODOLOGY

The Library impact fee calculation uses the cost recovery and incremental expansion methodologies. 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 three branch locations, which are anticipated to serve new development for the foreseeable future. A cost recovery approach is used to calculate new growth's fair share of the City's costs for this facility. *However, since the City has only three years remaining on debt service payments for the most recent library capacity expansion, TischlerBise recommends that the cost recovery component for Library space be eliminated once this debt is retired. If at some point in the future the City decides to construct an additional branch or expand existing facilities, the impact fee methodology and amount should be revised to reflect this change.* An incremental approach is used for collection materials. All costs are allocated 100 percent to residential development. Figure 6 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 6. Library Impact Fee Methodology Chart



LIBRARY LEVEL OF SERVICE STANDARDS AND COSTS***Library Building Cost Recovery Component***

The City of Boulder Library System consists of a Main Library and three branch locations. Total library system square footage totals 113,614 square feet. As noted above, at this time the City does not anticipate expanding the Library System. Because the Library System currently has remaining capacity, levels of service are based on projected population in 2030, per discussions with the City. Costs are based on current City replacement values using a cost recovery methodology where new development is buying into remaining capacity of existing facilities.

Figure 7 provides levels of service and costs for the City of Boulder Library System. According to information provided by the City, the Library System has an asset value of \$18,682,862 reflecting facilities owned by the City. When this is compared to the projected population in 2030 (118,500), the cost per demand unit is \$157 per person.

Figure 7. Library Level of Service Standards and Cost Factors

<i>Buildings</i>	<i>Square Feet</i>	<i>Cost/SF*</i>	<i>Current Value</i>
Main Library	92,164	\$183	\$16,866,012
Meadows Branch	7,800	leased	
Reynolds Branch	9,650	\$129	\$1,244,850
Carnegie Branch	4,000	\$143	\$572,000
TOTAL	113,614		\$18,682,862
	Projected Population in 2030		118,500
	Cost per Person		\$157

* City of Boulder Property Schedule, January 2008.

Library Collection Materials Incremental Expansion

The Library System's collection includes adult and juvenile books, electronic/audio books, music, videos, and periodicals. The total number of current units is 364,931 with a total replacement value of approximately \$6.6 million. Based on the current estimated City population of 103,100, this equates to a level of service of \$63 per person. Figure 8 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 8. Library Collection Materials Level of Service Standards

<i>Collection Materials</i>	<i># of units</i>	<i>Unit Price**</i>	<i>Current Value</i>
Books	292,959	\$16	\$4,687,000
Electronic/Audio Books	44,553	\$34	\$1,515,000
Music CDs	13,978	\$12	\$168,000
Videos	12,754	\$13	\$166,000
Periodicals	687	\$60	\$41,000
TOTAL	364,931		\$6,577,000
	Projected Population in 2008		103,100
	Cost per Person		\$63

** City of Boulder Library Staff.

CREDIT EVALUATION

As discussed previously, the City has outstanding debt for Library improvements that will be retired through property taxes. Because of this, TischlerBise recommends that a credit be included in the impact fee for future debt service payments on this General Obligation debt. New residential development in the City of Boulder that will pay Library impact fees will also contribute to future debt service payments paid from property tax revenue, therefore a credit is necessary.

City staff provided debt service schedules for the current outstanding Library debt. To account for the time value of money, annual principal payments per capita are discounted using a net present value formula based on an estimated average interest rate. Figure 9 shows the credit calculation based on the projected debt service payments starting in fiscal year 2009 through the remainder of the bond's term. The debt is allocated 100 percent to residential development. The applicable net present value of the credit is \$28 per person. This will be subtracted from the gross capital cost per demand unit to derive a net capital cost per person in calculating the maximum supportable fee.

Figure 9. Credit for Future Library Debt Service Payments

<i>Year</i>	<i>Total Principal and Interest</i>	<i>Population</i>	<i>Debt Payment Per Capita</i>
2009	\$1,079,000	103,754	\$10.40
2010	\$1,074,000	104,413	\$10.29
2011	\$1,073,000	105,076	\$10.21
		Discount APR	6%
		Present Value	\$28

SUMMARY OF FACTORS FOR LIBRARY IMPACT FEE

Infrastructure standards used to calculate the Library impact fees are shown in the boxed area of Figure 10. Impact fees for Libraries are based on household size for two types of residential units: single-family units (includes single family detached, single family attached, and manufactured homes) and all other units. 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 debt service payment credit (\$28) is then subtracted from the gross capital cost per person to determine the net capital cost per person for residential development (i.e., \$192 per person).

Figure 10. Library Impact Fee Level-of-Service Standard Summary

<i>Standards:</i>	
<i>Persons Per Housing Unit</i>	
Single Family (SFD, SFA & MH)	2.3
All Other Types	1.6
<i>Level Of Service</i>	<u>Per Person</u>
Building Cost	\$157
Collection Cost	\$63
Debt Service Credit	(\$28)
Net Capital Cost	\$192

MAXIMUM ALLOWABLE IMPACT FEES FOR LIBRARIES

Figure 11 shows the schedule of maximum allowable impact fees for Libraries in Boulder. The amounts are calculated by multiplying the persons per housing unit for each unit type and size by the net capital cost per person. For example, for the average single family unit, the persons per housing unit of 2.3 is multiplied by the net capital cost of \$192 (from the previous table) for an impact fee amount of \$441 per single family housing unit and \$307 per unit for all other types of units. Number of persons by square feet of finished floor area is discussed further in the Appendix.

Figure 11. Library Maximum Allowable Impact Fees

<i>Square Feet</i> (finished floor area)	<i>Persons per Housing Unit</i>		<i>Impact Fee per Housing Unit</i>	
	<i>Single Family</i> (SFD, SFA & MH)	<i>All Other</i> <i>Types</i>	<i>Single Family</i> (SFD, SFA & MH)	<i>All Other</i> <i>Types</i>
Wt Avg	2.30	1.60	\$441	\$307
600	1.00	1.06	\$192	\$202
700	1.00	1.28	\$192	\$245
800	1.00	1.47	\$192	\$282
900	1.00	1.64	\$192	\$315
1,000	1.16	1.79	\$222	\$344
1,100	1.30	1.93	\$249	\$370
1,200	1.43	2.06	\$274	\$395
1,300	1.55	2.17	\$296	\$417
1,400	1.66	2.28	\$317	\$437
1,500	1.76	2.38	\$337	\$456
1,600	1.85	2.47	\$355	\$474
1,700	1.94		\$372	
1,800	2.03		\$389	
1,900	2.11		\$404	
2,000	2.18		\$418	
2,100	2.25		\$432	
2,200	2.32		\$445	
2,300	2.39		\$458	
2,400	2.45		\$470	
2,500	2.51		\$482	
2,600	2.57		\$493	
2,700	2.62		\$503	
2,800	2.68		\$514	
2,900	2.73		\$524	
3,000	2.78		\$533	
3,100	2.83		\$542	
3,200	2.87		\$551	
3,300	2.92		\$560	
3,400	2.96		\$569	
3,500	3.01		\$577	
3,600	3.05		\$585	
3,700	3.09		\$593	

PARKS AND RECREATION IMPACT FEES

METHODOLOGY

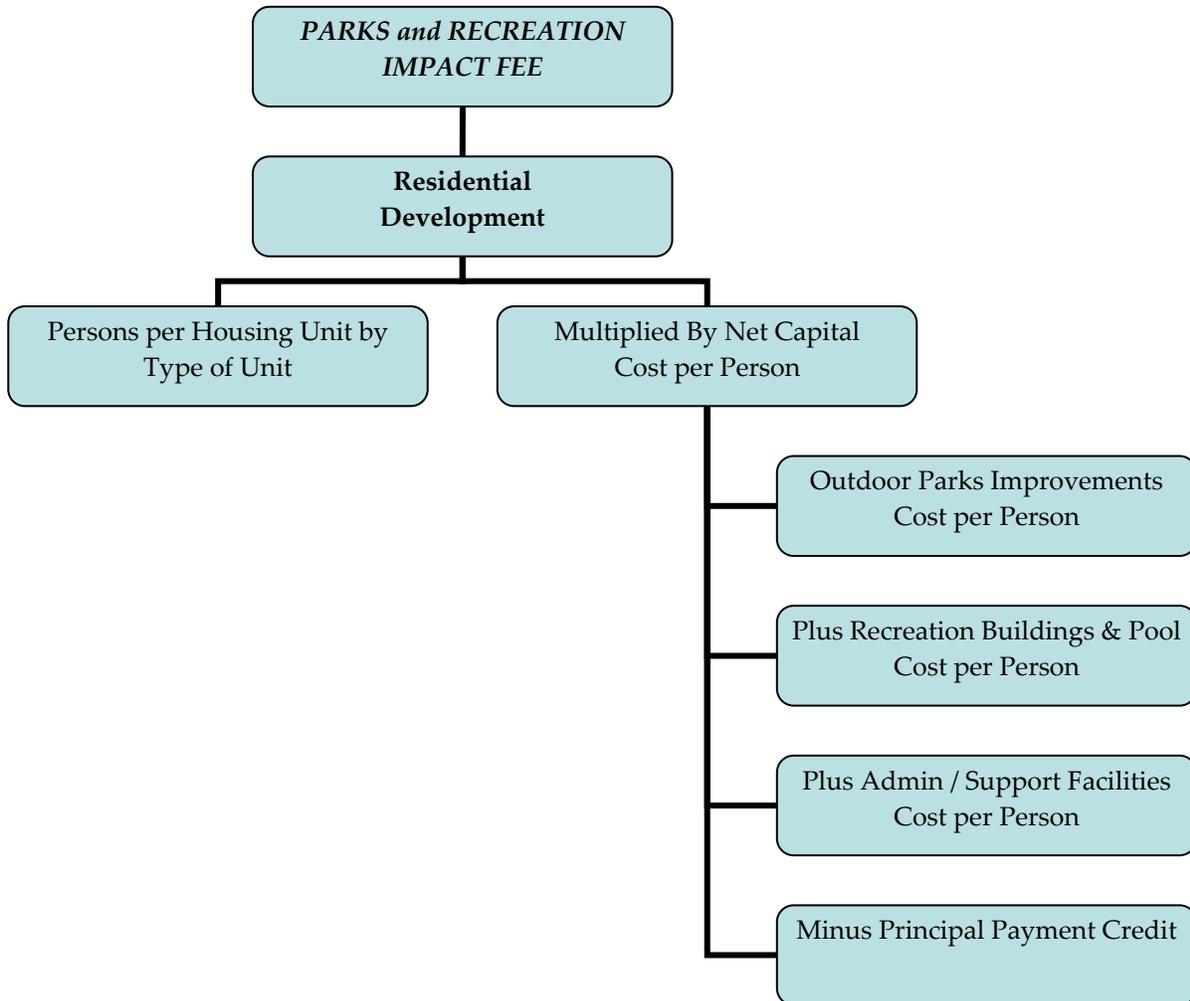
The City of Boulder Parks and Recreation Impact Fee is derived using an incremental expansion methodology. Parks and Recreation impact fees should only be assessed on residential development. Three main components are included in the fee calculation: Outdoor Park Improvements, Recreation Facilities and 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 patrons throughout Boulder. Additional land for parks is not included because the City has an inventory of parkland on which it intends to make improvements with impact fees. According to the 2006 Master Plan for Parks and Recreation, the system's current park acreage exceeds the department's guidelines established for park acreage per 1,000 residents, as well as meets the guidelines for Boulder's projected population at build-out.¹ Therefore, land is not included as a fee component.

Also included in the fee calculation are 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. Finally, Parks and Recreation Administrative / Support Facilities are included. 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 12 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 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.

¹ *Parks and Recreation Master Plan, 2006* (p. 23)

Figure 12. 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 City, 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 neighborhood parks smaller than East Mapleton (i.e. less than 7.6 acres) are excluded from the impact fees. Figure 13 provides an inventory of Outdoor Park improvements with current unit prices. Park improvements have an average cost of approximately \$272,000 per acre, which falls within the 2006 Park Master Plan's range of estimated costs for park improvements (see page 20). On a per capita basis, park improvements cost \$1,003 for each additional resident in Boulder. City staff provided unit prices for each type of improvement. Miscellaneous costs equal \$220,000 per acre, which include such items as lighting, paving (parking lots, sidewalks), site work, irrigation, and landscaping.

Figure 13. Outdoor Park Improvements Level of Service Standards and Cost Factors

Site	Improved Acres	Public Restroom	Playground	Tennis or Basketball	Ballfields	Multiuse Fields*	Soccer Fields**
Foothills Community Park	65.5	1	3		2	2	
East Boulder Community Park	53.6		1	2	2	2	
Pleasantview	52.0	1					9
Harlow Platts Community Park	50.5		1	4		2	
Gerald Stazio	42.0	3	1		7		
Scott Carpenter	16.8	1	1		1		
Tantra	16.8		1				
Chautauqua	14.8	1	1	1			
Valmont City Park	13.0						1
North Boulder	12.5	1	1		1		1
Park East	11.3		1	1			
Martin	8.3	1	1	2	1		1
Elks	7.9				1		
Crestview	7.7		1				
East Mapleton Ballfields	7.6	1	1		3		
TOTAL	380.3	10.0	14.0	10.0	18.0	9.0	9.0
Unit Price =>		\$235,000	\$300,000	\$60,000	\$285,000	\$90,000	\$750,000
Current Value =>		\$2,350,000	\$4,200,000	\$600,000	\$5,130,000	\$810,000	\$6,750,000

Itemized Improvements	\$19,840,000
Other Site Improvements***	\$83,666,000
Total Improvements	\$103,506,000
Improvements Cost per Acre	\$272,000
Population in 2008	103,100
Improvements Cost per Person	\$1,003

* Fields are an average of 1.5 acres and are open, unlined, and unprogrammed

** Soccer fields are high quality, sand-based turf fields and MLS sized.

*** Estimated @ \$220,000 per acre for irrigation, landscaping, parking, and minor improvements (see page 20 Parks and Recreation Master Plan, 2006).

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 14, total square footage for the City's recreational facilities is 162,695 square feet. The incremental expansion approach is used as the City plans to maintain the current level of service to accommodate new development. Total estimated current value of these facilities is approximately \$29.6 million, or \$286 for each additional resident in Boulder.

Figure 14. Recreation Buildings and Pools Level of Service Standards and Cost Factors

Facility#	Facility Name	Address	Bldg Sq Ft	Total Location Value*
055	East Boulder Recreation Ctr (77% of total)**	5660 SIOUX DR	42,648	\$ 6,383,404
054	North Boulder Recreation Center	3170 BROADWAY	62,166	\$ 8,268,808
053	South Boulder Recreation Center	1350 GILLASPIE	35,603	\$ 5,746,072
512	Scott Carpenter Pool	30th & Arapahoe		\$ 3,026,055
061 A	SCOTT CARPENTER LOCKER ROOMS	30TH & ARAPAHOE	5,886	\$ 856,078
061 B	SCOTT CARPENTER PARK FILTER BUILDING	30TH & ARAPAHOE	500	\$ 76,693
514	SPRUCE POOL	2040 21ST STREET		\$ 1,209,246
062	Spruce Pool Bath House/Filter	2102 Spruce Street	1,810	\$ 278,478
038	Salberg Studio	19TH & ELDER	1,125	\$ 98,979
060	Pottery Lab	1010 AURORA	2,565	\$ 295,648
063	BOULDER RESERVOIR (all bldgs)	5152 NORTH 51ST	9,742	\$ 1,666,142
TOTAL			162,045	\$ 29,571,744

Population in 2008 103,100

Cost per Person \$286

* Source: City Property Schedule (2008) for building and contents.

** 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 15, total square footage for the City's Parks and Recreation support facilities is 66,143 square feet. The incremental expansion approach is used as the City plans to maintain the current level of service to accommodate new development. Total estimated current value of these facilities is approximately \$4.2 million. These factors yield a cost of \$41 to accommodate each additional resident in Boulder.

Figure 15. Administrative and Support Facilities Level of Service Standards and Cost Factors

Facility#	Facility Name	Address	Bldg Sq Ft	Total Location Value*
004	Iris Center	3198 BROADWAY	16,372	\$ 1,817,388
042	Park Operations Building	5200 PEARL ST	10,073	\$ 955,016
040	Tantra Park Maintenance Shop	585 TANTRA DR	3,062	\$ 265,225
059	Stazio Ballfields Maintenance Shop	2445 Stazio Drive	5,150	\$ 333,324
061 E	SCOTT CARPENTER ATHLETICS OFFICE	30TH & ARAPAHOE	1,052	\$ 125,309
243	Valmont Storage Building	5325 Valmont	30,434	\$ 733,890
TOTAL			66,143	\$ 4,230,151

Population in 2008 103,100

Cost per Person \$41

* Source: City Property Schedule (2008)

CREDIT EVALUATION

The City has outstanding debt for parks and recreation improvements, namely for the East Boulder Recreation Center, that will be retired through property taxes. Because of this, TischlerBise recommends that a credit be included in the impact fee for future principal payments on this General Obligation debt. New residential development in the City of Boulder that will pay Parks impact fees will also contribute to future principal payment from property tax revenue.

City staff provided the amount of current outstanding Parks and Recreation debt. To account for the time value of money, annual principal payments per capita are discounted using a net present value formula based on an estimated average interest rate. Figure 16 shows the credit calculation based on the projected principal and interest payments starting in fiscal year 2009 through the remainder of the bonds' term. The debt is allocated 100 percent to residential development. The applicable net present value of the credit is \$16 per person. This will be subtracted from the gross capital cost per demand unit to derive a net capital cost per person in calculating the maximum supportable fee.

Figure 16. Credit for Future Principal Payments on Parks and Recreation Debt

Year	E Bldr Center	Total Principal and Interest*	Population	Debt Payment Per Capita
2009	\$602,000	\$463,540	103,754	\$4.47
2010	\$602,000	\$463,540	104,413	\$4.44
2011	\$602,000	\$463,540	105,076	\$4.41
2012	\$602,000	\$463,540	105,743	\$4.38
			Discount APR	6%
			Present Value	\$16

* Recreation Ctr portion of debt is 77% of total; remainder is Senior Center (in Human Services)

SUMMARY OF FACTORS FOR PARKS AND RECREATION IMPACT FEE

Infrastructure standards used to calculate the Park and Recreation impact fees are shown in Figure 17. Impact fees for Parks and Recreation are based on household size for two types of residential units: single-family units (includes single family detached, single family attached, and manufactured homes) and all other units. Level of service standards are based on current costs per person for Outdoor Park improvements, Recreation Buildings and Pools, and Administrative and Support Facilities, as described in the previous sections. Each cost component of the impact fee is shown as a cost per person. The debt service payment credit (\$16) is then subtracted from the gross capital cost per person to determine the net capital cost per person for residential development (i.e., \$1,314 per person).

Figure 17. Parks and Recreation Impact Fee Level-of-Service Standard Summary

<i>Standards:</i>	
Persons Per Housing Unit	
Single Family (SFD, SFA & MH)	2.3
All Other Types	1.6
Level Of Service	<u>Per Person</u>
Outdoor Park Improvements	\$1,003
Recreation Buildings & Pools	\$286
Support Facilities	\$41
Credit for Existing Debt	(\$16)
Net Capital Cost	\$1,314

MAXIMUM ALLOWABLE IMPACT FEES FOR PARKS AND RECREATION

Figure 18 shows the schedule of maximum allowable impact fees for Parks and Recreation in Boulder. The amounts are calculated by multiplying the persons per housing unit for each unit type and size by the net capital cost per person. For example, the average single family unit with 2.3 persons, multiplied by the net capital cost of \$1,314 (from the previous table), yields an impact fee of \$3,022 per single family housing unit. Number of persons by square feet of finished floor area is discussed further in the Appendix.

Figure 18. Parks and Recreation Maximum Allowable Impact Fees

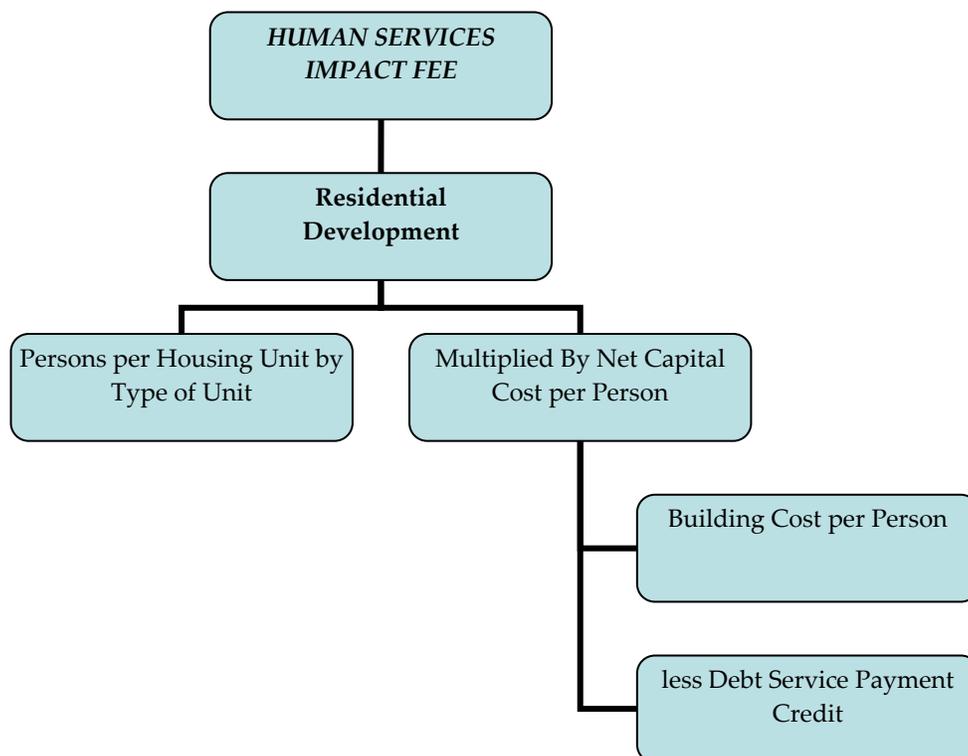
<i>Square Feet</i> (finished floor area)	<i>Persons per Housing Unit</i>		<i>Impact Fee per Housing Unit</i>	
	<i>Single Family</i> (SFD, SFA & MH)	<i>All Other</i> <i>Types</i>	<i>Single Family</i> (SFD, SFA & MH)	<i>All Other</i> <i>Types</i>
Wt Avg	2.30	1.60	\$3,022	\$2,102
600	1.00	1.06	\$1,314	\$1,388
700	1.00	1.28	\$1,314	\$1,681
800	1.00	1.47	\$1,314	\$1,934
900	1.00	1.64	\$1,314	\$2,158
1,000	1.16	1.79	\$1,524	\$2,357
1,100	1.30	1.93	\$1,708	\$2,538
1,200	1.43	2.06	\$1,877	\$2,703
1,300	1.55	2.17	\$2,032	\$2,855
1,400	1.66	2.28	\$2,175	\$2,996
1,500	1.76	2.38	\$2,309	\$3,127
1,600	1.85	2.47	\$2,434	\$3,249
1,700	1.94		\$2,552	
1,800	2.03		\$2,662	
1,900	2.11		\$2,767	
2,000	2.18		\$2,866	
2,100	2.25		\$2,961	
2,200	2.32		\$3,051	
2,300	2.39		\$3,137	
2,400	2.45		\$3,220	
2,500	2.51		\$3,299	
2,600	2.57		\$3,375	
2,700	2.62		\$3,448	
2,800	2.68		\$3,518	
2,900	2.73		\$3,586	
3,000	2.78		\$3,652	
3,100	2.83		\$3,715	
3,200	2.87		\$3,777	
3,300	2.92		\$3,836	
3,400	2.96		\$3,894	
3,500	3.01		\$3,950	
3,600	3.05		\$4,005	
3,700	3.09		\$4,058	

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 19 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 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 19. 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 20 lists the current inventory of Human Services space in the City of Boulder. As shown, the City currently has Human Services space totaling 33,842 square feet. The current value for Human Services buildings and contents is from the City's 2008 Property Schedule. Because the City anticipates having to acquire land in the future to expand Human Services facilities, land and site improvement costs are included in the current costs shown. City staff estimates that 40 percent should be added to building costs to account for land and site improvement, raising the current value to approximately \$6.9 million. To derive the cost per demand unit, the current asset value is divided by the current City population (103,100), for a cost per demand units of \$66.71 per person.

Figure 20. Human Services Level of Service Standards and Cost Factors

<i>Building</i>	<i>Square Feet*</i>	<i>Cost/SF*</i>	<i>Current Value</i>
West Senior Center	16,188	\$199	\$3,218,000
Children, Youth & Family Center	5,215	\$214	\$1,117,000
East Senior Center	12,439	\$204	\$2,543,000
TOTAL	33,842		\$6,878,000
	Year-round Population in 2008		103,100
	Cost per Person		\$66.71

* Source: City Property Schedule (2008) for building and contents;
land and site improvements are included (additional 40% over building cost, per City of Boulder)

CREDIT EVALUATION

As discussed previously, the City has outstanding debt for Human Services improvements that will be retired through property taxes. Because of this, TischlerBise recommends that a credit be included in the impact fee for future debt service payments on this General Obligation debt. New residential development in the City of Boulder that will pay Human Services impact fees will also contribute to future debt service payments paid from property tax revenue.

City staff provided debt service schedules for the current outstanding Human Services debt. To account for the time value of money, annual principal payments per capita are discounted using a net present value formula based on an estimated average interest rate. Figure 21 shows the credit calculation based on the projected debt service payments starting in fiscal year 2009 through the remainder of the bond's term. The debt is allocated 100 percent to residential development. The applicable net present value of the credit is \$4.59 per person. This will be subtracted from the gross capital cost per demand unit to derive a net capital cost per person in calculating the maximum supportable fee.

Figure 21. Credit for Outstanding Human Services Debt Service Payments

<i>Year</i>	<i>E Bldr Center</i>	<i>Total Principal and Interest*</i>	<i>Population</i>	<i>Debt Payment Per Capita</i>
2009	\$602,000	\$138,460	103,754	\$1.33
2010	\$602,000	\$138,460	104,413	\$1.33
2011	\$602,000	\$138,460	105,076	\$1.32
2012	\$602,000	\$138,460	105,743	\$1.31
Discount APR				6%
Present Value				\$4.59

* Senior Center portion of debt is 23% of total; remainder is Recreation

SUMMARY OF FACTORS FOR HUMAN SERVICES IMPACT FEE

Infrastructure standards used to calculate the Human Services impact fees are shown in the boxed area of Figure 22. Impact fees for Human Services are based on household size for two types of residential units: single-family units (includes single family detached, single family attached, and manufactured homes) and all other units. Level of service standards are based on current 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 total capital cost per person is the sum of the boxed items on the figure for buildings and collections materials. As shown, the debt service payment credit (\$4.59) is then subtracted from the gross capital cost per person to determine the net capital cost per person for residential development (i.e., \$62.12 per person).

Figure 22. Human Services Impact Fee Level-of-Service Standard Summary

<i>Standards:</i>	
<i>Persons Per Housing Unit</i>	
Single Family (SFD, SFA & MH)	2.3
All Other Types	1.6
<i>Level Of Service</i>	<u>Per Person</u>
Human Services Buildings	\$66.71
Credit for Existing Debt	(\$4.59)
Net Capital Cost	\$62.12

MAXIMUM ALLOWABLE IMPACT FEES FOR HUMAN SERVICES

Figure 23 shows the schedule of maximum allowable impact fees for Human Services in Boulder. The amounts are calculated by multiplying the persons per housing unit for each unit type and size by the net capital cost per person. For example, for the average single family detached unit, the persons per housing unit of 2.3 is multiplied by the net capital cost of \$62.12 (from the previous table) for an impact fee amount of \$142 per single family housing unit. Number of persons by square feet of finished floor area is discussed further in the Appendix.

Figure 23. Human Services Maximum Allowable Impact Fees

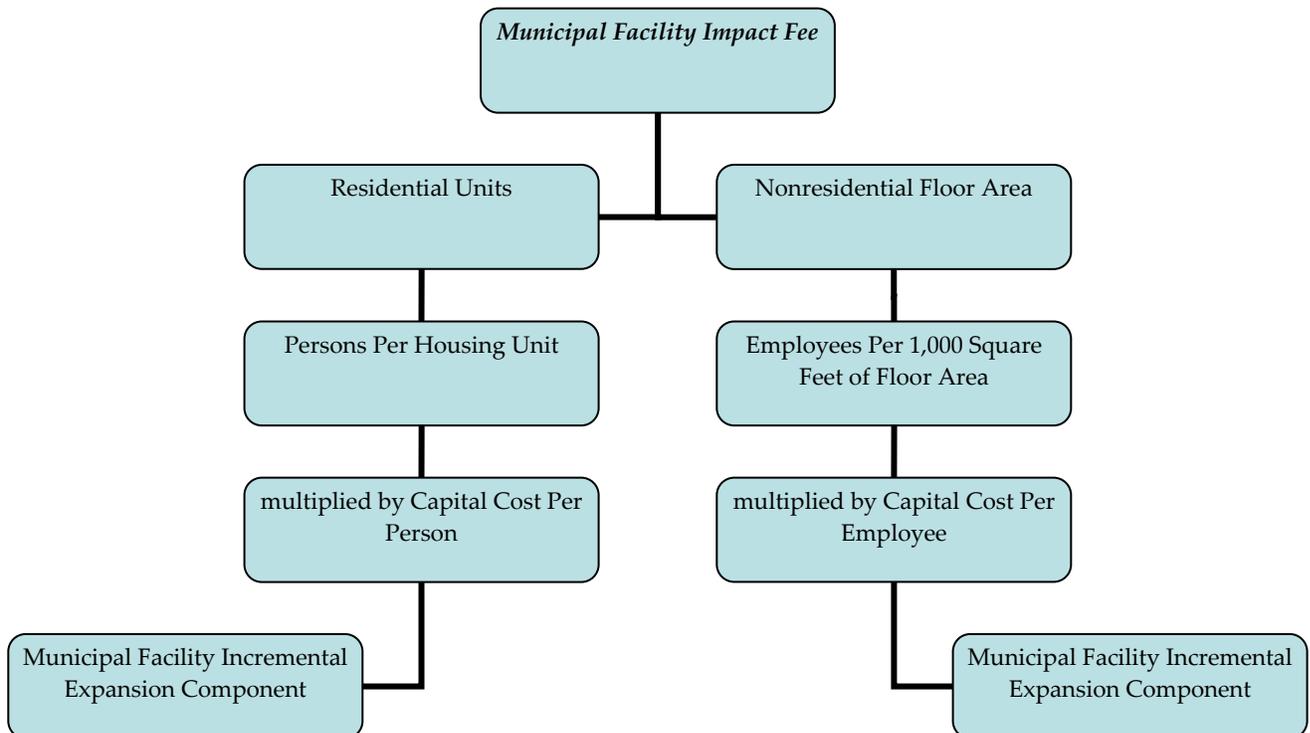
Square Feet (finished floor area)	Persons per Housing Unit		Impact Fee per Housing Unit	
	Single Family (SFD, SFA & MH)	All Other Types	Single Family (SFD, SFA & MH)	All Other Types
Wt Avg	2.30	1.60	\$142	\$99
600	1.00	1.06	\$62	\$65
700	1.00	1.28	\$62	\$79
800	1.00	1.47	\$62	\$91
900	1.00	1.64	\$62	\$102
1,000	1.16	1.79	\$72	\$111
1,100	1.30	1.93	\$80	\$120
1,200	1.43	2.06	\$88	\$127
1,300	1.55	2.17	\$96	\$134
1,400	1.66	2.28	\$102	\$141
1,500	1.76	2.38	\$109	\$147
1,600	1.85	2.47	\$115	\$153
1,700	1.94		\$120	
1,800	2.03		\$125	
1,900	2.11		\$130	
2,000	2.18		\$135	
2,100	2.25		\$139	
2,200	2.32		\$144	
2,300	2.39		\$148	
2,400	2.45		\$152	
2,500	2.51		\$155	
2,600	2.57		\$159	
2,700	2.62		\$163	
2,800	2.68		\$166	
2,900	2.73		\$169	
3,000	2.78		\$172	
3,100	2.83		\$175	
3,200	2.87		\$178	
3,300	2.92		\$181	
3,400	2.96		\$184	
3,500	3.01		\$186	
3,600	3.05		\$189	
3,700	3.09		\$191	

MUNICIPAL FACILITIES IMPACT FEES

METHODOLOGY

The Municipal Facilities impact fees are based on an incremental expansion approach. Components of the fee include additional building space that will be expanded as the City's population and employment base increases. As illustrated in Figure 24, 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 unit type. Nonresidential development fees are based on a capital cost per employee, where such costs are typically multiplied by the number of employees per 1,000 square feet of nonresidential floor area.

Figure 24. Municipal Facilities Impact Fee Methodology Chart



PROPORTIONATE SHARE FACTORS

The proportionate share factors shown in Figure 25 are used to allocate capital costs to residential and nonresidential development. The analysis is based on demographic data from the City of Boulder and the U.S. Census 2006 American Community Survey. For residential development, the proportionate share factor is based on estimated person hours of non-working residents, plus the non-working hours of resident workers. For resident workers, two-thirds of a day (i.e., 16 hours) is allocated to residential demand. Time spent at work (i.e., 8 hours) is allocated to nonresidential development. In 2006, the U.S. Census Bureau estimated that 36,309 City of Boulder residents also worked in the City. Therefore, total jobs include 60,659 non-resident workers that commute into Boulder for work. Based on estimated person hours, the cost allocation for residential development is 72 percent while nonresidential development accounts for 28 percent of the demand for municipal facilities.

Figure 25. Proportionate Share Factors for Municipal Facilities Impact Fees

	<u>Demand Units in 2006</u>	<u>Annualized Avg Hours per Day</u>	<u>Person Hours</u>
Residential			
Year-Round Population*	101,918		
Persons Not Working	51,796	24	1,243,104
Workers Living in Boulder**	50,122		
Residents Working in Boulder**	36,309	16	580,944
Residents Working Outside Boulder**	13,813	16	221,008
		Residential Subtotal	2,045,056
			72%
Nonresidential			
Jobs Located in Boulder*	96,968		
Residents Working in Boulder**	36,309	8	290,472
Non-Resident Workers in 2006	60,659	8	485,272
		Nonresidential Subtotal	775,744
			28%
		TOTAL	<u><u>2,820,800</u></u>

* City of Boulder estimates.

** Table B08008, 2006 American Community Survey.

MUNICIPAL FACILITIES LEVEL OF SERVICE STANDARDS AND COSTS

The incremental expansion methodology is used to calculate 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 26 lists the current inventory of municipal government space in the City of Boulder. As shown, the City currently has municipal facilities space totaling 70,748 square feet. The current value for general government buildings and contents is from the City's 2008 Property Schedule. Because the City anticipates having to acquire land in the future for Municipal Facilities, land and site improvement costs are included in the current costs. City staff estimates that 40 percent should be added to building costs to account for these costs. As indicated in Figure 26, the estimated current value is approximately \$16.8 million.

To derive the cost per demand unit, the current asset value is multiplied by the proportionate share factors for each type of land use and then divided by the respective demand units. For example, the cost per person of \$117.13 is derived by multiplying the current asset value (\$16,773,000) by 72%, then dividing by the current population estimate (103,100). The same approach is used for nonresidential development to derive a cost per job.

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

<i>Building</i>	<i>Building SF*</i>	<i>Cost/SF*</i>	<i>Current Value</i>
Municipal Building	23,657	\$237	\$5,597,000
Atrium	12,329	\$259	\$3,193,000
Park Central	20,910	\$241	\$5,035,000
New Britain	13,852	\$213	\$2,948,000
TOTAL	70,748		\$16,773,000

	Proportionate Share	2008 Demand Units	Cost per Demand Unit
Residential	72%	103,100 Population	\$117.13
Nonresidential	28%	97,750 Jobs	\$48.04

* Source: City Property Schedule (2008) for building and contents; land and site improvements are included (additional 40% over building cost, per City of Boulder)

CREDIT EVALUATION

The City does not have any outstanding property tax-backed debt for municipal facility improvements, therefore no credit is required.

RESIDENTIAL IMPACT FEES FOR MUNICIPAL FACILITIES

Figure 27 provides the schedule of residential impact fee by finished floor area for residential development. Capital cost per person, multiplied by persons per housing unit, yields the impact fee for municipal facilities.

Figure 27. Municipal Facilities Maximum Supportable Residential Schedule

<i>Level Of Service</i>	<u>Per Person</u>
Office Buildings and Land Cost	\$117.13

<i>Square Feet</i> <i>(finished floor area)</i>	<i>Persons per Housing Unit</i>		<i>Impact Fee per Housing Unit</i>	
	<i>Single Family</i> <i>(SFD, SFA & MH)</i>	<i>All Other Types</i>	<i>Single Family</i> <i>(SFD, SFA & MH)</i>	<i>All Other Types</i>
Wt Avg	2.30	1.60	\$269	\$187
600	1.00	1.06	\$117	\$123
700	1.00	1.28	\$117	\$149
800	1.00	1.47	\$117	\$172
900	1.00	1.64	\$117	\$192
1,000	1.16	1.79	\$135	\$210
1,100	1.30	1.93	\$152	\$226
1,200	1.43	2.06	\$167	\$241
1,300	1.55	2.17	\$181	\$254
1,400	1.66	2.28	\$193	\$267
1,500	1.76	2.38	\$205	\$278
1,600	1.85	2.47	\$217	\$289
1,700	1.94		\$227	
1,800	2.03		\$237	
1,900	2.11		\$246	
2,000	2.18		\$255	
2,100	2.25		\$263	
2,200	2.32		\$272	
2,300	2.39		\$279	
2,400	2.45		\$287	
2,500	2.51		\$294	
2,600	2.57		\$300	
2,700	2.62		\$307	
2,800	2.68		\$313	
2,900	2.73		\$319	
3,000	2.78		\$325	
3,100	2.83		\$331	
3,200	2.87		\$336	
3,300	2.92		\$342	
3,400	2.96		\$347	
3,500	3.01		\$352	
3,600	3.05		\$357	
3,700	3.09		\$361	

NONRESIDENTIAL IMPACT FEES FOR MUNICIPAL FACILITIES

Figure 28 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 1,000 square feet (2.86) is multiplied by the capital cost per employee (\$48.04), for an impact fee of \$0.13 per square foot.

Figure 28. Municipal Facility Maximum Supportable Nonresidential Schedule

<i>Level Of Service</i>	<i>Per Employee</i>
Office Buildings and Land Cost	\$48.04

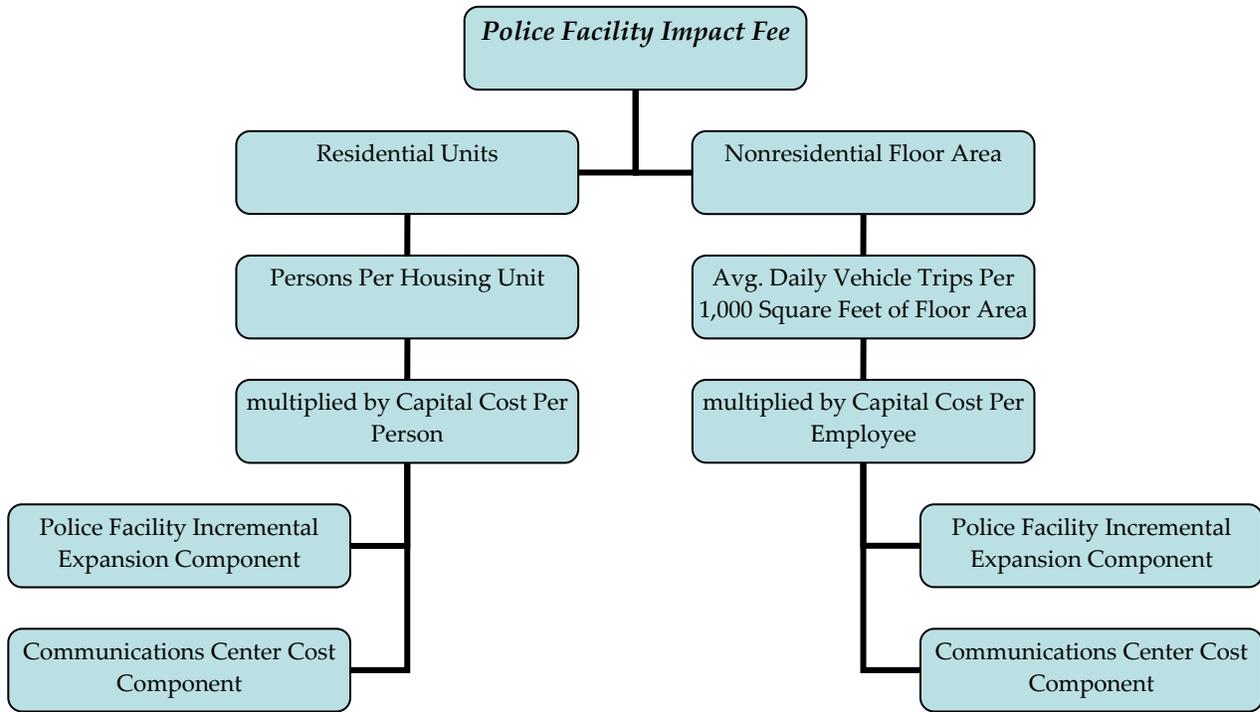
<i>ITE Code</i>	<i>Employees Per 1,000 Square Feet</i>	<i>Impact Fee per Square Foot</i>	
<i>Nonresidential (Floor Area)</i>			
820	Retail / Restaurant	2.86	\$0.13
770	Business Park	3.16	\$0.15
710	Office	3.91	\$0.18
610	Hospital	3.38	\$0.16
520	School	0.92	\$0.04
151	Mini-Warehouse	0.04	\$0.00
150	Warehousing	1.28	\$0.06
110	Light Industrial	2.31	\$0.11
<i>Other Nonresidential (Unique Demand Indicator)</i>			
620	Nursing Home (per bed)	0.36	\$17
565	Day Care (per student)	0.16	\$7
320	Lodging (per room)	0.44	\$21

POLICE IMPACT FEES

METHODOLOGY

The Police impact fee is calculated using a combination of the incremental expansion and plan based methodologies. An incremental expansion approach is used for Police Station space, while a plan based approach is used for planned Communication Center space. 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 29, 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 per 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 29. Police Facilities Impact Fee Methodology Chart



PROPORTIONATE SHARE FACTORS

The preferred method for determining proportionate share factors is through an analysis of calls for Police service data by residential and nonresidential land use. Unfortunately, this data was not available for this impact fee study. Lacking calls for service data, the next best determiner of the demand for Police services is through functional population. This analysis is shown below in and is used to allocate capital costs to residential and nonresidential development.

The analysis is based on demographic data from the City of Boulder and the U.S. Census 2006 American Community Survey. For residential development, the proportionate share factor is based on estimated person hours of non-working residents, plus the non-working hours of resident workers. For resident workers, two-thirds of a day (i.e., 16 hours) is allocated to residential demand. Time spent at work (i.e., 8 hours) is allocated to nonresidential development. In 2006, the U.S. Census Bureau estimated that 36,309 City of Boulder residents also worked in the City. Therefore, total jobs include 60,659 non-resident

workers that commute into Boulder for work. Based on estimated person hours, the cost allocation for residential development is 72 percent while nonresidential development accounts for 28 percent of the demand for municipal facilities. Details are shown in Figure 30.

Figure 30. Proportionate Share Factors for Police Impact Fees

	<u>Demand Units in 2006</u>	<u>Annualized Avg Hours per Day</u>	<u>Person Hours</u>
Residential			
Year-Round Population*	101,918		
Persons Not Working	51,796	24	1,243,104
Workers Living in Boulder**	50,122		
Residents Working in Boulder**	36,309	16	580,944
Residents Working Outside Boulder**	13,813	16	221,008
		Residential Subtotal	2,045,056
			72%
Nonresidential			
Jobs Located in Boulder*	96,968		
Residents Working in Boulder**	36,309	8	290,472
Non-Resident Workers in 2006	60,659	8	485,272
		Nonresidential Subtotal	775,744
			28%
		TOTAL	2,820,800

* City of Boulder estimates.

** Table B08008, 2006 American Community Survey.

POLICE FACILITIES LEVEL OF SERVICE STANDARDS AND COSTS

The Police impact fee is calculated using the incremental expansion and plan based methodologies. The incremental expansion approach is used for Police station space and administration and a plan based approach is used for planned Communications Systems improvements. For the incremental component, 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 31 lists the current inventory of Police space in the City of Boulder. As shown, the City currently has Police space totaling 69,178 square feet. To determine the total current asset value for Police space, City of Boulder staff provided current values for each facility included in the inventory through the 2008 City Property Schedule. Because the City anticipates having to acquire land in the future for Police facilities, land and site

improvement costs are included in the current costs. City staff estimates that 40 percent should be added to building costs to account for these costs. As indicated in Figure 31, the estimated current value is approximately \$17.3 million.

To derive the cost per demand unit for the incremental portion of the fee, the current asset value (\$17,268,000) is multiplied by the proportionate share factors for each type of land use and then divided by the respective demand units for each. For example, the cost per person of \$120.59 is derived by multiplying the current asset value (\$17,268,000) by 72 percent, then dividing by the current population estimate (103,100). The same approach is used for nonresidential development to derive a cost per trip.

For the Communications System Improvements, a plan-based methodology is used and is based on the estimated cost less committed and earmarked funds from the federal government and 911 fees. The improvements are anticipated to serve development through 2030. Based on the net capital cost to the City of \$449,000 and projected population and vehicle trips to nonresidential development in 2030, the per capita cost is \$2.72 and the cost per trip is \$0.35.

Figure 31. Police Facilities Level of Service Standards and Cost Factors

Incremental Expansion Cost of Police Buildings

	Bldg Sq Ft	Cost per SF*	Current Value
Headquarters	47,115	\$290	\$13,654,000
Training Ctr / Firing Range Addition	16,000	\$199	\$3,181,000
Police Storage (only building cost)	4,763	\$91	\$433,000
Downtown Mall Annex	850	leased	
University Hill Annex	450	leased	
TOTAL			69,178
			\$17,268,000

	Proportionate Share	2008 Demand Units	Cost per Demand Unit
Residential	72%	103,100 persons	\$120.59
Nonresidential	28%	295,181 nonres trips	\$16.37

* Source: City Property Schedule (2008) for building and contents; land and site improvements are included (additional 40% over building cost, per City of Boulder)

Plan-Based Cost of Communications System Improvements

Boulder Police Communications Center**	\$1,900,000	
Less BRE TSA and DHS Grant Funding**	(\$1,451,000)	
Net Capital Cost		\$449,000

	Proportionate Share	2030 Demand Units	Cost per Demand Unit
Residential	72%	118,500 persons	\$2.72
Nonresidential	28%	354,577 nonres trips	\$0.35

** Source: 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.

MAXIMUM ALLOWABLE RESIDENTIAL IMPACT FEE FOR POLICE

Figure 32 provides a summary of the level-of-service standards used to calculate the Police impact fees. As discussed previously, police impact fees are calculated for both residential and nonresidential land uses. The capital cost per demand unit for residential land uses is \$123.31 per person. The number of persons per housing unit (by type of size) is discussed further in the Appendix.

Figure 32. Police Impact Fee Schedule for Residential Development

<i>Police Facilities Level Of Service</i>	<u>Per Person</u>
Headquarters & Annex Cost	\$120.59
Communications System Cost	\$2.72
Net Capital Cost	\$123.31

<i>Square Feet</i> <i>(finished floor area)</i>	<i>Persons per Housing Unit</i>		<i>Impact Fee per Housing Unit</i>	
	<i>Single Family (SFD, SFA & MH)</i>	<i>All Other Types</i>	<i>Single Family (SFD, SFA & MH)</i>	<i>All Other Types</i>
Wt Avg	2.30	1.60	\$283	\$197
600	1.00	1.06	\$123	\$130
700	1.00	1.28	\$123	\$157
800	1.00	1.47	\$123	\$181
900	1.00	1.64	\$123	\$202
1,000	1.16	1.79	\$143	\$221
1,100	1.30	1.93	\$160	\$238
1,200	1.43	2.06	\$176	\$253
1,300	1.55	2.17	\$190	\$267
1,400	1.66	2.28	\$204	\$281
1,500	1.76	2.38	\$216	\$293
1,600	1.85	2.47	\$228	\$304
1,700	1.94		\$239	
1,800	2.03		\$249	
1,900	2.11		\$259	
2,000	2.18		\$269	
2,100	2.25		\$277	
2,200	2.32		\$286	
2,300	2.39		\$294	
2,400	2.45		\$302	
2,500	2.51		\$309	
2,600	2.57		\$316	
2,700	2.62		\$323	
2,800	2.68		\$330	
2,900	2.73		\$336	
3,000	2.78		\$342	
3,100	2.83		\$348	
3,200	2.87		\$354	
3,300	2.92		\$360	
3,400	2.96		\$365	
3,500	3.01		\$370	
3,600	3.05		\$375	
3,700	3.09		\$380	

MAXIMUM ALLOWABLE NONRESIDENTIAL IMPACT FEES FOR POLICE

Figure 33 contains a schedule of the Police impact fees for nonresidential development. For example, a retail establishment generates an average of 86.56 vehicle trips per 1,000 square feet on an average weekday. To account for pass-by trips, the trip adjustment rate of 31 percent is multiplied by the capital cost per nonresidential vehicle trip (\$16.72), for an impact fee of \$0.44 per square foot.

Figure 33. Police Maximum Nonresidential Schedule

<i>Police Facilities Level Of Service</i>	<i>Per Employee</i>
Headquarters & Annex Cost	\$16.37
Communications System Cost	\$0.35
Net Capital Cost	\$16.72

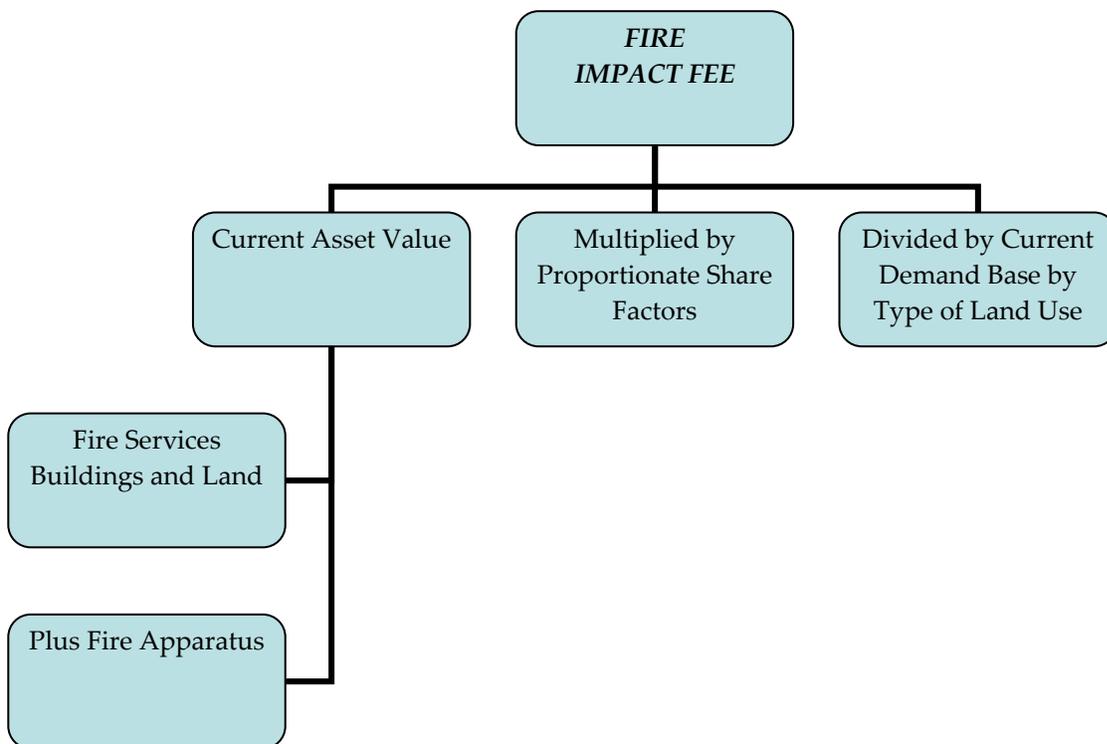
<i>ITE Code</i>	<i>Wkdy Veh Trip Ends per 1,000 Sq Ft</i>	<i>Trip Adjustment Factors</i>	<i>Impact Fee per Square Foot</i>	
<i>Nonresidential (Floor Area)</i>				
820	Retail / Restaurant	86.56	31%	\$0.44
770	Business Park	12.76	50%	\$0.10
710	Office	18.35	50%	\$0.15
610	Hospital	17.57	50%	\$0.14
520	School	14.49	33%	\$0.07
151	Mini-Warehouse	2.50	50%	\$0.02
150	Warehousing	4.96	50%	\$0.04
110	Light Industrial	6.97	50%	\$0.05
<i>Other Nonresidential (Unique Demand Indicator)</i>				
620	Nursing Home (per bed)	2.37	50%	\$19
565	Day Care (per student)	4.48	24%	\$17
320	Lodging (per room)	5.63	50%	\$47

FIRE IMPACT FEES

The City of Boulder Fire impact fee is based on the incremental expansion cost of Fire Services facilities and Fire apparatus. This methodology will allow for the greatest flexibility, as the City plans to expand Fire facilities in the next few years, but at this time is not sure if this will take the form of an additional station or a relocation and expansion of an existing station. 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.

As shown in Figure 34, the Fire impact fee is calculated using proportionate share factors that are based on actual calls for service to specific types of land uses. Because of the availability of detailed calls for service data by type of land use, the calculation of the Fire impact fees is slightly different from the other categories. For example, Fire calls for service data indicates that 24.7 percent of Fire calls are to single family housing units. Therefore, 24.7 percent of the Fire costs are allocated to single family housing units, which are then divided by the current number of single family housing units to determine the impact fee.

Figure 34. Fire Impact Fee Methodology Chart



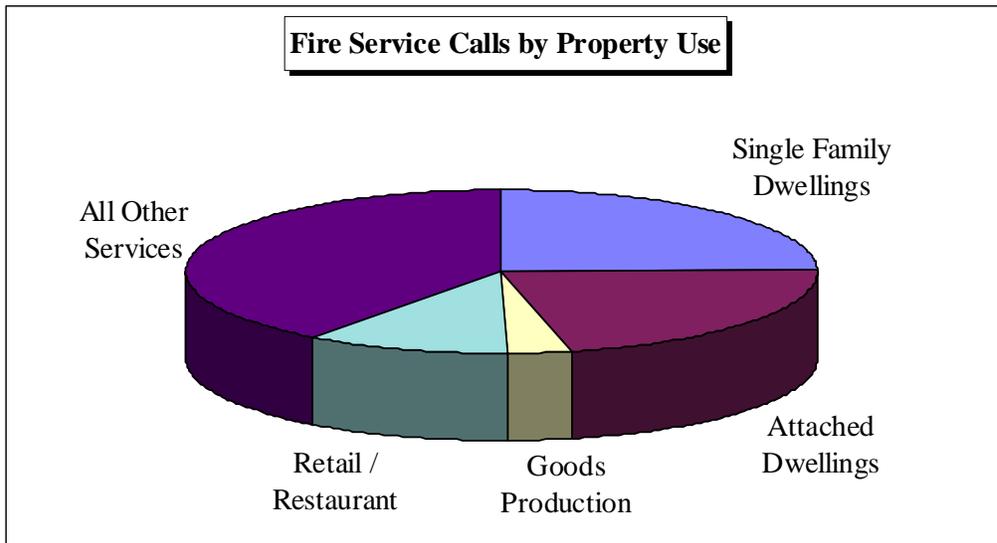
PROPORTIONATE SHARE FACTORS

The most accurate source for determining demand for Fire services and facilities is calls for service generated by residential and nonresidential land uses. The City provided data on Fire call incidents by land use for calendar year 2007. TischlerBise used this call data to determine the proportionate share factors shown in Figure 35. This data indicated that the City responded to 6,116 calls to known land uses. The data further indicates the number and percentage of calls to specific land uses. For example, 656 calls were to retail/restaurant uses, which represent 10.7 percent of total calls. Proportionate share factors are shown below.

Figure 35. Fire Proportionate Share Factors

	<i>Incidents</i>	
Single Family Dwellings	1,510	24.7%
Attached Dwellings	1,320	21.6%
Goods Production	205	3.4%
Retail / Restaurant	656	10.7%
All Other Services	2,425	39.7%
Subtotal	6,116	

Source: Boulder Fire Department calls by property use in 2007.



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 2008 level of service. As shown in Figure 36, the City of Boulder has seven fire stations, headquarters, and a training center. The costs for the stations and headquarters are from the 2008 City Property Schedule. Also because the City anticipates having to acquire land in the future for Fire facilities, land and site improvement costs are included at 40 percent of building cost, per the City. The Training Center cost shown below reflects the current cost to the City to replace the existing facility, which is slated to be relocated from its existing site to a new location. It should be noted that the relocated facility (and cost) does not reflect any excess capacity to accommodate new growth, and therefore represents the City's current level of service. As Figure 36 indicates, the City currently has 49,823 square feet of Fire Services space. The current value of the existing fire stations, including land and site improvements, is estimated at \$12,580,613.

Figure 36. Fire Station Inventory and Costs

	<i>Sq Ft</i>	<i>Current Value*</i>
Station One	7,941	\$1,903,626
Station Two	4,757	\$936,188
Station Three	6,160	\$1,060,018
Station Four	3,498	\$688,572
Station Five	3,716	\$776,558
Station Six	3,435	\$810,629
Station Seven	5,081	\$1,286,872
Fire Headquarters	5,235	\$1,518,150
Training Center	10,000	\$3,600,000
TOTAL	49,823	\$12,580,613

** Source: City Property Schedule (2008) for building and contents; land and site improvements are included (additional 40% over building cost, per City of Boulder)*

Fire Apparatus Incremental Expansion Component

The Fire impact fees also use an incremental expansion approach for Fire apparatus, based on the current 2008 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 37 and were provided by the City. As shown in Figure 37, the estimated current value totals \$8.2 million.

Figure 37. Fire Apparatus Inventory and Costs

<i>Item</i>	<i>Units</i>	<i>\$/Unit</i>	<i>Current Value</i>
Fire Engines (Pumpers)	7	\$585,755	\$4,100,285
Fire Engines (Telesquirts)	3	\$770,000	\$2,310,000
Ladder Truck	1	\$900,000	\$900,000
Rescue Truck	1	\$195,000	\$195,000
Wild-Land Truck (Type 6)	2	\$100,000	\$200,000
Wild-Land Truck (Type 3)	2	\$250,000	\$500,000
TOTAL	16	\$512,830	\$8,205,285

Source: City of Boulder Fire Department

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.

SUMMARY OF FACTORS FOR FIRE IMPACT FEE

Factors used to calculate Fire impact fees are shown in the boxed area of Figure 38. Current values for Fire Services Buildings and Apparatus are summarized at the top of the figure. Proportionate share factors by type of land use as described earlier are summarized in the middle section followed by current demand base data for housing units by type and nonresidential floor area by type of development.

Figure 38. Fire Impact Fee Level-of-Service Standard Summary

		<i>Standards:</i>	
Current Value			
Fire Services Buildings & Land		\$12,580,000	
Fire Apparatus		\$8,205,000	
Total		\$20,785,000	
Proportionate Share Factors			
Single Family (SFD, SFA & MH)		24.7%	
All Other Residential		21.6%	
Goods Production		3.4%	
Retail / Restaurant		10.7%	
All Other Services		39.7%	
Demand Base in 2008			
		Housing Units	Persons per HU
Single Family		25,445	2.3
All Other		19,440	1.6
		Square Feet	Employees per Sq Ft
Goods Production		16,090,000	0.00128
Retail / Restaurant		6,160,000	0.00286
All Other Services		25,820,000	0.00231
Maximum Supportable Impact Fee			
<u>Residential</u>		<i>Per Housing Unit</i>	<i>Per Person</i>
Single Family (SFD, SFA & MH)		\$201	\$87.39
All Other Types		\$230	\$143.75
<u>Nonresidential</u>		<i>Per Square Foot</i>	<i>Per Employee</i>
Goods Production		\$0.04	\$31.25
Retail / Restaurant		\$0.36	\$125.87
All Other Services		\$0.31	\$134.19

MAXIMUM ALLOWABLE IMPACT FEES FOR FIRE

Figure 39, shows the schedule of maximum allowable fire impact fees for residential development. To determine the cost per demand unit, total estimated costs are multiplied by the appropriate proportionate share factors by type of land use and then divided by the applicable demand factor. For example for a single family unit, the total current value of Fire facilities of \$20,785,000 is multiplied by the single family proportionate share of 24.7 percent and then divided by the current estimated number of single family units (25,445) for a cost per single family unit of \$201, or \$87.39 per person.

Figure 39. Fire Impact Fee Schedule for Residential Development

<i>Fire Facilities Level Of Service</i>	<u>Per Person</u>
Single Family (SFD, SFA, & MH)	\$87.39
All Other Types	\$143.75

<i>Square Feet</i> <i>(finished floor area)</i>	<i>Persons per Housing Unit</i>		<i>Impact Fee per Housing Unit</i>	
	<i>Single Family</i> <i>(SFD, SFA & MH)</i>	<i>All Other Types</i>	<i>Single Family</i> <i>(SFD, SFA & MH)</i>	<i>All Other Types</i>
Wt Avg	2.30	1.60	\$200	\$230
600	1.00	1.06	\$87	\$151
700	1.00	1.28	\$87	\$183
800	1.00	1.47	\$87	\$211
900	1.00	1.64	\$87	\$236
1,000	1.16	1.79	\$101	\$257
1,100	1.30	1.93	\$113	\$277
1,200	1.43	2.06	\$124	\$295
1,300	1.55	2.17	\$135	\$312
1,400	1.66	2.28	\$144	\$327
1,500	1.76	2.38	\$153	\$342
1,600	1.85	2.47	\$161	\$355
1,700	1.94		\$169	
1,800	2.03		\$177	
1,900	2.11		\$184	
2,000	2.18		\$190	
2,100	2.25		\$196	
2,200	2.32		\$202	
2,300	2.39		\$208	
2,400	2.45		\$214	
2,500	2.51		\$219	
2,600	2.57		\$224	
2,700	2.62		\$229	
2,800	2.68		\$234	
2,900	2.73		\$238	
3,000	2.78		\$242	
3,100	2.83		\$247	
3,200	2.87		\$251	
3,300	2.92		\$255	
3,400	2.96		\$259	
3,500	3.01		\$262	
3,600	3.05		\$266	
3,700	3.09		\$269	

The cost per employee for nonresidential development, multiplied by the number of employees per demand unit, yields the fire impact by type of nonresidential development. For example, retail/restaurant development averages 2.86 employees per 1,000 square feet of floor area. At a capital cost of \$125.87 per employee for fire infrastructure, the resulting impact fee is \$0.35 per square foot of floor area, as shown in Figure 40.

Figure 40. Fire Impact Fee Schedule for Nonresidential Development

<i>Fire Facilities Level Of Service</i>	<i>Per Employee</i>
Goods Production	\$31.25
Retail / Restaurant	\$125.87
All Other Services	\$134.19

<i>ITE Code</i>	<i>Employees Per 1,000 Square Feet</i>	<i>Impact Fee per Square Foot</i>	
<i>Nonresidential (Floor Area)</i>			
820	Retail / Restaurant	2.86	\$0.35
770	Business Park	3.16	\$0.09
710	Office	3.91	\$0.52
610	Hospital	3.38	\$0.45
520	School	0.92	\$0.12
151	Mini-Warehouse	0.04	\$0.00
150	Warehousing	1.28	\$0.04
110	Light Industrial	2.31	\$0.07
<i>Other Nonresidential</i>			
			<i>Impact Fee per Demand Indicator</i>
620	Nursing Home (per bed)	0.36	\$48
565	Day Care (per student)	0.16	\$21
320	Lodging (per room)	0.44	\$59

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, 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.

It should be noted that as discussed in the Library chapter, it is TischlerBise's recommendation that the cost recovery component of the Library fee be eliminated once the remaining outstanding debt on the most recent library capacity expansion is retired (anticipated to be an additional three years). However, if the City decides to construct an additional branch or expand existing facilities, the impact fee methodology and amount should be revised to reflect this change.

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. As described in this report, outstanding debt exists for Libraries where a cost recovery approach is used, therefore a credit is necessary and include in the fee calculation.

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 necessary and calculated for Parks and Recreation and Human Services because there is outstanding debt for capacity expansions calculated under the incremental approach.

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. DEMOGRAPHIC DATA

In this Appendix, TischlerBise documents the demographic data and development projections used in the Impact Fee / Development Excise Tax study for the City of Boulder. Although long-range projections are necessary for planning capital improvements, a shorter time frame of five years is critical for the impact fees analysis. Infrastructure standards are calibrated using 2008 data and the first projection year for the cash flow model will be 2009. The City of Boulder's fiscal year begins January 1st.

POPULATION AND HOUSING CHARACTERISTICS

TischlerBise recommends the use of two residential categories in the impact fee calculations: 1) Single Family (detached and attached) and 2) All Other housing types. Differentiating impact fees by type of housing helps make the fees proportionate to the demand for public facilities. Single Family housing units are normally larger and have more persons than All Other housing types. According to the U.S. Census Bureau's American Community Survey data for 2006, Single Family housing in Boulder averages 2.3 persons per unit (see the rows with yellow shading in Figure A1). All Other housing averages 1.6 persons per unit (see the rows with tan shading in the table below).

Impact fees often use per capita standards and persons per housing unit or persons per household to derive proportionate-share fee amounts. When persons per housing unit multipliers are used in the fee calculations, infrastructure standards are derived using year-round population. When persons per household multipliers are used in the fee calculations, the impact fee methodology assumes all housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. In the City of Boulder impact fee will be derived using year-round population and the average number of persons per housing unit.

Figure A1. Persons per Housing Unit

<i>House Type Demographics</i>				<i>Housing</i>	<i>Persons Per</i>	
	<i>Persons</i>	<i>Hshlds</i>	<i>PPH</i>	<i>Units</i>	<i>Housing Unit</i>	<i>Hsg Mix</i>
Single Family (SFD, SFA & MH)	54,948	21,776	2.52	23,678	2.3	57%
All Other Types	28,671	16,097	1.78	17,651	1.6	43%
Group Quarters	8,855					
Total	92,474	37,873		41,329		

Source: U.S. Census Bureau, 2006 American Community Survey.

AVERAGE NUMBER OF PERSONS BY SIZE OF HOUSING UNIT

To derive impact fees by floor area of housing requires a linkage of demographic data from the U.S. Census Bureau and house size data from the Boulder County Assessor, with number of bedrooms as the common connection between the two databases. Number of persons by bedroom range may be determined from survey data provided by the U.S. Census Bureau. The City of Boulder is in Public Use Microdata Area (PUMA) 00803. PUMAs are areas of roughly 100,000 persons for which the Census Bureau makes available a 5% sample of responses to the long-form census questionnaire. TischlerBise used this data to prepare persons per housing unit multipliers that vary by type of housing and number of bedrooms. Because the number of persons increases with the number of bedrooms, this approach may be used to make impact fees more “progressive” with higher impact fees imposed on larger housing units and lower impact fees on smaller, more affordable housing.

The tables below indicate persons per housing unit by type of housing and number of bedrooms. Results for Single Family housing are shown in Figure A2, with Figure A3 indicating average persons by bedroom range for All Other housing types. To minimize sample size problems, TischlerBise aggregated bedroom ranges.

Figure A2. Persons per Single Family Housing Unit by Bedroom Range

Single Family Dwellings					
Boulder, Colorado					
	<i>0-2 Bdrms</i>	<i>3 Bdrms</i>	<i>4 Bdrms</i>	<i>5+ Bdrms</i>	<i>Wt Avg</i>
Single Family	1.63	2.15	2.73	2.95	2.32

Source: Data for Colorado PUMA 00803 (includes SFD, SFA and MH)
2006 American Community Survey, Public Use Microdata Sample.

Figure A3. Average Persons by Bedroom Range for All Other Housing Types

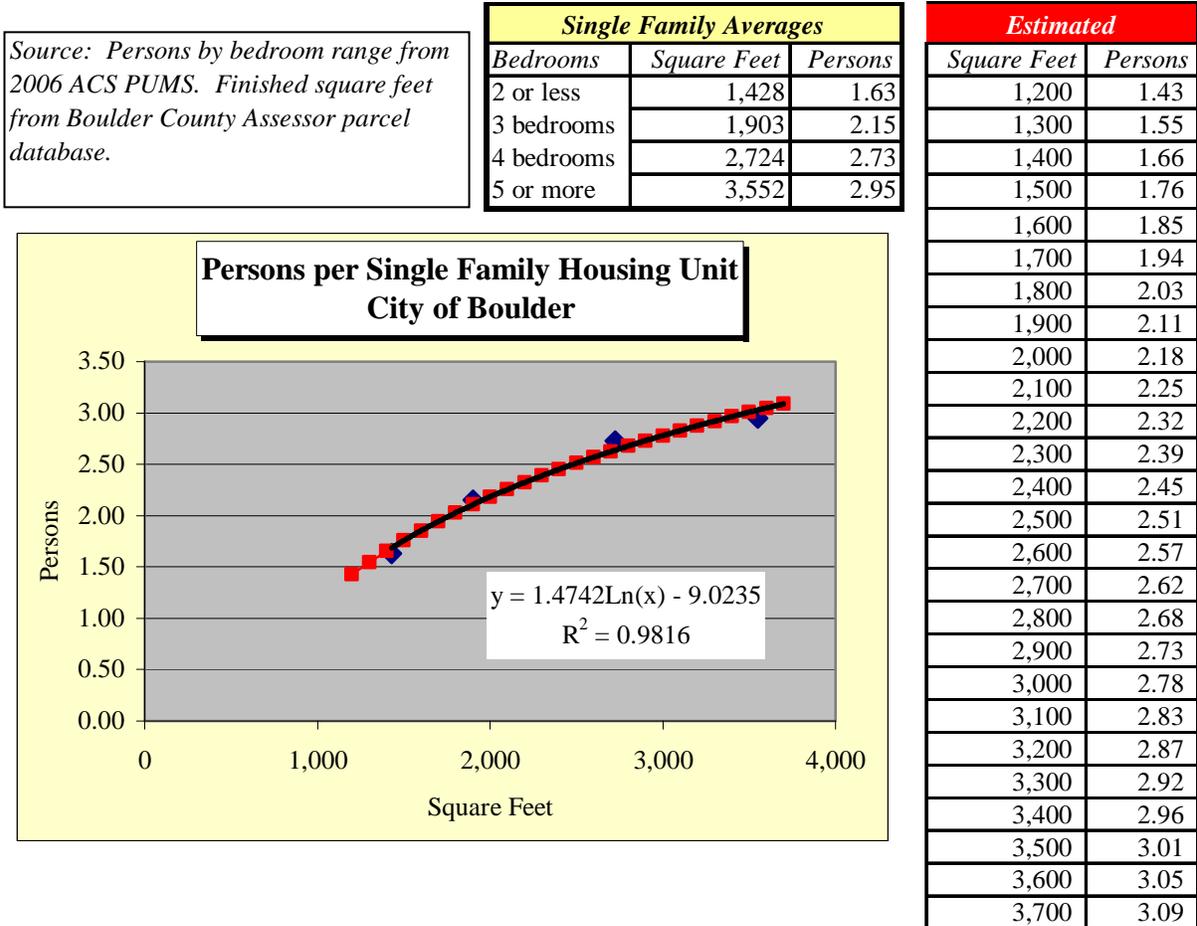
All Other Dwellings
Boulder, Colorado

	<i>0-1 Bdrm</i>	<i>2 Bdrms</i>	<i>3+ Bdrms</i>	<i>Wt Avg</i>
2+ Units per Structure	1.20	1.79	2.46	1.62

*Source: Data for Colorado PUMA 00803 (all other housing types)
2006 American Community Survey, Public Use Microdata Sample.*

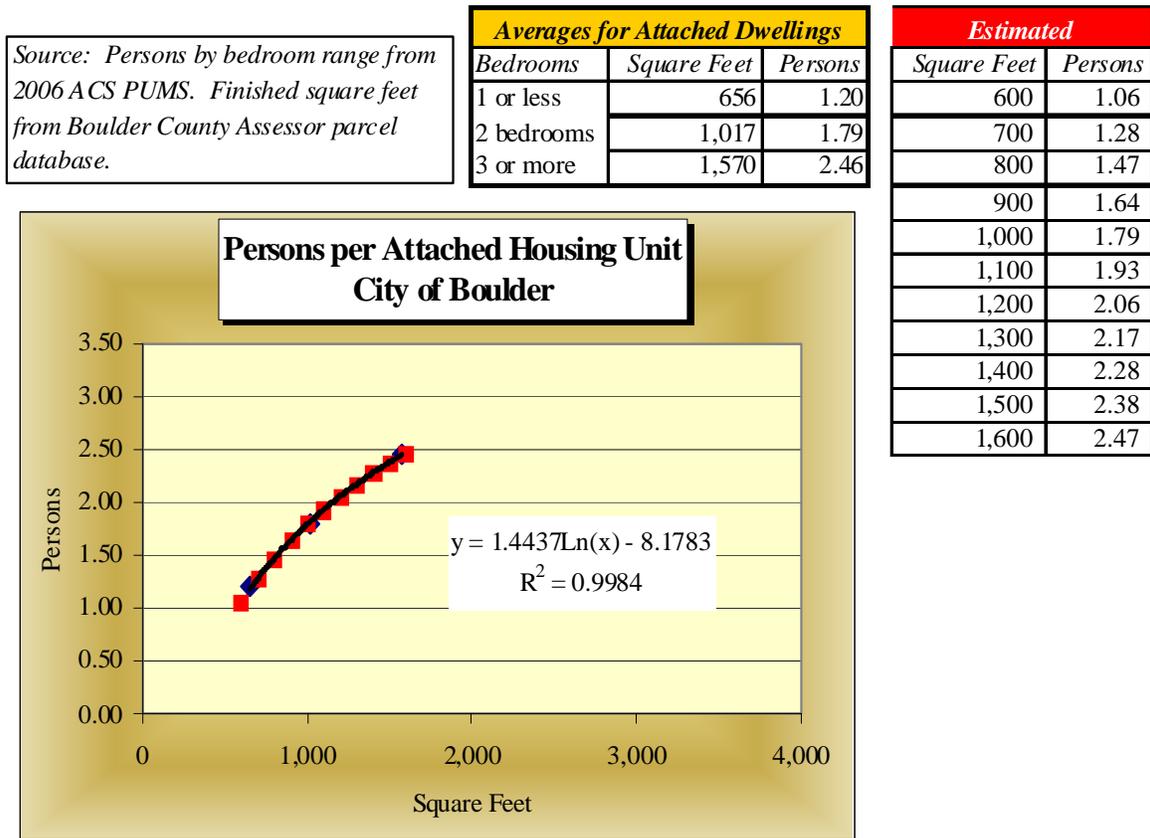
Using key variables from the County Assessor's parcel database, TischlerBise determined the average finished floor area by type of housing and bedroom range. For Single Family housing, average floor area and number of persons by bedroom range are plotted in Figure A4, with a logarithmic trend line derived from the four actual averages in the City of Boulder. Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons by size of Single Family housing, using 100 square foot intervals. For the purpose of impact fees in City of Boulder if the City wishes to assess fees by size of unit, TischlerBise recommends a minimum fee based on a Single Family unit size of 1,200 square feet and a maximum fee based on a Single Family unit size of 3,700 square feet of finished floor area.

Figure A4. Average Persons by Floor Area of Single Family Housing



For All Other housing types, the average floor area and number of persons by bedroom range are plotted in Figure A5. A logarithmic trend line was determined from the three actual averages in the City of Boulder. Using the trend line formula shown in the chart, TischlerBise derived the estimated average number of persons by unit size, using 100 square feet intervals. For All Other housing types, TischlerBise recommends a minimum fee based on a unit size of 600 square feet and a maximum fee based on a unit size of 1,600 square feet of finished floor area, if the City wishes to assess fees by size of unit.

Figure A5. Average Persons by Floor Area of Attached Housing



RECENT RESIDENTIAL CONSTRUCTION

Figure A6 indicates City of Boulder 2006 estimates for year-round residents and housing units. From 2000 to 2006, Boulder added an average of 308 housing units per year. The chart at the bottom of Figure A6 indicates the estimated number of housing units added by decade in City of Boulder. If the recent rate of housing construction continues, the first decade of the

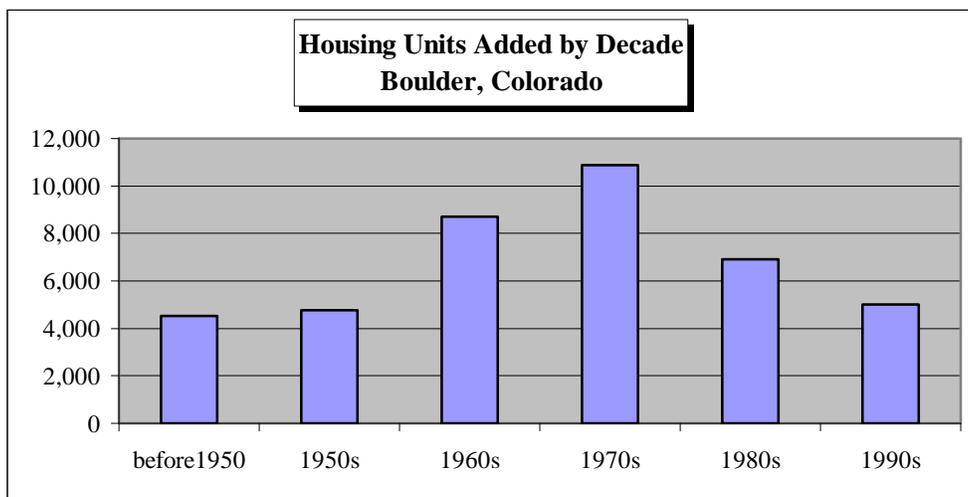
21st century will experience an increase of approximately 3,000 housing units, which is less than the number of housing units added during the 90s.

Figure A6. City of Boulder Housing Units and Population in 2006

Boulder, Colorado	
Estimated Population in 2006*	101,918
Housing Units 2000*	42,740
<i>New Housing Units 2000-2006</i>	<i>1,848</i>
Housing Units in 2006*	44,588

From 2000 to 2006, Boulder added approximately 308 housing units per year.

* City of Boulder estimates.



Source: Units by decade based on Table H34, SF3 Census 2000, U.S. Census Bureau.

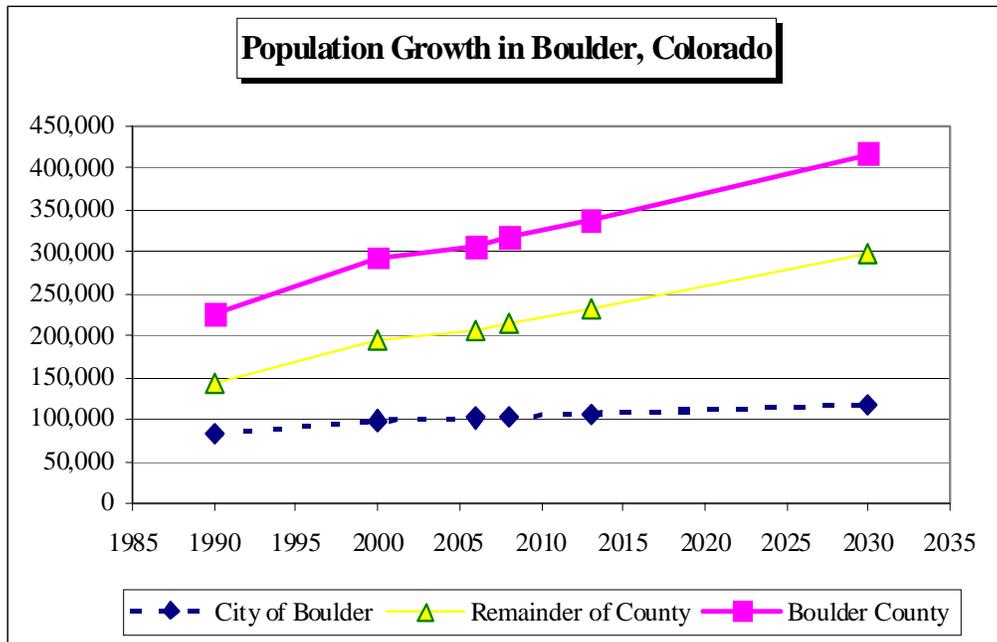
POPULATION PROJECTIONS

The impact fee study will use population and job projections as the key growth indicators, from which housing unit and nonresidential floor area data will be derived. According to the City’s 2008 Community Data Report, Boulder will be home to 118,500 residents by the year 2030 (Area I only). In that same year, Boulder County is expected to have a population of 417,517 (Woods & Poole Economics 2007). As shown in Figure A7, Boulder’s population share is expected to decrease from 33% of total county population in 2006, to 28% by the year 2030.

Figure A7. Population Growth in Boulder

	<i>1990</i>	<i>2000</i>	<i>2006</i>	<i>2008</i>	<i>2013</i>	<i>2030</i>
Boulder County	226,374	293,878	308,110	317,358	338,739	417,517
City of Boulder	83,312	99,093	101,918	103,100	106,414	118,500
Remainder of County	143,062	194,785	206,192	214,258	232,325	299,017
City of Boulder Share	37%	34%	33%	32%	31%	28%

Source: Boulder County from Woods & Poole Economics (2007). City of Boulder 1990 from U.S. Census Bureau; 2000 and 2006 estimates from City of Boulder. City of Boulder 2008 and 2030 (Area I) from 2008 Community Data Report.



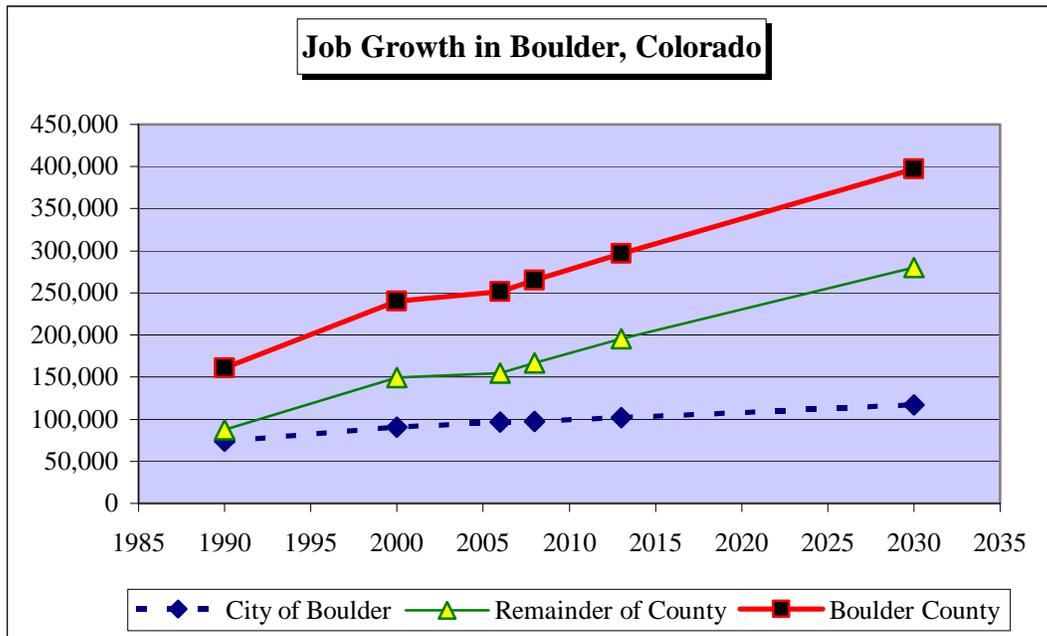
JOBS BY PLACE OF WORK

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. Similar to the above population share discussion, Boulder’s capture ratio of countywide jobs is shown in Figure A8. Boulder County job data were obtained from Woods & Poole Economics, Inc. (2007). Estimated jobs within the City of Boulder, in both 1990 and 2000, are from the Census Transportation Planning Package. Job projections from the 2008 Community Data Report indicate Boulder’s capture ratio decreases from 39% of countywide jobs in 2006 to 30% by the year 2030.

Figure A8. Job Growth in Boulder

	1990	2000	2006	2008	2013	2030
Boulder County	161,089	239,740	251,526	264,722	297,100	397,456
City of Boulder	73,650	90,255	96,968	97,750	101,905	117,400
Remainder of County	87,439	149,485	154,558	166,972	195,195	280,056
City of Boulder Share	46%	38%	39%	37%	34%	30%

Source: Boulder County from Woods & Poole Economics (2007) based on Bureau of Economic Analysis data. City of Boulder 1990 and 2000 from Census Transportation Planning Package. City of Boulder estimate for 2006. City of Boulder 2008 and 2030 (Area I) from 2008 Community Data Report.



NONRESIDENTIAL DEMAND INDICATORS

In the impact fee study, vehicle trips or employees per demand unit are used to differentiate fees by type of nonresidential development. In Figure A9, gray shading indicates the three nonresidential development prototypes used by TischlerBise to calculate vehicle trips and estimate potential impact fee revenue. The first prototype, for goods-producing jobs, is a warehouse with 784 square feet per employee. The second prototype, for retail and restaurant jobs, is a shopping center with 50,000 square feet of floor area. To more closely match Boulder's actual floor area determined by the County Assessor's parcel database, TischlerBise used Light Industrial as the prototype for Other Services.

Figure A9. Employee and Building Area Ratios

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit*	Wkdy Trip Ends Per Employee*	Emp Per Dmd Unit**	Sq Ft Per Emp
Commercial / Shopping Center						
821	25K gross leasable area	1,000 Sq Ft	110.32	na	3.33	300
820	50K gross leasable area	1,000 Sq Ft	86.56	na	2.86	350
820	100K gross leasable area	1,000 Sq Ft	67.91	na	2.50	400
820	200K gross leasable area	1,000 Sq Ft	53.28	na	2.22	450
820	400K gross leasable area	1,000 Sq Ft	41.80	na	2.00	500
General Office						
710	10K gross floor area	1,000 Sq Ft	22.66	5.06	4.48	223
710	25K gross floor area	1,000 Sq Ft	18.35	4.43	4.14	241
710	50K gross floor area	1,000 Sq Ft	15.65	4.00	3.91	256
710	100K gross floor area	1,000 Sq Ft	13.34	3.61	3.70	271
710	200K gross floor area	1,000 Sq Ft	11.37	3.26	3.49	287
Industrial						
770	Business Park***	1,000 Sq Ft	12.76	4.04	3.16	317
151	Mini-Warehouse	1,000 Sq Ft	2.50	56.28	0.04	22,512
150	Warehousing	1,000 Sq Ft	4.96	3.89	1.28	784
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
Other Nonresidential						
720	Medical-Dental Office	1,000 Sq Ft	36.13	8.91	4.05	247
620	Nursing Home	bed	2.37	6.55	0.36	na
610	Hospital	1,000 Sq Ft	17.57	5.20	3.38	296
565	Day Care	student	4.48	28.13	0.16	na
530	Secondary School	student	1.71	19.74	0.09	na
520	Elementary School	student	1.29	15.71	0.08	na
520	Elementary School	1,000 Sq Ft	14.49	15.71	0.92	1,084
320	Lodging	room	5.63	12.81	0.44	na

* Source: Trip Generation, Institute of Transportation Engineers (2003).

** Employees per demand unit calculated from trip rates, except for Shopping Center data, which are derived from Development Handbook and Dollars and Cents of Shopping Centers, published by the Urban Land Institute.

*** According to ITE, a Business Park is a group of flex-type buildings served by a common roadway system. The tenant space includes a variety of uses with an average mix of 20-30% office/commercial and 70-80% industrial/warehousing.

DEVELOPMENT PROJECTIONS

Key demographic data for the City of Boulder impact fee study are shown in Figure A10. Cumulative data are shown in the top section and annual increases at the bottom of the table. City of Boulder data shown with light green shading are from the 2008 Community Data

Report. Because of the recent downturn in development activity, TischlerBise used an exponential curve formula to derive interim year data between the 2008 and 2030 “end-points.” This method minimizes annual increases in the short run. Job allocation by nonresidential prototype is based on the most recent Labor Shed Area Profile Report from the U.S. Census Bureau’s website called Longitudinal Employer-Household Dynamics.

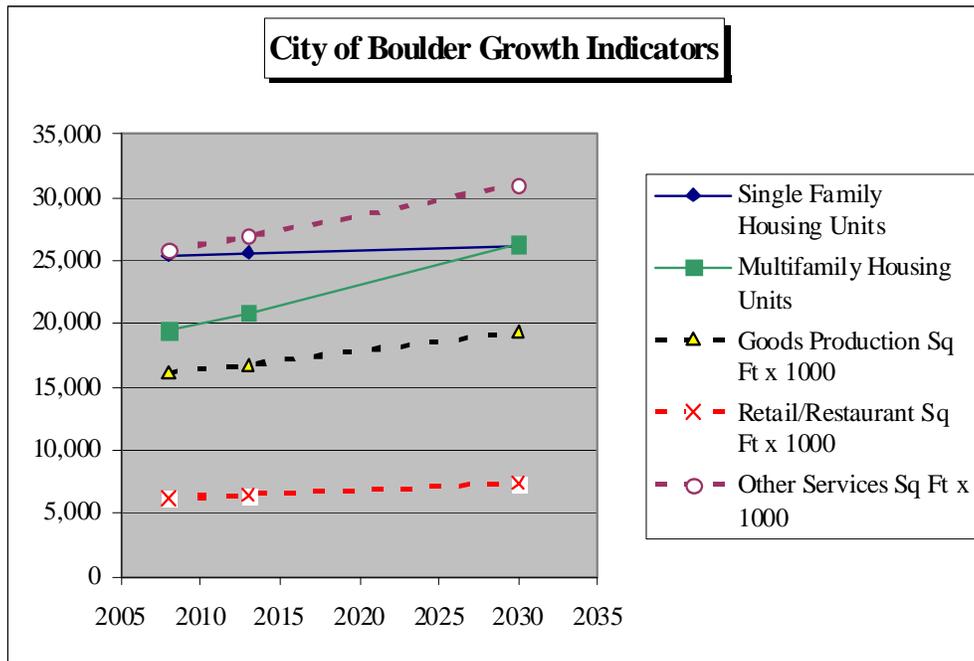
Figure A10. Citywide Demographic Data

<i>Cumulative</i>	<i>Base Year</i>							
	2000	2008	2009	2010	2011	2012	2013	2030
	<i>FY 08-09</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>22</i>	
Year-Round Population	99,093	103,100	103,754	104,413	105,076	105,743	106,414	118,500
Jobs	90,255	97,750	98,567	99,391	100,222	101,060	101,905	117,400
Housing Units	42,740	44,885	45,206	45,529	45,854	46,182	46,512	52,500
Single Family Hsg Units	23,080	25,445	25,477	25,509	25,542	25,575	25,608	26,206
All Other Hsg Units	19,660	19,440	19,729	20,020	20,313	20,608	20,905	26,294
Jobs to Housing Ratio		2.18	2.18	2.18	2.19	2.19	2.19	2.24
Persons per Hsg Unit		2.30	2.30	2.29	2.29	2.29	2.29	2.26
<u>Job Allocation by Type of Development</u>								
Goods Producing Share		21%	21%	21%	21%	21%	21%	21%
Retail/Restaurant Share		18%	18%	18%	18%	18%	18%	18%
Other Services Share		61%	61%	61%	61%	61%	61%	61%
<u>Nonres Sq Ft (x 1,000)</u>								
Goods Producing		16,090	16,230	16,360	16,500	16,640	16,780	19,330
Retail/Restaurant		6,160	6,210	6,260	6,310	6,370	6,420	7,400
Other Services		25,820	26,030	26,250	26,470	26,690	26,920	31,010
Total		48,070	48,470	48,870	49,280	49,700	50,120	57,740
Avg Sq Ft Per Job		492	492	492	492	492	492	492
								<i>2008 to 2030</i>
<u>Annual Increase</u>								<i>Increase</i>
Year-Round Population		654	659	663	667	671	676	15,400
Jobs		817	824	831	838	845	852	19,650
Housing Units		321	323	325	328	330	332	7,615
Goods Producing KSF*		140	130	140	140	140	140	3,240
Retail/Restaurant KSF*		50	50	50	60	50	50	1,240
Other Services KSF*		210	220	220	220	230	220	5,190
* KSF = square feet of floor area in thousands.								Cumulative KSF Increase =>
								Avg Anl KSF Increase =>
								9,670
								440

Key land use assumptions for City of Boulder are summarized in Figure A11. Residential growth rates range from 0.1% annually for Single Family housing to 1.5% per year for Multifamily housing types. Nonresidential growth rates average 0.8% per year. Over the next five years, housing unit construction is projected to average 326 units per year.

Figure A11. Summary of Land Use Assumptions

Boulder, Colorado	2008	2013	2030	2008 to 2013	
	FY08-09	FY13-14	FY30-31	Average Annual	
				Increase	Growth Rate
Single Family Housing Units	25,445	25,608	26,206	33	0.1%
Multifamily Housing Units	19,440	20,905	26,294	293	1.5%
Goods Production Sq Ft x 1000	16,090	16,780	19,330	138	0.9%
Retail/Restaurant Sq Ft x 1000	6,160	6,420	7,400	52	0.8%
Other Services Sq Ft x 1000	25,820	26,920	31,010	220	0.9%



Recently Approved Site Review Projects that have not yet applied for Building Permits

Project	Use	Total Non Residential square feet (sf)/ demand factor	Pre-existing sf/ demand factor	Net New
1725 28 th (Eads / Golden Buff)	Hotels, Office & Retail	270,818 sf hotel / 42,900 office, retail		
1750 14 th (James Travel)	Residential & Office	20,600 sf office		
2655 N. 63 rd (Western Disposal)	Industrial	110,000 sf		
2250 Canyon (Residence Inn)	Hotel	120,000 sf (+/-)		
4700 Pearl (Pearl Pkwy Center)	Office	319,205 sf	0	319,205
5675 Arapahoe (Flatirons Storage)	Public Storage	187,000 sf		
2930 Pearl (Google)	Office	330,000 sf		
2880 Wilderness (Boulder Beer Expansion)	Brewery	16,699 sf	15,022	1,577 sf
1215 Cedar (Washington Village II)	Attached & Detached Dwelling Units with Office	2,650 sf office		
3365 Diagonal (Kum & Go)	Gas Station & Convenience Store	4,992 sf		
2250 Pearl (Pashana Juice Shop)	Restaurant and Residential	1,260 sf for Juice Shop		

EXCISE TAXES

Section 3-8-3, and Section 3-9-2

Development Excise Taxes fund the cost of future capital improvements. The Housing Excise Tax was established to promote the development and provision of housing in the city that is affordable to low-income people.

Development and Housing Excise Taxes are assessed on new residential and nonresidential development and nonresidential additions. Excise taxes are paid prior to final inspection for new construction, or at the time of permit issuance for all other types of construction. The tax rate in effect at the time of application applies.

Tax Name	Nonresidential	Residential	
	<i>Per Square Foot</i>	<i>Per Detached Dwelling Unit</i>	<i>Per Attached Dwelling Unit or Mobile Home</i>
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

CAPITAL FACILITY IMPACT FEES

Section 4-20-62

Capital facility impact fees will be collected for capital improvements to serve new development. Residential development will be charged impact fees based on unit size. Residential additions will be charged on net additional square footage. Non-residential development will be charged impact fees based on square footage by type of use. Redevelopment will be charged for net new square footage and a change of use. Capital facility impact fees are paid prior to final inspection for new construction, or at the time of permit issuance for all other types of construction. The tax rate in effect at the time of application applies.

Impact Fee Rates for Single Family Residential per Dwelling Unit

Square Feet	Library	Parks & Recreation	Human Services	Municipal Facilities	Police	Fire	TOTAL
900 or less	\$218	\$1,489	\$70	\$133	\$139	\$99	\$2,148
901-1000	\$252	\$1,728	\$80	\$154	\$162	\$115	\$2,491
1001-1100	\$282	\$1,935	\$91	\$172	\$182	\$127	\$2,789
1101-1200	\$310	\$2,126	\$100	\$189	\$199	\$140	\$3,064
1201-1300	\$335	\$2,301	\$109	\$205	\$216	\$154	\$3,320
1301-1400	\$359	\$2,463	\$116	\$219	\$231	\$163	\$3,551
1401-1500	\$382	\$2,616	\$123	\$232	\$244	\$173	\$3,770
1501-1600	\$402	\$2,758	\$130	\$247	\$258	\$183	\$3,978

Impact Fee Rates for Single Family Residential per Dwelling Unit (con't)

Square Feet	Library	Parks & Recreation	Human Services	Municipal Facilities	Police	Fire	TOTAL
1601-1700	\$421	\$2,893	\$136	\$257	\$271	\$191	\$4,169
1701-1800	\$442	\$3,017	\$141	\$268	\$282	\$200	\$4,350
1801-1900	\$458	\$3,135	\$148	\$279	\$294	\$209	\$4,523
1901-2000	\$474	\$3,248	\$154	\$289	\$304	\$216	\$4,685
2001-2100	\$489	\$3,354	\$158	\$298	\$313	\$222	\$4,834
2101-2200	\$505	\$3,457	\$163	\$308	\$325	\$229	\$4,987
2201-2300	\$519	\$3,554	\$167	\$315	\$333	\$235	\$5,123
2301-2400	\$533	\$3,649	\$172	\$326	\$343	\$241	\$5,264
2401-2500	\$545	\$3,738	\$176	\$333	\$350	\$249	\$5,391
2501-2600	\$559	\$3,824	\$181	\$341	\$357	\$254	\$5,516
2601-2700	\$570	\$3,906	\$185	\$348	\$366	\$259	\$5,634
2701-2800	\$582	\$3,986	\$188	\$354	\$374	\$265	\$5,749
2801-2900	\$593	\$4,064	\$191	\$361	\$381	\$270	\$5,860
2901-3000	\$604	\$4,138	\$194	\$368	\$388	\$275	\$5,967
3001-3100	\$614	\$4,208	\$197	\$375	\$394	\$280	\$6,068
3101-3200	\$625	\$4,279	\$201	\$381	\$401	\$285	\$6,172
3201-3300	\$635	\$4,346	\$205	\$388	\$408	\$289	\$6,271
3301-3400	\$645	\$4,413	\$209	\$393	\$414	\$294	\$6,368
3401-3500	\$653	\$4,476	\$212	\$399	\$419	\$297	\$6,456
3501-3600	\$663	\$4,538	\$215	\$405	\$424	\$301	\$6,546
3601-3700	\$673	\$4,598	\$217	\$409	\$429	\$304	\$6,630

Impact Fee Rates for Multifamily Residential per Dwelling Unit

Square Feet	Library	Parks & Recreation	Human Services	Municipal Facilities	Police	Fire	TOTAL
600 or less	\$229	\$1,573	\$73	\$139	\$148	\$171	\$2,333
601-700	\$278	\$1,904	\$90	\$168	\$179	\$207	\$2,826
701-800	\$319	\$2,192	\$103	\$194	\$205	\$238	\$3,251
801-900	\$356	\$2,445	\$116	\$218	\$229	\$267	\$3,631
901-1000	\$390	\$2,671	\$125	\$237	\$251	\$291	\$3,965
1001-1100	\$419	\$2,875	\$136	\$256	\$270	\$313	\$4,269
1101-1200	\$448	\$3,062	\$143	\$273	\$287	\$334	\$4,547
1201-1300	\$473	\$3,234	\$152	\$288	\$302	\$353	\$4,802
1301-1400	\$494	\$3,394	\$160	\$302	\$318	\$370	\$5,038
1401-1500	\$517	\$3,543	\$166	\$314	\$332	\$388	\$5,260
1501-1600	\$537	\$3,680	\$173	\$328	\$345	\$402	\$5,465

Attachment D - City of Boulder Current DET, HET, and Capital Facility Impact Fees
Impact Fee Rates for Nonresidential

		Impact Fee Rates Per Square Foot of Nonresidential Floor Area			
		<i>Municipal Facilities</i>	<i>Police</i>	<i>Fire</i>	<i>TOTAL</i>
<i>Nonresidential Uses</i>	Retail / Restaurant	\$0.14	\$0.50	\$0.40	\$1.04
	Business Park	\$0.17	\$0.11	\$0.10	\$0.38
	Office	\$0.21	\$0.17	\$0.59	\$0.97
	Hospital	\$0.18	\$0.15	\$0.51	\$0.84
	School	\$0.04	\$0.08	\$0.13	\$0.25
	Mini-Warehouse	\$0.00	\$0.02	\$0.00	\$0.02
	Warehousing	\$0.07	\$0.04	\$0.04	\$0.15
	Light Industrial	\$0.12	\$0.06	\$0.08	\$0.26
		Impact Fee Rates for Other Nonresidential Uses Based on Unique Demand Indicators			
		<i>Municipal Facilities</i>	<i>Police</i>	<i>Fire</i>	<i>TOTAL</i>
<i>Other Nonresidential Uses</i>	Nursing Home (per bed)	\$19.80	\$22.00	\$53.89	\$95.69
	Day Care (per student)	\$7.70	\$19.80	\$24.19	\$51.69
	Lodging (per room)	\$24.19	\$52.80	\$67.10	\$144.09

Affordable Housing Linkage Fee (DT-5 nonresidential density bonus only) Nonresidential developments in the DT-5 zoning district that receive a density bonus (additional floor area) are assessed an affordable housing linkage fee of **\$9.53** per square foot for the bonus floor area. This fee is due prior to the issuance of a building permit.