Attachment B

TOWN OF VAIL

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Table of Contents

INTRODUCTION

Although Colorado is a "home-rule" state and home-rule municipalities were already collecting "impact fees" under their home-rule authority granted in the Colorado Constitution, the Colorado Legislature passed enabling legislation in 2001, as discussed further below.

Colorado Impact Fee Enabling Legislation

For local governments, the first step in evaluating funding options for transportation improvements is to determine basic options and requirements established by state law. Some states have more conservative legal parameters that basically restrict local government to specifically authorized actions. In contrast, "home-rule" states grant local governments broader powers that may or may not be precluded or preempted by state statutes depending on the circumstances and on the state's particular laws.

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

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

Additional Legal Guidelines

Both state and federal courts have recognized the imposition of impact fees on development as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. Land use regulations, development exactions, and impact fees are subject to the Fifth Amendment prohibition on taking of private property for public use without

just compensation. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is the protection of public health, safety, and welfare, by ensuring development is not detrimental to the quality of essential public services. The means to this end are also important, requiring both procedural and substantive due process. The process followed to receive community input (i.e. stakeholder meetings, work sessions, and public hearings) provides opportunities for comments and refinements to the impact fees.

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

There are three reasonable relationship requirements for development 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 development impact fees under the U.S. Constitution, TischlerBise prefers a more rigorous formulation that recognizes three elements: "need," "benefit," and "proportionality." The dual rational nexus test explicitly addresses only the first two, although proportionality is reasonably implied, and was specifically mentioned by the U.S. Supreme Court in the Dolan case. Individual elements of the nexus standard are discussed further in the following paragraphs.

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

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

terms of relevant and measurable attributes of development (e.g. a typical housing unit's vehicular trip generation rate).

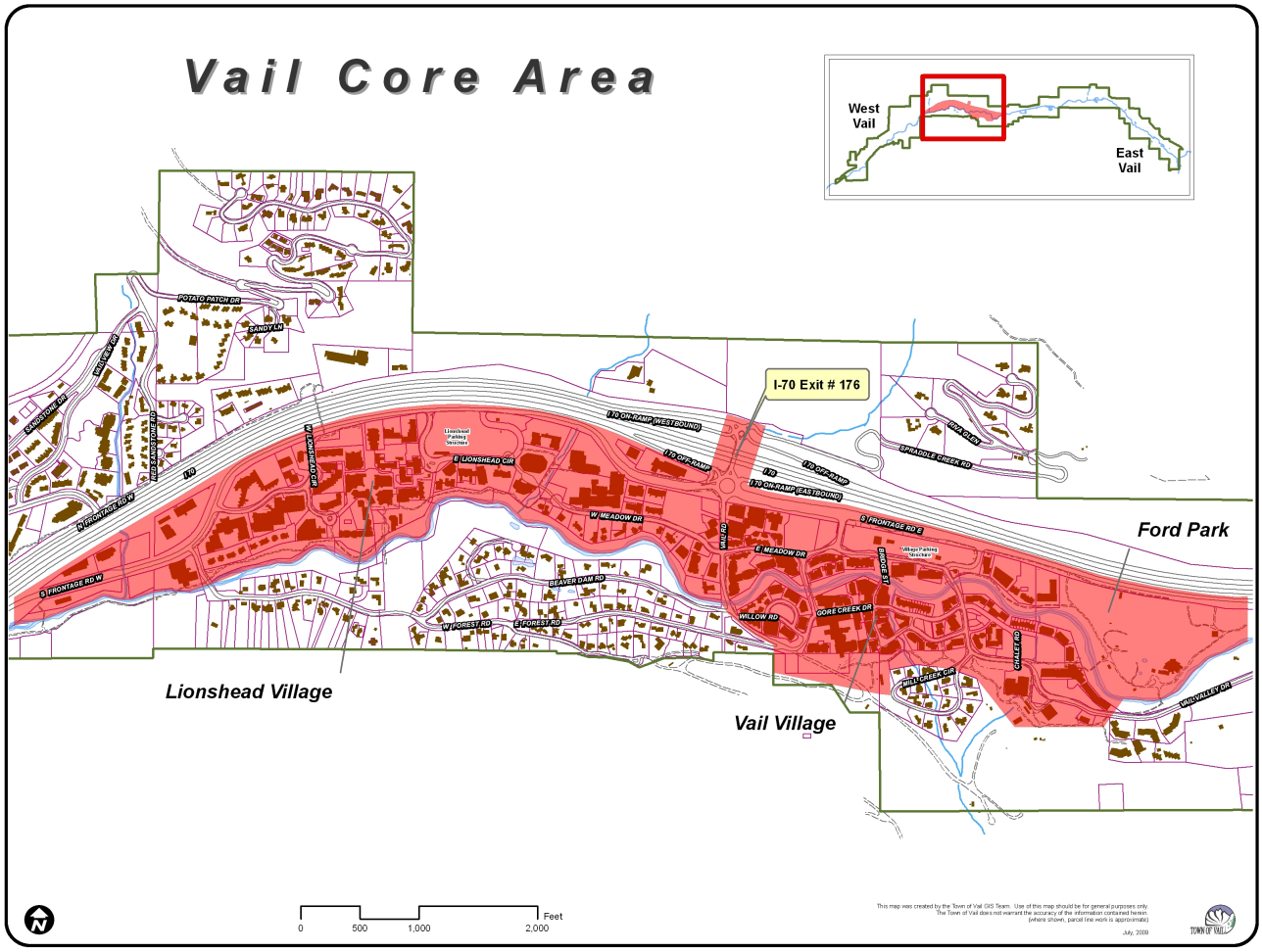
A sufficient benefit relationship requires that impact fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. The calculation of impact fees should also assume that they will be expended in a timely manner and the facilities funded by the fees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

Impact fees must increase the carrying capacity of the transportation system. Capacity projects include, but are not limited to the addition of travel lanes, intersection improvements (i.e., turning lanes, signalization or roundabouts) and "complete street" improvements to provide multimodal infrastructure (e.g. bus stops, bike lanes and sidewalks). Whenever improvements are made to existing roads, non-impact fee funding is typically required to help pay a portion of the cost.

Development Pattern in the Town of Vail

Vail is a resort community of approximately 5,000 year-round residents that surges to approximately 40,000-45,000 persons during peak tourism season when employees and visitors are present. The occupied bed base of the community swells from 5,000 to 35,000 during these peak periods. Figure 1 delineates the core area of Vail. Actual boundaries of the Town extend six miles to the east and four miles to the west of the core area (see map inset). Given its location in a mountain valley, the Town has a compact development pattern and a multi-modal transportation system that relies on pedestrian, bicycle, transit and vehicular travel. Consistent with this setting, the proposed impact fees will fund multi-modal transportation improvements necessary to accommodate projected development within the Town of Vail.

Figure 1 – Map of Town Boundary and Vail Core Area



Lower Fees in Core Area

Development of attached housing units and hotels in the core area will facilitate pedestrian, bicycle, and transit use, thus requiring less vehicular travel. In recognition of lower vehicular travel demand in the core area, proposed transportation impact fees are lower in the core area. This policy recommendation is consistent with the literature summarized in the three subsections below and a recent analysis of mixed-use developments in six regions of the United States. This study found an average 29% reduction in trip generation as a function of "D" variables, including: density, diversity, design, destination accessibility, distance to transit, demographics, and development scale (see Ewing, Greenwald, Zhang, Walters, Feldman, Cervero, Frank, and Thomas 2011).

Lower Residential Trip Generation Rates in Urban Areas

Single-family housing is generally located in low-density suburbs where there are few alternatives for travel except by private motor vehicle. On average, urban housing has fewer

persons and vehicles available, thus lowering vehicular trip generation rates per unit when compared to housing in the suburban unincorporated area. Currans and Clifton (2015) developed and tested methods for adjusting ITE trip generation rates for urban settings. They recommend mode-share adjustments based on the number of residents and jobs per acre, which serves as a proxy for urban form.

Less Auto Dependency in Urban Areas

Urban areas have distinct demographic profiles and physical traits that reduce vehicle trips, such as higher internal capture, design characteristics that promote walking and biking, and superior transit service. Urban areas with grid streets and small blocks offer a variety of routes that encourage walking and biking. Interesting streetscapes with human-scale design features encourage people to walk and bike farther in urban areas, while lowering our perception of distance (Jacobs 2001). Urban areas also have more diverse travel options including public transportation and muscle-powered mobility. A study titled "Trip Generation Rates for Urban Infill Land Uses in California" documented auto trips for infill development averaged approximately 50% of the modal share, compared to 90% or higher auto dependency in most metropolitan areas (Daisa and Parker, 2009). Lower dependency on private vehicles reduces the need for street capacity and supports an impact fee reduction for new development within the core area of Vail.

Shorter Trip Lengths in Urban Areas

Mixed land use and better job-housing balance reduces average trip length. By balancing the number of jobs with nearby housing units, urban areas have the potential for reducing journey-to-work travel. The magnitude of effect is dependent on matching job and housing locations of individual workers, which can be aided by offering a variety of housing styles and price ranges. Inclusionary policies, such as requiring at least 10% affordable housing units within each development, can foster a better jobs-housing balance and reduce the need for street capacity (Nelson, Dawkins and Sanchez 2007).

Mixed-use areas like the center of Vail exhibit lower vehicular trip rates because of "internal capture" (i.e., many daily destinations do not require travel outside the area). For example, a study titled "Internalizing Travel by Mixing Land Uses" examined 20 mixed use communities in South Florida, documenting internal capture rates up to 57 percent with an average of 25 percent. In addition to a percent reduction for the jobs-housing balance, credit can be given for local-serving retail. Urban, transit-oriented development offers coffee shops, restaurants, general retail stores and services that reduce the need for vehicular trips outside the area (Ewing, Dumbaugh and Brown 2003).

The report "Driving and the Built Environment" (TRB 2009) found a strong link between development patterns and vehicle miles of travel, encouraging mixing of land uses to reduce vehicle trip rates and reduce trip lengths. Reductions up to 24% for transit service and pedestrian/bicycle friendliness are recommended for nonresidential development in a 2005

study titled "Crediting Low-Traffic Developments" (Nelson/Nygaard Consulting Associates 2005).

Current and Proposed Transportation Fees

Figure 2 provides a comparison of current and proposed transportation fees for new development in the Town of Vail. Current amounts are shown with dark shading and white numbers. Current fees in Vail are based on the net increase in PM Peak Hour vehicle trip ends generated by the entire development, with mitigation limited to certain areas and reductions given for multi-modal travel. The Town currently assesses transportation-related mitigation fees (see Vail code section in the footnote[1]). This requirement is specific to certain zone districts and does not provide a codified fee schedule. The current fees are determined and agreed upon by the Town and developers during the development entitlement process.

Proposed fees are shown with light shading and black numbers in the table below. For consistency with a national impact fee survey, the fee amount for a detached house assumes construction of an average size unit, which in Vail and Pitkin County is approximately 4,000 square feet (i.e. twice the national average). Fee amounts for commercial development are expressed per thousand square feet of floor area.

[1] 12-7A,H,I,J: MITIGATION OF DEVELOPMENT IMPACTS: Property owners/developers shall also be responsible for mitigating direct impacts of their development on public infrastructure and in all cases mitigation shall bear a reasonable relation to the development impacts. Impacts may be determined based on reports prepared by qualified consultants. The extent of mitigation and public amenity improvements shall be balanced with the goals of redevelopment and will be determined by the planning and environmental commission in review of development projects and conditional use permits. Substantial off site impacts may include, but are not limited to, the following: deed restricted employee housing, roadway improvements, pedestrian walkway improvements, streetscape improvements, stream tract/bank restoration, loading/delivery, public art improvements, and similar improvements. The intent of this section is to only require mitigation for large scale redevelopment/development projects which produce substantial off site impacts. (Ord. 29(2005) § 24: Ord. 23(1999) § 1)

Figure 2 – Transportation Impact Fee Comparison

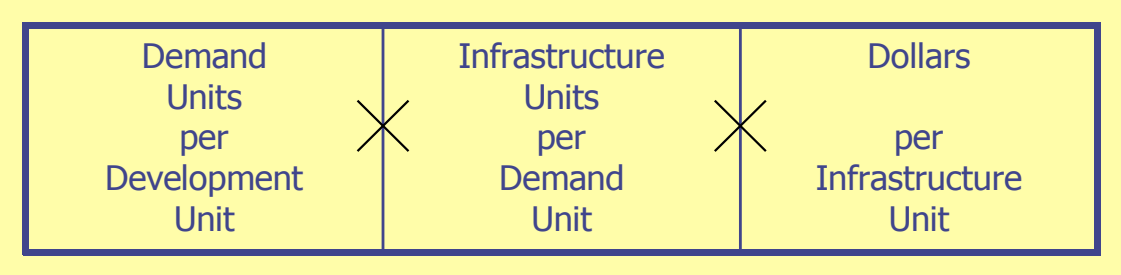
	Per Housing Unit		*Per 1,000 Sq Ft*	
	Single Family	*Multifamily*	*Retail*	*Office*
National Average (1)	$3,228	$2,202	$5,685	$3,430
Incorporated Areas in Colorado				
Durango (1)	$2,169	$1,298	$3,810	$2,823
Ft. Collins 2016 Draft (2)	$6,217	$4,095	$8,113	$5,977
Vail current*	$0	$2,366	$10,569	$9,685
Proposed in Core Area of Vail (2)	not applicable	$5,960	$13,900	$6,200
Proposed Outside Core Area (2)	$9,686	$7,450	$13,900	$6,200
Counties in Colorado				
Eagle Co. (1)	$4,378	$3,034	$9,026	$5,164
Jefferson Co. (1)	$3,276	$2,725	$7,120	$4,790
Larimer Co. (2)	$3,418		$8,812	$4,726
Pitkin Co. (2)	$9,339	$5,115	$10,910	$5,130
Weld Co. (2)	$2,377		$3,296	$2,174

Sources: (1) National Impact Fee Survey by Duncan Associations (2012). Single Family assumes 2,000 square feet. Nonresidential fees per thousand square feet assume a building with 100,000 square feet of floor area.
(2) TischlerBise. Single Family in Vail and Pitkin County assumes 4,000 square feet.
** Current fees in Vail are based on the net increase in PM Peak Hour vehicle trip ends generated by the entire development, with mitigation limited to certain areas and*

TRANSPORTATION IMPACT FEES

Basic steps in a conceptual impact fee formula are illustrated below (see Figure 3). The first step (see the left part of the equation) is to determine an appropriate demand indicator, for a particular type of infrastructure. The demand indicator measures the number of demand units for each unit of development. For example, an appropriate indicator of the demand for roads is vehicle trips. The second step in the conceptual impact fee formula is shown in the middle section of the equation. Infrastructure units per demand unit are typically called Level-Of-Service (LOS) or infrastructure standards. Road impact fee studies for suburban communities often establish a relationship between lane miles and vehicle miles of travel (note: a lane mile is a rectangular area of pavement one lane wide and one mile long). Because the Town of Vail has a more compact, urban development pattern, multi-modal transportation improvements were identified in a recently approved Transportation Master Plan. In essence, the Town of Vail has combined the second and third step in the conceptual impact fee formula (see the right side of the equation below). The cost of growth-related transportation improvements was allocated to the expected increase in vehicle trips.

Figure 3 – Conceptual Impact Fee Formula



When applied to specific types of infrastructure, the conceptual impact-fee formula is customized using three common impact fee methods that focus on different timeframes. The first method is the ***cost recovery method***. To the extent that new growth and development is served by previously constructed improvements, local government may seek reimbursement for the previously incurred public facility costs. This method is used for facilities that have adequate capacity to accommodate new development, at least for the next five years. The rationale for the cost recovery approach is that new development is paying for its share of the useful life or remaining capacity of an existing facility that was constructed in anticipation of additional development. The second basic approach used to calculate impact fees is the ***incremental expansion cost method***. This method documents the current infrastructure standard for each type of public facility in both quantitative and qualitative measures. The local government uses impact fee revenue to incrementally expand infrastructure as needed to accommodate new development. A third impact fee approach is the ***plan-based method***. This method is best suited for public facilities that have commonly accepted engineering/planning standards or specific capital improvement plans. Proposed transportation impact fees for the

Town of Vail are derived using a plan-based method, with one cost recovery item for the recently completed I-70 underpass.

Trip Generation

Transportation models and traffic studies for individual development projects typically use average weekday or afternoon (PM), peak-hour trips. The need for transportation improvements in Vail was determined through the Transportation Master Plan process using an extensive engineering analysis. In contrast to the engineering analysis, the impact fee methodology is essentially an accounting exercise whereby the cost of growth-related system improvements is allocated to new development within the Town of Vail. For the purpose of impact fees, trip generation is based on attraction (inbound) trips to development located in the Town of Vail. This approach eliminates the need for adjustments to account for pass-through trips (i.e. external-external travel) and trips to destinations outside Vail (i.e. internal-external travel).

One of the major trip destinations in Vail is the base of the ski mountain. In addition to people working in Town and those staying over night, the ski mountain draws thousands of 'day skiers' that typically leave their vehicles in a parking garage while in Town. Because parking structures are ancillary uses, impact fees are typically not imposed on the floor area of a garage, but the floor area of nearby development that actually attracts people to the area. Given this practice, future growth of 'day skiers' will not be directly accounted for in the development projections shown in Figure 4. However, the Town and Vail Resorts have agreed the maximum skiers at one time that can be handled by the Town's infrastructure is 19,900, as specified in the agreement titled "Town of Vail & Vail Associates, Inc. Program to Manage Peak Periods." Therefore, if the maximum-skiers agreement or lift capacity is increased without a significant increase in nonresidential buildings, a traffic impact fee for additional day skiers should be contemplated.

Vehicle Trips to Development in the Town of Vail

The relationship between the amount of new development anticipated within Vail and the projected increase in vehicle trips is shown in Figure 4. Expected development in Vail is based on trends within the Town, Eagle County, and the state of Colorado. The projected increase in development and afternoon, peak-hour trips are consistent with Appendix E in Vail's Transportation Master Plan (FHU 2009) and the development stats database, updated by Town staff. Although the specific year is not important to the analysis, the net increase in development is expected to occur by the year 2040. A faster pace of development would accelerate the collection of impact fees and the construction of planned improvements. Conversely, slower development would reduce fee revenue and delay the construction of capital improvements. As shown in the bottom right corner of the table below, planned development in Vail is expected to generate an additional 838 PM-Peak inbound vehicle trips.

Figure 4 – Summary of Projected Travel Demand

Development Type	*Additional Development Units (2)*	*Inbound Trip Rate per Development Unit (3)*	*Additional PM-Peak Inbound Trips*
Two Family or Multiple Family Units in Core Area	705	0.24	169
Two Family or Multiple Family Units Outside Core	554	0.30	166
Employee Housing Units in Core Area	41	0.24	10
Employee Housing Units Outside Core	310	0.30	93
Single Family Units	120	0.39	47
Accommodation Units in Core Area	270	0.24	65
Accommodation Units Outside Core	102	0.30	31
Restaurant & Retail KSF (1)	320	0.56	179
Facilities Health Care KSF (1)	140	0.40	56
Office & Other Services KSF (1)	88	0.25	22
		TOTAL =>	838

(1) KSF = square feet of floor area in thousands.
(2) Appendix E, Vail Transportation Master Plan (FHU 2009) and Town staff (12/06/16).
(3) Trip generation rates are from Appendix E, Vail Transportation Master Plan, except

Transportation Impact Fee System Improvements

Transportation system improvements to be funded by impact fees are shown in Figure 5. Specific projects were identified in the Transportation Master Plan for the Town of Vail and updated by Town staff. Road sections listed below will be constructed as "complete streets" with bus, bicycle, and pedestrian improvements. Town staff prepared the planning-level cost estimates and identified the growth share of projects that will be funded with impact fees, based on the expected increase in vehicular trips.

The total cost of transportation improvements needed to accommodate new development through 2040 is estimated to be approximately $95 million in current dollars (not inflated over time). Impact fees will fund approximately $20.8 million, which is 28% of systems improvements. Funding from non-impact fee sources, such as the Colorado Department of Transportation (CDOT), Real Estate Transfer Tax (RETT), and the Town of Vail General Fund will cover the remaining cost of system improvements. As shown in the bottom right corner of the table below, the capacity cost of $24,836 per additional trip is equal to the growth share of transportation improvements divided by the increase in PM-Peak inbound vehicle trips.

Figure 5 – Summary of Transportation Improvements and Growth Share

Transportation Improvements Town of Vail, Colorado		Estimated Cost	Project-Level Cost	*System-Level Improvements*			
ID	PROJECT DESCRIPTION	(Millions)		Percent Funded By Impact Fee	Percent Other Revenue	Cost by Impact Fee	Cost by Other Revenue
A	West Vail Commercial Roundabout & Medians	$ 6.70	$ 6.70	0%	0%	$ -	$ -
B	Buffehr Creek Turn Lanes	$ 1.20	$ -	52%	48%	$ 0.62	$ 0.58
C	Buffehr Creek NRT connection to Marriott Roost	$ 0.50	$ 0.50	0%	0%	$ -	$ -
D	Marriott Roost Turn Lanes	$ 1.20	$ 1.20	0%	0%	$ -	$ -
E	Timber Ridge Turn Lanes	$ 1.20	$ 1.20	0%	0%	$ -	$ -
F	Lions Ridge Loop Turn Lanes	$ 1.20	$ -	35%	65%	$ 0.41	$ 0.79
G	Red Sandstone Drive Turn lanes	$ 1.20	$ -	35%	65%	$ 0.41	$ 0.79
H	Main Vail North Roundabout Expansion to Two Lanes	$ 5.60	$ -	35%	65%	$ 1.98	$ 3.62
I	Main Vail Underpass Revesible Lane	$ 2.00	$ -	35%	65%	$ 0.71	$ 1.29
J	Gore Creek Drive Turn Lanes	$ 1.20	$ -	14%	86%	$ 0.17	$ 1.03
K	Underpass (Cost Recovery)	$ 9.10	$ -	22%	78%	$ 1.96	$ 7.14
L	Underpass to Forest Road Imrpovements (5 Lane/Walk)	$ 7.00	$ 7.00	0%	0%	$ -	$ -
M	Vail Spa to ELHC Improvements (5 Lane/Walk)	$ 4.50	$ -	46%	54%	$ 2.05	$ 2.45
N	ELHC to LH Parking Structure Entrance Medians	$ 0.75	$ -	46%	54%	$ 0.34	$ 0.41
O	LH Parking Structure Entrance to Municipal Bldg (5 Lane & Rdabt)	$ 9.00	$ 2.25	39%	36%	$ 3.55	$ 3.20
P	Village Ctr Road to Vail Valley Drive (Medians, TC Device, Compact Rdabt)	$ 6.50	$ -	29%	71%	$ 1.92	$ 4.58
Q	PW/VVD Turn Lanes	$ 1.20	$ -	27%	73%	$ 0.33	$ 0.87
R	Booth Creek Turn Lanes	$ 1.20	$ -	27%	73%	$ 0.33	$ 0.87
S	GVT Dowd Junction to WV Rdabt	$ 8.50	$ -	22%	78%	$ 1.83	$ 6.67
T	Donovan to Westhaven Drive Walk	$ 1.50	$ -	22%	78%	$ 0.32	$ 1.18
U	WLHC walk (Vail Spa to S. Frtge)	$ 0.75	$ 0.75	0%	0%	$ -	$ -
V	VVD Path imrpovements	$ 1.20	$ -	22%	78%	$ 0.26	$ 0.94
W	Vail Rd (Willow Way to Forest Rd) Walk	$ 0.50	$ -	22%	78%	$ 0.11	$ 0.39
X	ELHC (LHWC to Dobson) Walk	$ 1.00	$ -	22%	78%	$ 0.22	$ 0.78
Y	West Vail Pedestrian Overpass	$ 6.00	$ -	22%	78%	$ 1.29	$ 4.71
Z	VMS to Bighorn Path	$ 1.50	$ -	22%	78%	$ 0.32	$ 1.18
AA	ELHC (Vantage Point to S. Frontage Road) Walk	$ 0.20	$ -	22%	78%	$ 0.04	$ 0.16
BB	Chamonix (Arosa to Chamonix)	$ 1.00	$ -	22%	78%	$ 0.22	$ 0.78
CC	Chamonix (Chamonix to Buffehr Creek Rd)	$ 1.00	$ -	22%	78%	$ 0.22	$ 0.78
DD	Line Haul Transit Stop Improvement Projects	$ 1.60	$ -	22%	78%	$ 0.34	$ 1.26
EE	Vail Bus Stops (10 Shelters)	$ 1.50	$ -	22%	78%	$ 0.32	$ 1.18
FF	Arosa Transit Parking	$ 2.50	$ -	22%	78%	$ 0.54	$ 1.96
GG	Frontage Road Lighting Improvements	$ 5.00	$ -	0%	100%	$ -	$ 5.00
HH	Structured Parking Expansion & Buses	$ -	$ -	0%	100%	$ -	$ -
	Grand Totals	**$ 95.00**	**$ 19.60**	28%	72%	**$ 20.81**	**$ 54.59**
					Net New PM Peak Inbound Trips =>	*838*	
					Capacity Cost per Additional PM Peak Inbound Trip =>	$ 24,836	

Credit for Other Revenues

A general requirement that is common to impact fee methodologies is the evaluation of credits. A revenue credit may be necessary to avoid potential double payment situations arising from the one-time payment of an impact fee plus other revenue payments that may also fund growth-related capital improvements. The determination of credits is dependent upon the impact fee methodology used in the cost analysis. Vail's transportation impact fees are derived primarily using a plan-based method, with a minor cost recovery component for the recently completed I-70 underpass. This method is based on future capital improvements needed to accommodate new development. Given the plan-based approach, the credit evaluation focuses on the need for future bonds and revenues that will fund planned capital improvements. Because the Town does not expect to bond finance transportation projects, a revenue credit for future principal payments is not applicable.

Some impact fee studies include a credit for gas taxes and/or General Fund revenue. A credit for future revenue generated by new development is only necessary if there is potential double payment for system improvements. In the Town of Vail, transportation impact fees are derived from the growth cost of system improvements, not the total cost of capital improvements. Impact fee revenue will be used exclusively for the growth share of improvements listed in Figure 5. Other, non-impact fee funds, such as the General Fund and gas tax revenue, will be used for maintenance of existing facilities, correcting existing deficiencies and for making improvements not listed in the transportation CIP. Based on expected development in Vail (see Figure 8), future impact fee revenue approximates the growth cost of planned system improvements (approximately $21 million). If elected officials in Vail make a legislative policy decision to fully fund the growth share of system improvements from impact fees, a credit for other revenue sources is unnecessary.

Transportation Impact Fee Formula and Input Variables

Input variables for the transportation impact fee are shown in Figure 6. Inbound trips by type of development are multiplied by the net capital cost per trip to yield the transportation impact fees. For example, the transportation impact fee formula for a two family or multiple family unit in the core area is 0.24 x $24,836 = $5,960 (truncated) per housing unit. Because the core area of Vail has a walkable, urban development pattern, impact fees for two family or multiple family housing and accommodation units are lower in the core area, as supported by the engineering analysis in the adopted Transportation Master Plan (FHU 2009). Trip generation rates are from the Transportation Master Plan, except for single family dwellings, which are only expected outside the core area. Inbound trip rates per detached dwelling are documented in Appendix A.

Figure 6 – Transportation Impact Fee Input Variables

	PM-Peak Inbound Vehicle Trips
Residentail Dwellings (per Unit)	
Dwelling, Two Family or Multiple Family (In Core Area)	0.24
Dwelling, Two Family or Multiple Family (Outside Core Area)	0.30
Dwelling, Single Family	0.39
Accommodation Unit (per Unit)	
Accommodation Unit (In Core Area)	0.24
Accommodation Unit (Outside Core Area)	0.30
Commercial (per 1,000 Sq Ft of floor area)	
Restaurant & Retail Establishments	0.56
Facilities Health Care	0.40
Office & Other Services	0.25
Infrastructure Standards	
Cost per Trip =>	$24,836
Revenue Credit Per Trip =>	$0

Maximum Supportable Transportation Impact Fees

The input variables discussed above yield the maximum supportable impact fees shown in Figure 7. Fees for most types of commercial development are listed per square foot of floor area. The impact fee for accommodation is based on the number of units.

Figure 7 – Transportation Impact Fee Schedule

Maximum Supportable Transportation Impact Fees	
Residentail Dwellings (per Unit)	
Dwelling, Two Family or Multiple Family (In the Core Area)	$5,960
Dwelling, Two Family or Multiple Family (Outside the Core Area)	$7,450
Dwelling, Single Family	$9,686
Employee Housing Unit	$0
Accommodation Unit (per Unit)	
Accommodation Unit (In Core Area)	$5,960
Accommodation Unit (Outside Core Area)	$7,450
Commercial (per square foot of floor area)	
Restaurant & Retail Establishments	$13.90
Facilities Health Care	$9.93
Office & Other Services	$6.20

Funding Strategy for Transportation System Improvements

Revenue projections shown below assume implementation of the maximum supportable transportation impact fee. Projected revenues essentially match the growth share of the capital improvements plan for transportation (i.e. $20.8 million). Impact fee revenue can be accumulated over several years to construct major projects, but annually completing at least one capital project will ensure benefit to fee payers. The percentage of total impact fee revenue expected from each development type is shown below in the right column. New housing units in Vail will generate approximately 58% of the transportation impact fee revenue. New accommodation will generate approximately 11%, while other types of commercial development will yield approximately 31% of projected revenue.

Figure 8 – Impact Fee Revenue Projection

Development Type	*Additional Development Units*	*Fee per Development Unit*	*Projected Revenue*	*Percent of Impact Fees*
Two Family or Multiple Family Units in Core Area	705	$5,960	$4,202,000	20%
Two Family or Multiple Family Units Outside Core	554	$7,450	$4,127,000	20%
Employee Housing Units in Core Area	41	$5,960	$244,000	1%
Employee Housing Units Outside Core	310	$7,450	$2,310,000	11%
Single Family Units	120	$9,686	$1,162,000	6%
Accommodation Units in Core Area	270	$5,960	$1,609,000	8%
Accommodation Units Outside Core	102	$7,450	$760,000	4%
Restaurant & Retail KSF	320	$13,900	$4,448,000	21%
Facilities Health Care KSF	140	$9,930	$1,390,000	7%
Office & Other Services KSF	88	$6,200	$546,000	3%
		Total =>	$20,798,000	100%

APPENDIX A – DEMOGRAPHIC DATA

In this Appendix, TischlerBise documents the demographic data used to derive trip rates by size of single family housing. In the Town of Vail, the fiscal year begins on January 1st. Impact fees are calibrated using 2016 as the base year and 2017 as the first projection year.

Trip Generation by Type and Size of Housing

Although the Town of Vail only expects a few single family (detached) housing units to be constructed each year, TischlerBise recommends a fee schedule whereby larger units pay higher transportation impact fees. Benefits of the proposed methodology include: 1) proportionate assessment of infrastructure demand using local demographic data, 2) progressive fee structure (i.e. smaller units pay less and larger units pay more), and 3) more affordable fees for workforce housing.

Custom tabulations of demographic data by bedroom range can be created from individual survey responses provided by the American Community Survey (ACS) published by the U.S. Census Bureau, in files known as Public Use Microdata Samples (PUMS). Because PUMS files are available for areas of roughly 100,000 persons, the Town of Vail is included in Public Use Microdata Area (PUMA) 400 that includes Pitkin, Eagle, Summit, Grand and Jackson Counties. At the top of Figure A1, cells with yellow shading indicate the survey results, which yield the unadjusted number of persons and vehicles available per dwelling. These multipliers are adjusted to match the control totals for Vail. According to ACS table B25033 (five-year estimates) Vail had 5,277 year-round residents in 2014 and table B25032 indicates Vail had 2,451 households in 2014, or an average of 2.15 persons per household. TischlerBise used ACS tables B25046 and B25032 to derive the average number of vehicles available per household. In 2014, there were 3,738 aggregate vehicles available and 2,451 households, or an average of 1.53 vehicles available per household.

The middle section of Figure A1 provides nation-wide data from the Institute of Transportation Engineers (ITE). VTE is the acronym for Vehicle Trip Ends, which measures vehicles coming and going from a development. Dividing trip ends per household by trip ends per person yields an average of 2.17 persons per occupied condominium/townhouse and 3.78 persons per occupied single dwelling, based on ITE's national survey. Applying Vail's current housing mix of 77.7% condominium/townhouses and 22.3% single-family dwellings yields a weighted average of 2.53 persons per household. In comparison to the national data, Vail only has an average of 2.15 persons per household.

Dividing trip ends per household by trip ends per vehicle available yields an average of 1.68 vehicles available per occupied condo/townhouse and 1.52 vehicles available per occupied single dwelling, based on ITE's national survey. Applying Vail's current housing mix yields a nation-wide weighted average of 1.64 vehicles available per household. In comparison to the national data, Vail has fewer vehicles available, with an average of 1.53 per housing unit.

Rather than rely on one methodology, the recommended trip generation rates shown in the bottom section of Figure A1 (see Vail PM-Peak VTE per Household), are an average of trip rates based on persons and vehicles available, for single family housing units by bedroom range. In the Town of Vail, each household in a single family unit is expected to generate an average of 0.57 PM-Peak Vehicle Trip Ends, compared to the national average of 0.63 trip ends per household.

Figure A1 – PM Peak Hour Vehicle Attraction Trips by Size of Detached House

Calibrated to Demographic Control Totals for Vail, Colorado

ACS 2013 5-Year PUMS Data for PUMA 400 (Pitkin, Eagle, Summit, Grand and Jackson Counties)

Bedroom Range	*Persons (1)*	*Vehicles Available (1)*	*Households (1)*	*PUMA 400 Hshld Mix*	*Unadjusted Persons/Hshld*	*Adj Persons per Hshld (2)*	*Unadjusted VehAvl/Hshld*	*Adj Veh Avl per Hshld (2)*
0-2	134	156	75	19.7%	1.79	1.62	2.08	1.38
3	409	376	165	43.4%	2.48	2.24	2.28	1.52
4	248	229	97	25.5%	2.56	2.31	2.36	1.57
5+	114	112	43	11.3%	2.65	2.39	2.60	1.73
Total	905	873	380		2.38	2.15	2.30	1.53

National Averages According to ITE

ITE Code	*PM-Peak VTE per Person*	*PM-Peak VTE per Vehicle Available*	*PM-Peak VTE per Household*	*Vail Hshld Mix*	*Persons per Household*	*Veh Avl per Household*
230 Condo / Townhouse	0.24	0.31	0.52	77.7%	2.17	1.68
210 SFD	0.27	0.67	1.02	22.3%	3.78	1.52
Wgtd Avg	0.25	0.39	0.63		2.53	1.64

Recommended Trip Rate by Bedroom Range

Bedroom Range	*PM-Peak VTE per Hshld Based on Persons (3)*	*PM-Peak VTE per Hshld Based on Veh Available (4)*	*Vail PM-Peak VTE per Hshld (5)*
0-2	0.41	0.54	**0.48**
3	0.56	0.59	**0.58**
4	0.58	0.61	**0.60**
5+	0.60	0.67	**0.64**
Total	0.54	0.60	0.57

(1) American Community Survey, Public Use Microdata Sample for CO PUMA 400 (2013 Five-Year unweighted data).
(2) Adjusted multipliers are scaled to make the average PUMS values match control totals for Vail (ACS 2014 Five-Year data).
(3) Adjusted persons per household multiplied by national weighted average trip rate per person.
(4) Adjusted vehicles available per household multiplied by national weighted average trip rate per vehicle available.
(5) Average of trip rates based on persons and vehicles available per housing unit. Does not show adjustment to inbound trips (64% entering).

Trip Generation by Floor Area of Single Family Housing

To derive afternoon peak hour inbound trips by square feet of single family housing, TischlerBise combined demographic data from the Census Bureau (discussed above) and single family house size data from the County Assessor's parcel database. The number of bedrooms per housing unit is the common connection between the two databases. In Vail, the average size single family housing unit with two or less bedrooms has 1,594 square feet of heated space. The average three-bedroom unit has 2,667 square feet of floor area. The average size of a four-bedroom unit is 3,698 square feet of floor area. Single family housing units with five or more bedrooms average 5,706 square feet of floor area.

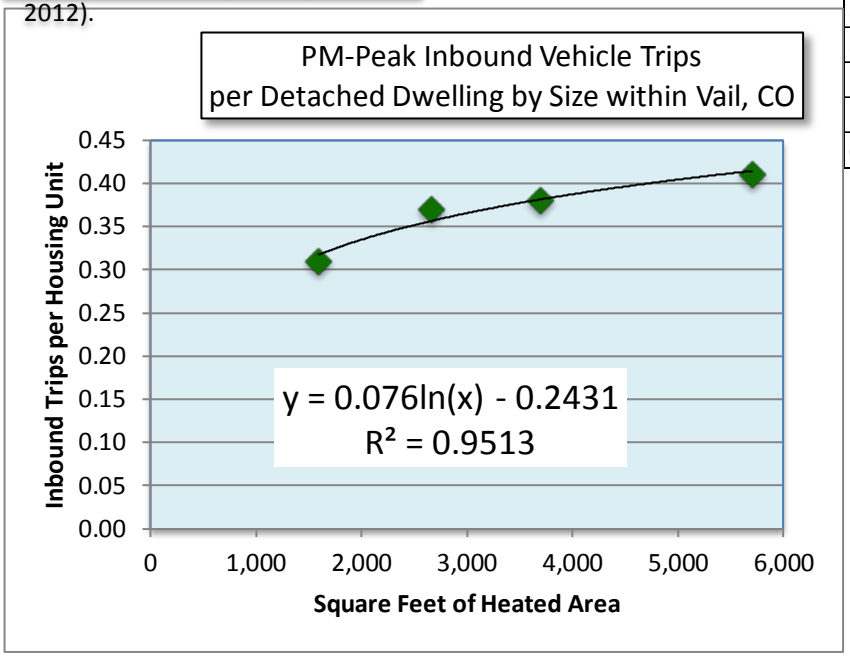
Average floor area and number of inbound trips by bedroom range are plotted in Figure A2, with a logarithmic trend line derived from the four actual averages in the Town of Vail. TischlerBise used the trend line formula to derive estimated average PM-Peak, inbound trips by size of single family housing unit, in 300 square feet intervals. Square feet measures heated floor area (excluding porches, garages, unfinished basements, etc.).

Based on the size of single family housing units in Vail, TischlerBise recommends limiting transportation impact fees for single family housing to the floor area range shown below. In other words, a single family house with 2,099 or less square feet would pay a transportation impact fee based on 0.33 inbound vehicle trips. Likewise, single family units with 6,300 or more square feet of heated space would pay a maximum transportation impact fee based on 0.42 inbound vehicle trips.

Figure A2 – PM Peak Hour Inbound Trips by Square Feet

Average dwelling size by bedroom range is from County Assessor parcel database. PM-Peak vehicle trip ends are derived using ACS PUMS data and calibrated to Town of Vail demographics. Inbound trips are 64% of trip ends (ITE 2012).

Actual Averages per Hsg Unit			*Fitted-Curve Values*	
Bedrooms	*Square Feet*	*Inbound Trips*	*Square Feet*	*Inbound Trips*
0-2	1,594	0.31	2099 or less	0.33
3	2,667	0.37	2100 to 2599	0.34
4	3,698	0.38	2600 to 3099	0.35
5+	5,706	0.41	3100 to 3599	0.37
			3600 to 4099	0.38
			4100 to 4599	0.39
			4600 to 5099	0.40
			5100 to 5599	0.41
			5600 to 6099	0.41
			6100 or more	0.42



APPENDIX B: IMPLEMENTATION AND ADMINISTRATION

Development impact fees should be periodically evaluated and updated to reflect recent data. One approach is to adjust for inflation using an index, such as the Engineering News Record (ENR) Construction Cost Index published by McGraw-Hill Companies. This index could be applied to the adopted impact fee schedule. If cost estimates or demand indicators change significantly, the Town should redo the fee calculations.

Colorado's enabling legislation allows local governments to "waive an impact fee or other similar development charge on the development of low or moderate income housing, or affordable employee housing, as defined by the local government." However, projected impact fee revenue from employee housing accounts for approximately 12% of the growth cost to be funded by impact fees. Given this magnitude, waiving impact fees for workforce housing will create a significant funding gap.

Credits and Reimbursements

Specific policies and procedures related to site-specific credits or developer reimbursements will be addressed in the ordinance that establishes the transportation impact fees. Project-level improvements, normally required as part of the development approval process, are not eligible for credits against impact fees. If a developer constructs a system improvement (see the impact fee funded improvements listed in Figure 5), it will be necessary to either reimburse the developer or provide a site-specific credit. The latter option is more difficult to administer because it creates unique fees for specific geographic areas. TischlerBise recommends establishing reimbursement agreements with the developers that construct a system improvement. The reimbursement agreement should be limited to a payback period of no more than ten years and the Town should not pay interest on the outstanding balance. The developer must provide sufficient documentation of the actual cost incurred for the system improvement. The Town should only agree to pay the lesser of the actual construction cost or the estimated cost used in the impact fee analysis. If the Town pays more than the cost used in the fee analysis, there will be insufficient impact fee revenue. Reimbursement agreements should only obligate the Town to reimburse developers annually according to actual fee collections from the service area. If the Town collects impact fees for other types of infrastructure, site specific credits or developer reimbursements for one type of system improvement does not negate payment of impact fees for other types of infrastructure.

Town-wide Service Area

The transportation impact fee service area is defined as the entire incorporated area within the Town of Vail. Even though Colorado's enabling legislation uses the phrase "direct benefit" Vail is a relatively small geographic area with a strong core area. Transportation improvements along the I-70 corridor will benefit new development throughout the entire Town.

Development Categories

Proposed transportation fees are assessed based on general land use categories. The categories within the Transportation Impact Fee Schedule are further defined within Title 12-2-2 of the Town of Vail Code. Any uses or development types not specifically defined below or within Title 12-2-2 shall be interpreted by the Administrator in accordance with the Vail Transportation Impact Fee Study.

Residential Development

Residential development categories represent general groups of land uses that share similar characteristics.

1. **Single Family** includes:
    - Dwelling, Single-Family
2. **Two Family or Multiple Family** includes:
    - Dwelling, Multiple-Family
    - Dwelling, Two-Family
    - Fractional Fee Club Unit
3. **Accommodation** includes:
    - Accommodation Unit
    - Accommodation Unit, Attached
    - Lodge Dwelling Unit
    - Lodge, Limited Service
    - Timeshare Unit

Commercial Development

Commercial development categories represent general groups of land uses that share similar characteristics.

1. **Facilities Health Care** includes:
    - Healthcare Facilities
2. **Office & Other Services** includes:
    - Professional Offices, Business Offices, and Studios
    - Banks and Financial Institutions
    - Personal Services and Repair Shops
    - Child Daycare Center
    - Health Clubs / Spas
    - Commercial Ski Storage / Ski Clubs
    - Religious Institutions
3. **Restaurant & Retail** includes:
    - Eating and Drinking Establishments
    - Retail Stores and Establishments
    - Theaters

Even though churches are a common type of development, they do not have a specific impact fee category due to a lack of sufficient data. For churches and any other atypical development, staff must establish a consistent administrative process to reasonably treat similar developments in a similar way. When presented with a development type that does not match one of the development categories in the published fee schedule, the ***first option*** is to look in the ITE trip generation book to see if there is land use category with valid trip rates that match the proposed development. The ***second option*** is to determine the published category that is most like the proposed development. Churches without daycare or schools are basically an office area (used throughout the week) with a large auditorium and class space (used periodically during the week). Some jurisdictions make a policy decision to impose impact fees on churches based on the fee schedule for warehousing. The rationale for this policy is the finding that churches are large buildings that generate little weekday traffic and only have a few full time employees. A ***third option*** is to impose impact fees on churches by breaking down the building floor area into its primary use. For example, a church with 25,000 square feet of floor area may have 2,000 square feet of office space used by employees throughout the week. At a minimum, impact fees could be imposed on the office floor area. An additional impact fee amount could be imposed for the remainder of the building based on the rate for a warehouse.

An applicant may submit an independent study to document unique demand indicators for a particular development. The independent study must be prepared by a professional engineer or certified planner and use the same type of input variables as those in the transportation impact fee methodology. The independent fee study will be reviewed by Town staff and can be accepted as the basis for a unique fee calculation. If staff determines the independent fee study is not reasonable, the applicant may appeal the administrative decision to elected officials for their consideration.

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