THE TOWN OF VAIL, COLORADO

NEXUS/PROPORTIONALITY ANALYSIS
FOR EMPLOYEE HOUSING MITIGATION PROGRAMS

Introduction

The Town of Vail is reviewing employee housing mitigation programs for both commercial and residential development. Linkage programs would require that developers of commercial and residential space contribute to the provision of affordable housing in proportion to the affordable housing need that they generate by creating new employment. The basic premise of employee housing mitigation programs is that new commercial and residential development fuels demand for housing by generating new jobs. In the Town of Vail, and other areas where land is expensive and housing demand is largely affected by wealth from outside the region, the private market tends to supply housing that is priced beyond the reach of most local employees. This results in an undersupply of adequate housing that is affordable for low- to middle-income employees and, therefore, also results in housing prices that tend to escalate much faster than wages.

This report establishes the link between new commercial and residential development and the demand for employees. It provides a rationale for determining the percentage of employees that could be mitigated by new development through linkage programs and presents a formula for determining the amount of fee that could be paid in lieu of producing units. This report does not address inclusionary zoning requirements, given that a nexus/proportionality analysis is not required for inclusionary programs.

Legal Tests

There are several legal considerations involved in the design of impact mitigation regulations. First, a “rational nexus” must be demonstrated between the impacts caused by a development and the nature of the mitigation required. Second, there must be a “rough proportionality” between the extent of the impacts generated and the extent of the mitigation required. In other words, there must be a direct relationship between the need for affordable housing and the parties upon which mitigation requirements are imposed. In addition, the fee must be no greater than the cost of mitigating the direct impacts from the specific developments. Therefore, it must be demonstrated that new development creates the need for affordable housing and that the fee assessed will be no greater than the cost of providing housing for employees generated by the development.

Methodology

The following seven-step process is used to establish a nexus/proportionality formula for these employee mitigation programs. The process uses well-documented statistics from primary research conducted in the Town of Vail and other mountain resort communities in Colorado and neighboring states to provide a method for quantifying the number of jobs and corresponding housing demand generated by development. The steps are:

1. Identifying the level of service appropriate for the Town of Vail in terms of the percentage of low-income households and employees for which housing is to be ensured;

2. Determining the number of jobs generated by existing commercial and residential development to calculate the housing demand generated by new development;

3. Accounting for multiple job holding to avoid double counting employees;

4. Converting the number of employees to households by applying an employees per household ratio;

5. Identifying the households to target in the employee housing mitigation programs by examining the income levels of the Town of Vail's residents;

6. Crediting developments for previous contributions to employee housing; and

7. Consolidating the information on job generation, job holding patterns, employees per household, and income levels into a formula that can be applied to commercial, residential, or mixed-use projects to calculate mitigation requirements.

The above formula often results in a fraction of a dwelling unit being required. When this occurs, or in other circumstances as may be permitted by the Town, the Town may permit fees to be paid in lieu of producing units. The amount of the payment in lieu is based on the affordability gap, which is the difference between what targeted households can afford to pay and market prices for housing. This report concludes with an estimate of the gap between affordable and market costs and a calculation of the payment in lieu.

Area Median Income (AMI)

Orienting housing programs to the median family income for Eagle County, as published by the U.S. Department of Housing and Urban Development (HUD) each year, corresponds with State and Federal programs that might be used by private developers as well as the public sector to produce employee housing, as these programs also base income levels on the median family income. The following table shows U.S. Department of Housing and Urban Development (HUD) estimates of the median family incomes in Eagle County for one- through five-person households in 2006.

Table 1.
2006 Median Family Incomes for Eagle County: HUD

AMI Range	Number of Persons in Household 1	2	3	4	5
50% AMI	$28,000	$32,000	$36,000	$40,000	$43,150
60% AMI	$33,600	$38,400	$43,200	$48,000	$51,780
80% AMI	$41,700	$47,700	$53,650	$59,600	$64,350
100% AMI	$56,000	$64,000	$72,000	$79,600	$86,300
120% AMI	$67,200	$76,800	$86,400	$95,520	$103,560

Source: US Department of Housing and Urban Development (HUD)

Household incomes by AMI in 2006 were estimated from the 2000 US Census CHAS (Comprehensive Housing Affordability Strategy) special tabulations of households by AMI in 1999, the 1999 and 2006 HUD median family incomes in the Town of Vail and the estimated number of households in Vail in 2006. These projections include the following assumptions: the percentage of households in each AMI group has remained fairly constant since 1999 and household tenure has remained relatively constant since 2000. These estimates indicate that about 47.9 percent of households earn less than 100% AMI, or about 1,161 total households.

Table 2.
Town of Vail Households by AMI: 2006 Estimates

AMI Range	Total %	#
<50%	16.4%	398
50.1 to 60%	3.5%	84
60.1 to 80%	10.6%	256
80.1 to 100%	17.4%	422
100.1 to 120%	12.7%	307
120% or more	39.4%	954
TOTAL	100.0%	2,422
Total <80%	30.5%	739
Total <100%	47.9%	1,161
Total <120%	60.6%	1,468

Source: 2000 US Census, CHAS special tabulations; HUD median family incomes; DOLA population projections; RRC Associates, Inc.

Level of Service

Programs that require new development to produce affordable housing as mitigation for the housing demand generated by the development must conform to level of service standards applicable for both existing and future needs. The level of service indicates the current level of affordable housing that exists in the community and, when considered in conjunction with any town commitments for providing housing, provides a guideline for workforce housing mitigation requirements. It should be noted, however, that new development requirements need not be limited by the current level of service in the community if the town is active in adopting and implementing housing programs to increase the town's current level of service.

The level of service is defined by the current percentage of households residing in the study area that earn within the income range targeted by the adopted housing program. For example, presently about 30.5 percent of the Town of Vail's households earn less than 80 percent of the AMI. If the Town of Vail adopted a housing linkage program requiring developments to mitigate employee households earning less than 80 percent of the AMI, the town could require up to a 30.5 percent mitigation rate, based on the current service level of the town (see Table 2, above). If the Town of Vail adopted a housing linkage program that served households up to 100 percent of the AMI, a mitigation rate of about 48 percent would meet current service levels.[1]

The above approach generates a potential measurement for the town's existing level of service for housing residents earning within different AMI levels. The data comfortably support a mitigation level of 30 percent for households earning less than 80 percent of the AMI and a mitigation level at about 48 percent for households earning less than 100 percent of the AMI. It should be noted that, since the year 2000, 142 units of income-restricted rental housing have been constructed in the Town of Vail (Middle Creek). This project primarily serves households earning less than 80 percent of the AMI. This development, in combination with other programs being pursued by the Town of Vail, are indications of the commitment by Vail to provide much needed housing for its local workforce. Based on Middle Creek and any continued commitment from the Town of Vail to supply housing for the local workforce, the above level of service rates may be conservative.

It is important to recognize that alternative interpretations of the level of service standard may be more or less conservative than presented herein, potentially supporting a higher or lower mitigation rate than presented above. It is recommended that Vail consult with legal staff regarding mitigation rates that conform to the level of service standard.

Job Generation Rates

When new commercial/industrial/lodging/residential projects are built, additional employment is generated. New commercial employment may be from new businesses or from businesses relocating from other space (thereby freeing up that space for other tenants). Regardless, the net effect over time is a net increase in employment in the community. Job generation rates that measure the number of jobs typically generated by residential units and in various types of commercial spaces can be used to estimate the number of jobs that will be created by new development.

Commercial Linkage

RRC Associates and Rees Consulting, Inc., both members of The Housing Collaborative, LLC, have been conducting housing needs assessments in mountain resort communities throughout Colorado and in neighboring states since 1990. As part of these studies, public and private

[1] It is recognized that a portion of the households in the Town of Vail that earn less than 100 percent of the AMI are cost-burdened. Based on year 2000 US Census data, about 56 percent of households earning less than 100% AMI had housing problems, including being cost-burdened (paying over 30% of income for housing), lacking complete plumbing facilities, lacking complete kitchen facilities and/or with 1.01 or more persons per room. However, these households are still residing in the town regardless of their ratio of income to housing payments and are, therefore, being served by housing in the community. Employee housing programs and development is intended to ease the burden on these lower-income households and provide more suitable housing options for local workers. This not only results in a more stable and content workforce, but also helps the town compete with other areas for employees by providing suitable and affordable housing for the workforce.

sector employers were surveyed concerning the number of jobs they offer and the amount of space they occupy. From these surveys, a total of 1,857 employers were used to compile a database on job generation ratios, which are expressed as the number of total jobs (full and part time combined, not FTE) per 1,000 square feet of space. The study area includes both core resort areas as well as nearby communities, which are listed below, with survey dates ranging between 1990 and 2004.

- Blaine County, ID: 1990, 1996
- Chaffee County: 1994
- Copper: 2001
- Eagle County: 1990, 1999, 2001
- Estes Park: 1991, 1999
- Frisco: 1998
- Grand County: 1992, 2001
- Gunnison County: 1992, 1998
- Composite of Pitkin, Eagle, and Garfield Counties (from Healthy Mountain Communities surveys of 1997/98 season)
- Keystone: 2001
- Pitkin County: 1991
- Routt County: 1990
- San Miguel County: 2000
- Snowmass Village: 1999
- Summit County: 1990, 2001
- Telluride: 1993, 1996, 2001
- Aspen 2002
- Garfield County 2004
- Pitkin County 2004

The database contains 203 valid cases from Eagle County (103 in 1990, 100 in 1999/2001 combined), with about 19 percent of the valid cases in 1999 and 2001 being from businesses in the Town of Vail and about one-half of the 1990 surveys from businesses in the Vail and Beaver Creek area. The compared merged database has 1,544 valid cases sampled from 1990 through 2004 and combines surveys from commercial core areas, where space tends to be intensively used, and nearby communities and unincorporated areas, where employment is often less. For the purposes of the below comparison with Eagle County, results from Chaffee County and Estes Park were not included in the merged database runs shown in Table 4 given the different economies in these areas compared to Eagle County and Vail. The composite database shows about 2.9 employees work in every 1,000 square feet of commercial space overall. The ratios are considerably higher for restaurants and bars (8.1 per 1,000 SF) and recreation-related establishments (5.8 per 1,000 SF) and slightly higher for retail space (3.0 per 1,000 SF). Generation rates in Eagle County are similar, or slightly higher, than the composite database for most categories.

Table 3.
Commercial Job Generation Rates

	Merged Database*	Eagle County 1990/1999/2001	RRC Rates pre-1990
Bar/restaurant	8.1	9.8	5.7
Construction	4.4	4.7	10.6
Education	1.4	1.2	
Office (Finance/Banking, Legal, Medical, Professional Services)	3.8	4.3	3.1 - 6.6
Government	2.0	1.4	6.5
Lodging/hotel/housekeeping	0.8/room	0.9/room	1.3/room
Personal services (laundry, hair care, etc)	2.5	6.0	
Real estate/property management (office)	6.1	4.2	7.6
Retail sales	3.0	3.9	1.8 – 5.9
Service	1.4	1.7	
Recreation/attractions/amusements	5.8	3.5	
Utilities	1.5	1.6	
Property Management (units)	0.4/unit	0.5/unit	
Overall	2.9	3.4	

*Merged database excludes Estes Park and Chaffee County.
Source: RRC Associates, inc.

Considerations for Commercial Linkage Requirements

When developing commercial linkage requirements, some communities use a single average while others combine similar categories into several groups. The rates are usually used to estimate employment when the PUD or building permit application is filed. The rates can be applied to new development and to redevelopment that results in additional space being created. Using a single average makes it less problematic when the exact use of space is not defined at the time of project approval; however, it can place disproportionate burden on commercial uses that have lower job generation rates. Utilizing multiple rates can complicate the situation when a change in use occurs. Some programs consider change in use to be exempt while others provide a credit. *Most programs provide the opportunity for the applicant to provide their own job generation estimates in the event that the proposed use is expected to generate jobs at a different rate than established by the community*.

The following table shows job generation rates aggregated into five categories. The overall rate would be applied to uses that do not fit within the specified categories. "Office" includes such uses as finance/banking, legal and medical professions and other professional services. This shows that commercial operations in Eagle County are slightly more labor intensive than uses in the merged database as a whole. The "overall" rate for just the Vail businesses surveyed indicate a rate of between 3.4 and 3.5 employees per 1,000 square feet of development, which is similar to that for Eagle County businesses as a whole (3.4 overall).

Table 4.
Commercial Job Generation Rates by Condensed Categories

	Merged Database	Eagle County 1990, 1999, 2001	Units
Bar/restaurant	8.1	9.8	Emps/1,000 sq. ft.
Lodging/hotel	0.8/room	0.9/room	Emps/room
Commercial retail	3.0	3.9	Emps/1,000 sq. ft.
Office	3.8	4.3	Emps/1,000 sq. ft.
Real estate/property management (office)	6.1	4.2	Emps/1,000 sq. ft.
OVERALL	2.9	3.4	Emps/1,000 sq. ft.
N=	1,544	203	

Source: RRC Associates, inc.

Although the figures generated from the Eagle County surveys could be used to determine job generation in the Town of Vail, it is recommended that the merged dataset be used rather than specific local figures for the following reasons:

- The smaller number of cases in individual communities is less statistically valid than the merged data set, particularly when broken down by types of businesses;
- Surveys of individual communities provide point-in-time estimates of job generation during the year of the survey. These rates are subject to change depending on many factors, including local and regional economic conditions and changes in development incentives, ordinances and regulations that may affect the intensity of commercial space usage in the community;
- The merged data set provides a more general sample of the types of businesses and intensity of uses found in resort communities over a period of time that includes both economic booms and slumps. This results in numbers that represent average commercial job generation that can be comfortably used over an extended period of time, rather than constantly changing with point-in-time economic conditions.
- The merged data set also provides a more general sample of the intensity of uses of businesses in multiple resort communities. Because each community represents a different "maturation" state, the database presents an average mix of intensities that could be expected as communities change and as businesses move into and out of communities. The merged database provides job generation rates that recognize the economic mix of communities change over time, both within and between different industries, and accommodates this change.

Residential Linkage

Residential dwelling units generate demand for housing through their operation and maintenance. Activities including exterior and interior maintenance and upkeep, house cleaning, meal preparation, childcare, personal services, and home office support generate jobs, many of which are relatively low paying. The employees that fill these jobs generate demand for modestly priced housing. Further, homes built for second homeownership reduce the land and number of units available for the local workforce. As a result, the more homes that are built in the Town of Vail (particularly for visitor or second home use), the more the affordable housing problem is aggravated.

The Town of Vail sponsored a study this year (2006) on job generation associated with residential uses. Conducted by RRC Associates, the study was used to estimate the number of permanent jobs associated with various types and sizes of residential units. This study focused on jobs directly generated as a result of the residential unit. That is, jobs associated with housing maintenance and operations, including property and rental management, homeowner's association, gardeners, snow removal, exterior maintenance, housekeepers, kitchen help/chef, child care provider/nanny, caretaker/concierge/butler, personal trainer/administrative assistant and other related employees. This study did not include workers generated through construction of the home and does not include jobs generated as a result of secondary expenditures by home occupants (e.g., retail and other commercial expenditures). The study was based on surveys of homeowners, with 893 homeowners responding.

Average job generation rates were calculated to support an employee housing mitigation program that is fairly simple to administer, yet responsive to the finding that large residential units generate more jobs than smaller units. It is important to note that the Eagle County assessor data reports only about 16 units in the Town of Vail that exceed 7,000 square feet in size, with 6 of those units being over 8,000 square feet (or about 0.1 percent of existing ownership units)[2]. The low incidence of larger units in the Town results in a more modest exponential relationship than would be expected if the Town had more large units. The job generation rates, expressed in full-time equivalents (FTE) per unit, were found to vary by square footage according to the following exponential function:

Equation of Residential Employee Generation by Home Size

$$\text{Total FTE} = 0.0675 * e^{(.0002)(\text{Square Footage})}$$

The following table of FTE employee generation rates was calculated by applying the above formula to the mid-point of each of the residential square-footage categories shown in the first column. For units under 1,000 square feet and over 7,000 square feet, the average size of existing units in the town within these size categories was used (728 and 8,350 square feet, respectively) as determined from Eagle County assessor records.

Table 5.
Residential Employee Generation Rates By Home Size

Size of Residential Unit (Square Feet)	FTE Employees
Under 1,000	0.08
1,000 to 1,999	0.09
2,000 to 2,999	0.11
3,000 to 3,999	0.14
4,000 to 4,999	0.17
5,000 to 5,999	0.20
6,000 to 6,999	0.25
7,000+	0.36

Source: RRC Associates, Inc.

A study on residential job generation was also recently conducted by the Northwest Council of Governments (NWCOG), titled "Second Homes and the Amenity Based Economy." The study found that, through owner spending, second homes generated about 8,500 direct basic jobs (51.5 percent of total direct basic jobs) and 12,000 total jobs (45.1 percent of total jobs) in 2002.

[2] There are 326 total residential units in Eagle County that are 7,000 square feet or larger in size, accounting for about 1.4 percent of ownership units in the County.

More specifically, this resulted in about 1.8 jobs per second home unit that is 3,000 square feet or more in size and 1.1 jobs per second home unit that is less than 3,000 square feet in size.

Table 6.
Jobs Created Through 2nd Homeowner Spending: Eagle County, 2002

Size of 2nd Home	Basic Jobs	Total Jobs	Total Jobs per Unit	Denomination of Unit
Under 3,000 Sq. Ft.	6,219	8,793	1.1	Dwelling Unit
3,000 Sq. Ft. or more	2,283	3,228	1.8	Dwelling Unit

Source: Northwest Council of Governments "Second Homes and the Amenity-Based Economy," April 2004.

The NWCOG job generation figures differ from those estimated by RRC Associates for the following primary reasons:

- NWCOG focuses on second homeowner properties only. RRC Associates calculations represent jobs generated by all residential properties (those occupied by full-time residents and second homeowners) and
- NWCOG figures represent all jobs created through second homeowner expenditures in the local economy (this includes not only property maintenance, but retail jobs, service jobs, etc.). RRC Associates calculations represent only those jobs generated by the constructed residence, as measured through direct employment by property owners for ongoing property maintenance and operation (gardeners, property managers, housekeepers, etc.).

Considerations for Residential Linkage Requirements

The above data presents some interesting considerations for communities when devising a residential linkage program. One method evaluates the total impact of second homes on the economy based on expected homeowner expenditure patterns in the area and, therefore, all primary and secondary jobs created as a result of that impact (NWCOG). The other method evaluates only that employment directly generated by the constructed residence (employees directly hired by property owners to maintain and operate their property). When considering the impact of residential uses, and particularly second homeowners, on local job generation and developing regulations that respond to those impacts, the following issues need to be considered:

- Homeownership cannot be determined until the time of sale of the property, although it may be possible to reasonably "predict" home occupation based on the size, price and location of proposed developments, among other factors;
- Properties sold to locals may be resold to second homeowners, causing a potential increase in employment, but with no ability to require a respective increase in employee mitigation;
- Communities considering commercial linkage and residential linkage must ensure that the adopted programs are not "double-charging" for the same employees. In other words, if residential developments are required to mitigate for all jobs created through homeowner expenditures (direct basic jobs and secondary jobs, including property management as well as retail jobs, service jobs, etc.), commercial linkage figures must ensure that employees housed by residential linkage requirements are not also required to be housed through commercial linkage; and
- There is a positive correlation between household size and job generation – the larger the home, the more jobs that are generated by the residence. To ensure fairness in implementation, requirements should vary by size of the home. The implementation of requirements segmented by broad categories of mitigation (e.g., less than 3,000 square

feet and 3,000 square feet or more) may not equitably distribute job generation and employee mitigation.

It should be noted that the direct employment figures generated by RRC Associates, Inc., include the above considerations. Residential job generation figures purposefully only include employees directly hired by property owners to avoid double-counting employees that are needed by local commercial operations. Residential generation figures also purposefully include all property owners. This negates the complexity of trying to determine whether properties will be purchased by locals or second homeowners and provides a middle-ground figure that results in mitigation fitted to the life of the property (including changes in ownership). However, it is recognized that some communities may prefer to have higher requirements for second homeowners in line with their total job generation in a local economy, with corresponding reduced requirements for commercial development. This approach could be supported through additional data analysis and could be achieved through creative program development and sensitivity to the above-mentioned issues.

Accounting for Multiple Job Holding

The job generation ratios for commercial space measure the total number of full- and part-time employees combined; no adjustment was made when counting part-time jobs. Some of the employees, particularly the part-time workers, may also hold other jobs. To avoid double counting and potentially requiring two different commercial developments to pay for housing the same employee, the number of total employees in commercial space that generate demand for housing in the Town of Vail needs to be adjusted for multiple job holding. Because job generation rates for residential dwellings are presented in terms of full-time equivalents (FTE), they do not need to be adjusted for multiple job holding.

The 1999 the Eagle County Housing Needs Assessment found that employees in the county hold an average of 1.2 jobs. This measure was calculated by evenly weighting the number of jobs held during the winter, summer and shoulder seasons. It is similar to the results found in other mountain resort communities where, over the years, the number of jobs held by employees has typically ranged between 1.15 and 1.35. The projections of jobs and workers holding jobs in Eagle County in 2005 that were compiled by the Department of Local Affairs also average about 1.2 jobs per worker.

Converting from Workers to Households

Employees often live together in family and unrelated roommate households. Housing requirements need to recognize these lifestyle patterns. The number of employees per household living in family households was estimated from the 2000 US Census. Family households with at least one employee have 1.8 employees on average. When non-family household estimates are included (including householders under 65 that are living alone and with unrelated persons), this drops to about 1.4 employees per household, on average. This results in large part because 34 percent of households in the Town of Vail are single-person households and can, therefore, have at most one employee. The number of households generated by a project equals the number of new employees divided by 1.5 employees per household.

Identifying Program Methods and Household Targets

A decision must be made as to which types of programs will be targeted by the Town of Vail's proposed residential and commercial employee housing mitigation programs. It is important that developers not be "double-charged" by housing requirements to avoid the need for crediting developments for payments made through other mechanisms (see the section on Credits in this report). For example, many programs implemented in other Colorado mountain resort communities typically employ either residential linkage or inclusionary zoning to avoid "double-charging" residential developments for the same employees. Further, the current approach outlined in Eagle County's Housing Guidelines also prevents double-charging by having inclusionary and linkage requirements target different household income ranges (80 to 100% AMI and 60 to 80% AMI, respectively).

Income ranges served by programs are unique for each community depending on their specific household needs. Most programs adopted in other Colorado mountain communities require housing to be built for households earning anywhere between 60 percent and 120 percent AMI, with many requiring that employee units average 80 percent AMI mitigation. Different ranges can be targeted based on local needs – for example, Aspen/Pitkin County have eight service-level categories, covering from low-income households through four levels of upper income categories.

The Town has the discretion to require different mitigation rates for residential and commercial development, provided the rates are based on a legitimate public purpose. For example, commercial development can be assessed a lower mitigation rate than residential provided there is a finding of fact that doing so achieves a public purpose, such as the encouragement of economic development and the support of fiscal soundness through the generation of sales tax revenues.

Credits

Any taxes or fees paid by new development that are used to address existing housing deficiencies must be credited for the amounts paid.

Mitigation Formula

To determine the number of affordable housing units that commercial, residential, or mixed-use projects must produce, the following formula is used.

- The size of the project is first multiplied by the appropriate job generation rates to estimate the number of jobs that will be created;

- The number of jobs generated for commercial space and lodging is then divided by the average job holding ratio of 1.2 jobs per employee to estimate the number of new employees that will be generated by the development;

- The number of new employees is then divided by the number of employees per household (1.5) to estimate the number of new households generated by the project; and

- The total number of households is then multiplied by the percent mitigation rates, as approved by the Town of Vail, to determine the number of units required.

Table 7.
Calculation of Commercial and Residential Linkage Requirements

Commercial	**Factor**	**Calculation**
Size of Development		Leasable Square Feet
Jobs generated	Rate per 1,000 SF	rate x SF/1,000
	Bar/restaurant – 8.1	
	Commercial retail – 3.0	
	Office – 3.8	
	Real estate/property management (office) – 6.1	
	Other – 2.9	
Employees generated	1.2 jobs per employee	Jobs generated / 1.2
Households generated	1.5 employees per unit	Employees generated/1.5
Units Required	30% mitigation rate*	Households generated x 30%
Lodging		
Size of Development		# Rooms or # Units
Jobs generated	Lodge/Hotel - 0.8/Room	# rooms x 0.8
Employees generated	1.2 jobs per employee	Jobs generated / 1.2
Households generated	1.5 employee per unit	Employees generated/1.5
Units required	30% mitigation rate *	Households generated x 30%

Residential	**Factor**	**Calculation**
Size of Development		# Units
Employees generated	Unit Size See *Residential Employee Generation Rates By Home Size* table (pg. 7)	# units x approximate job generation rates
Households generated	1.5 employees per unit	Employees generated/1.5
Units required	30% mitigation rate*	Households generated x 30%

*For illustrative purposes, a 30 percent mitigation rate was assumed for commercial and residential requirements. Other mitigation rates could easily be substituted, if desired.

The number of new households for which housing must be provided is a function of public policy as well as proportionality. Based on the analyses presented in this report, the current level of service of the Town would result in a 30 percent mitigation rate for programs targeting households earning 80 percent of AMI or less, with a higher rate potentially supportable depending on the commitment of the Town of Vail to provide housing through other mechanisms. The mitigation requirements can also be less than the maximum permitted for residential or commercial development, or both, depending on the goals of the Town of Vail with respect to meeting employee housing and other needs.

Fee in Lieu Calculation

The difference between prevailing market prices and what targeted low-income households can afford to pay for housing is the gap that must be taken into consideration when determining the amount of fee that could be paid in lieu of producing units under certain circumstances. This gap varies by the income level of the targeted household and whether homeownership or rental housing is to be provided.

To generate one number for each targeted income category that represents the gap between affordable and market costs, a series of calculations must be made, as follows:

1. The income range of targeted households is first established. The basis is the median family income for two-person households in the Town of Vail. The income for two-person households was used since the average household size in the Town of Vail as of 2004 is about 2.09 persons (as estimated by the Department of Local Affairs). The income range must be updated annually to reflect changes in the published wage or median income figures, depending upon which is used as an eligibility measure. As a result, the amount of the gap and resulting payment in lieu will fluctuate yearly.

2. The target income point within the range is then set so that a single gap calculation can be performed. For the calculation under Category 1 (incomes at or below 80% of the median), the target point is set at 60% of the median. This rationale is supported by the fact that the funds received from payments in lieu will be used by the Town of Vail to leverage funds to develop employee housing (the fee only covers the gap) and 60% of the median income is often targeted by Federal and State financing programs.

3. The affordable monthly housing payment is next established based on a commonly used standard: 30% of gross income equals the housing payment.

4. The affordable monthly housing payment is then converted to an affordable purchase price by assuming the cost of property taxes and insurance is equal to 20 percent of the total affordable housing payment, then assuming that mortgage terms based on the remaining 80 percent of the payment include a 5 percent down payment and a 7 percent fixed rate of interest for 30 years.

5. An average size for each income category is set taking into consideration the average household size for units sold between June 2005 and May 2006 that fall within affordable price ranges for each AMI household. The current figures of 850 square feet for households earning less than 80% of the AMI and 900 square feet for households earning between 80 and 100% of the AMI are provided as examples only. Guidelines for the Town's program should establish both an allowable range of sizes and a required average size for the income categories.

6. The per square foot sales prices of dwelling units purchased in the Town of Vail between June 1, 2005 and May 31, 2006 was used as the basis for housing costs (as determined from Eagle County Assessor data). The figure of $458 per square foot was the median cost of units sold during this period (with outliers removed). The cost of units sold rather than the cost of construction has been used for several reasons:

   - Market-rate prices on a per square foot basis can be readily obtained and can be used to update the fee on a regular basis;

   - Construction costs vary widely, depending upon numerous variables. Adding the cost of land further complicates the calculation; and

- The Town may use the fees obtained to purchase existing units, provide rent subsidies, or support other housing efforts in addition to new construction projects.

7. The affordability gap is the difference between the cost (median per square foot price of recently purchased dwellings multiplied by the average size of units required for each income category) and the affordable purchase price.

Programs targeting the lower income category (≤ 80% AMI) would have a per unit payment in lieu of $267,788 or a per employee payment in lieu of $178,526, as shown in the following table.

Table 8.
Calculation of Fees in Lieu based on Median Income Limits

	Category 1 £80% AMI	**Category 2 81% - 100% AMI**
Income Range (2-person households)	$ 0 - $47,700	$47,701 - $64,000
Target Income Point (60% - Cat. 1; 90% AMI – Cat. 2)	$38,400	$57,600
Affordable Monthly Housing Pmt.	$960	$1,440
Property Taxes/Insurance/HOA estimate (20% of Aff. Monthly Hsg. Pmt.)	$192	$288
Mortgage Payment	$768	$1,152
Max. Mortgage Amount*	$115,436	$173,154
Affordable Purchase Price	$121,512	$182,267
Average Sq. Ft of Units	850	900
Median per Sq Ft.	$458	$458
Cost per Unit	$389,300	$412,200
Affordability Gap / Payment per Unit in Lieu	$267,788	$229,933
Employees per unit	1.5	1.5
Affordability Gap / Payment per Employee in Lieu	$178,526	$153,288

* Assumes 5% down, 7% interest for 30 years.

It should be noted that the calculations presented above assume that any HOA fees (plus property taxes and insurance) would be covered by 20 percent of the "affordable monthly housing payment." This percentage can be amended depending upon expected HOA dues being lower or higher than this allowance. For developments that result in a fraction of a housing unit being required, the payment is determined by applying that fraction to the per-unit in lieu amount.

For reference, Table 10 shows the current 2006 Area Median Income levels for Eagle County households (and used for the Town of Vail) and Table 11 shows the estimated affordable purchase price of homes for each income category.

Table 9.
Area Median Income by Household Size: Eagle County 2006

	1-person	2-persons	3-persons	4-persons	5-persons
30%	$16,800	$19,200	$21,600	$24,000	$25,900
50%	$28,000	$32,000	$36,000	$40,000	$43,150
80%	$41,700	$47,700	$53,650	$59,600	$64,350
100%	$56,000	$64,000	$72,000	$79,600	$86,300
120%	$67,200	$76,800	$86,400	$95,520	$103,560

Source: Department of Housing and Urban Development

Table 10.
Affordable Purchase Prices of Homes* by AMI, 2006

	1-person	2-persons	3-persons	4-persons	5-persons
30%	$53,161	$60,756	$68,350	$75,945	$81,957
50%	$88,602	$101,260	$113,917	$126,575	$136,542
80%	$131,954	$150,940	$169,768	$188,596	$203,627
100%	$177,204	$202,519	$227,834	$251,883	$273,085
120%	$212,645	$243,023	$273,401	$302,260	$327,702

Source: Department of Housing and Urban Development, RRC Associates, Inc.
*Assumes a 30-year, 7% fixed rate loan, with 5% down and 20% of monthly payment for property taxes, insurance and HOA fees, with no more than 30% of household income used for housing payments.