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Assessment of Project Impacts and Appropriate Fire Service Mitigations for the Proposed Village at Squaw Project

Squaw Valley Public Service District

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FIRE & EMERGENCY SERVICES

SQUAW VALLEY—ASSESSMENT OF PROJECT IMPACTS AND APPROPRIATE FIRE SERVICE MITIGATIONS FOR THE PROPOSED VILLAGE AT SQUAW PROJECT

1. EXECUTIVE SUMMARY

Citygate Associates, LLC was commissioned by the Squaw Valley Public Service District (SVPSD) to review the proposed Village at Squaw project (the project) and compare the fire and emergency medical service (EMS) risks presented by the planned expansion to the community of Squaw Valley. Citygate was also asked to compare the level of existing fire department services to the project's risks. If a services gap was found, Citygate was to recommend specific mitigations and order-of-magnitude costs for the SVPSD Board of Directors to consider requiring of the project applicant as part of the Board's approval process with the SVPSD and Placer County.

1.1 Brief Overview of the Regulations and Framework for Providing Fire Services

As the SVPSD Board of Directors understands, there are no mandatory federal or state regulations directing the level of fire service response times and outcomes. In the United States, the provision of fire services is a local government issue. As such, communities have to balance the risks to be protected from fire and the resultant emergency incident outcomes desired against fire services costs and the available revenues. Given the recent recession, and the rise of career firefighter benefit costs, all agencies are challenged to design their fire services system within their ability to pay.

The federal and state body of regulations on the fire service does require that *if fire services are provided at all, they must be done so with the safety of the firefighters and citizens in mind.* Thus, over the last two decades, as safety standards have increased, so have costs for firefighter tools, apparatus, and personal protective equipment. As a result, neither personnel nor operating costs for fire services have moved downward as revenues have decreased and/or been very volatile.

The levels of fire service desired (i.e., the resultant emergency incident outcomes desired) are up to the SVPSD Board to determine. If development generates more risks to protect than revenues to the SVPSD for fire protection, it is common for new development to be required to pay for off-setting mitigations in services or additional revenues above base taxation.

1.2 Citygate's Findings and Recommendations

Overall, Citygate finds the proposed Village at Squaw project significantly increases the human and building fire risks to be protected in the Olympic Valley by the Squaw Valley Fire Department (a division of the SVPSD).

The risks are typical to urban development in the United States and, as such, standard mitigations exist, both in the use of the existing fire and building codes, along with an appropriate fire department response. If the mitigations recommended in this report are put into place, from the perspective of the fire and life safety issues, the increased risks presented by the project can be mitigated to a level of less than significant.

Specific mitigation recommendations are found in sub-section 6, *Mitigation Recommendations*, and mitigation expenses are estimated in sub-section 7, *Mitigation Costs*.

2. PROJECT BACKGROUND AND CITYGATE METHODOLOGY

Citygate's project approach was based on our consultants' professional experience in both fire department administration and in fire services consulting for a variety of agencies, including specialty resort areas, as well as a multitude of local and national publications. The combination of practical experience and published best practices in a review of this nature yields a result that considers the unique characteristics, topography, weather, and populations present and proposed in the Olympic Valley.

2.1 Codes, Ordinances, Standards, and Best Practices Applied to This Review

Citygate staff reviewed the following publications for this fire service impacts review:

- The SVPSD's adopted policies, codes, and standards
- The Uniform Building and Fire Codes as adopted by the State of California and the SVPSD
- The advisory, best practice standards of the National Fire Protection Association (NFPA)
- The Insurance Service Office (ISO) Fire Suppression Rating Schedule.

Additionally, Citygate staff met on site with SVPSD and Fire Department staff along with the project applicant to tour the existing road system, review the conditions and terrain of the proposed development areas, and discuss fire service issues related to the project in person.

3. RISKS TO BE PROTECTED AT THE PROPOSED DEVELOPMENT

The development proposal is a comprehensive and well-documented project that does not need to be completely re-stated in this study. Briefly, the development is a proposed Specific Plan within the existing Squaw Valley General Plan and Land Use Ordinance which is managed by Placer County. The Village at Squaw project is approximately 93.5 acres and consists of a set of sites located mostly at the west end of Squaw Valley. The applicant and the SVPSD provided Citygate Associates multiple documents detailing the plan, including, but not limited to, the Specific Plan draft document dated January 2014, the Revised EIR Notice of Preparation dated

February 20, 2014, and updated development summary phasing and occupancy calculation spreadsheets constructed in May and June 2014. The SVPSD also provided other draft consultant reports on the infrastructure phasing and fiscal benefit analysis.

3.1 Buildings

In summary, from the viewpoint of fire and life safety risk, the latest proposed plan requests the following buildings types (presented by theme):

3.1.1 Theme 1 – Hotel and Condominium Living Units

This theme spans eight lots and proposes building up to 1,397 bedrooms. The square footage of these properties, including all public and support areas, would be 1,381,887. The maximum building heights of the tallest four hotels would be up to 108 feet. These buildings would be high rises under the Building code. A high rise is a building taller than 75 feet. Other buildings in this theme could easily also be high rises ranging from 5 to 6 stories on top of podium parking, depending on final design. The largest envisioned hotel could have 380 bedrooms. The others could be much smaller ranging from 28 to 298 bedrooms.

3.1.2 Theme 2 – Timeshare and Fractional Ownership Cabins

This theme spans four lots and proposes building up to 170 bedrooms. The square footage of these properties, including all public and support areas, would be 171,779. Building heights would range from 35 to 70 feet.

3.1.3 Theme 3 – Recreation and Support

This theme spans five lots and proposes both recreational amenity buildings and hospitality support buildings. These would add another 144,000 square feet and the building heights would range from 35 to 100 feet, potentially creating additional high rises.

3.1.4 Theme 4 – Employee Housing

This theme spans two lots and proposes two employee residential buildings that would provide a total of 102 bedrooms. These would add another 38,916 square feet and the buildings would be 56 feet in height.

3.1.5 Specific Plan Totals for Buildings

The features of the overall project are described below, assuming all themes of the development are built:

- 1,595 bedrooms
- 1,736,582 square feet
- Hotels ranging in height from three to six stories

- Properties spanning 21 lots of vertical development in various areas
- Buildings for both hospitality industry services and active recreation functions.

3.2 Population Counts

In these types of developments, population counts, which primarily drive emergency service demands, are problematic as no one measure is a constant 24/7/365. There are peak-activity periods and low or "off season" periods along with full-time residents and employees.

The project applicants and Placer County have agreed on average bedroom occupancy factors for the various types of lodging rooms. Using the occupancy data from the other planning documents and the District's Water Services Analysis, Citygate estimated that a maximum possible overnight projection for all of the project's bedrooms could yield up to 4,359 people. Low-season nights could be much less, but it is hard to envision a total low count of less than 10 percent of the bedrooms, or a total of 300 people.

There is also the unknown impact of the other recreational amenities drawing day or early evening visitors. Olympic Valley resort operators also provide for summertime special events such as concerts.

Thus, at peak periods, when the existing rental units, full-time residents, daytime visitors, and this project's proposed rental units are added up, Squaw Valley can easily see 10,000-20,000 people.

3.3 Population Impacts on Squaw Valley Fire Services

As with most fire departments today, the majority of the emergency incident demand is driven by humans having medical or rescue problems. Loss from fire has fallen in the United States in *new* buildings, due to stronger fire and building codes and annual post-construction fire department inspections for maintenance of fire code compliance. In very large metropolitan populations, emergency incident demand per 1,000 population can be very predictive when estimating the impacts of growth on emergency services. However, to accurately predict incident demand based on population, the population sample needs be large and diverse, preferably above 100,000, and no lower than 10,000. In Citygate's experience, the rates for emergencies per 1,000 population are artificially higher for smaller agencies than for large cities and, as such, are not useful predictors of emergency demand.

For example, SVPSD, which has a Fire Department serving a larger area than just Olympic Valley, has a year-round resident population possibly as low as 879 people according to the 2010 census. In 2013, the Fire Department responded to 555 emergencies. If this incident count is divided by just the resident population, the rate is an unrealistic 631 incidents per 1,000 people.

Based on a resident population of 879 plus a maximum overnight guest estimate of 4,359, a hypothetical constant population of 5,238 would produce a rate of 106 incidents per 1,000 population. However, the population is not constant due to tourism.

As a comparison, in the City of Napa, with a much larger resident population, as well as significant tourism, the rate of emergency *medical* incidents per 1,000 population is much lower, at 41.3 incidents.

If the City of Napa medical emergency rate of 41.3 was applied to a *constant* hypothetical population of 5,238, it would produce an annual rate of 216 calls for service, which is significantly lower than the District's actual incident count of 555 in 2013.

If the estimated population of 5,238 is applied to the current Squaw Valley Fire Department rate of 631 incidents per 1,000 residents, the result is 3,305 incidents. However, this number is also unrealistic and much too high based on Citygate's experience in small resort communities of this size.

It is important to remember that tourism drives emergency incident demand and that humans, more than buildings, drive overall emergency incident demand. Given the Village at Squaw's guest overnight increase ranging from several hundred to a maximum of a little over 4,000 at peak periods, emergency incident demand will increase some, but it is doubtful that it will even double the 2013 incident count of 555 to 1,110. Even *if that occurred*, that is only an average of 3 incidents per day, which is not highly problematic.

Finding #1:	In Citygate's opinion, basing impacts and mitigations solely on small increases in populations is not appropriate to understand the fire service impacts of the proposed Village at Squaw project.

3.4 Building Impacts on Squaw Valley Fire Services

As stated above, while humans generate emergency incident demands, buildings present **risks** to be protected from fires causing economic and human losses. While modern multi-story buildings that are built to current codes and use internal fire protection including smoke detectors, fire sprinklers, and compartmentalization do not have a high occurrence of fire, most communities assume that the built-in systems can fail or need fire department support. Thus, they design their fire department staffing to contain fires to, or near, the room of origin. This requires a team of firefighters arriving close enough together to develop and implement an effective strategy for controlling a fire before it grows to a size that will endanger many other people or the entire structure. These firefighters need to be on "stand-by" trained and equipped to respond, even if only occasionally needed.

As a comparison, many fire service studies conduct what are called "critical task" measure time trials to determine how many firefighters are needed, over what time span, to control a given type of emergency.

For a simple two-story house fire, these critical task trials always arrive at about the same number of 14-15 firefighters plus an Incident Commander (chief officer) for command and safety functions. There are also a multitude of safety regulations to be followed. The most restrictive and yet minimal benchmark is the OSHA safety regulation commonly called "2-in/2-out." Under this regulation, if interior firefighting requires the use of breathing apparatus to survive, firefighters must operate in teams of two inside the building with at least two other firefighters outside, equipped and ready to rescue the team inside.

When fires occur in large, flat one- to two-story buildings, or in high rise structures, even if the fire is small, a group of four arriving firefighters can be challenged if it has only one inside team of two firefighters to identify the problem and begin control. That is why, for large commercial building fires in metropolitan cities, fire departments often send 30-50 firefighters immediately, and if that proves insufficient, greater "alarms" are called to bring in the needed quantity for the critical tasks at hand. As indicated earlier, a high-rise is a building taller than 75 feet. Above that height a fire is much, much harder to contain, and the number of firefighters needed does not vary much whether the building has seven stories or many more stories. Very serious high-rise fires can require 100 or more firefighters, or more than are on duty in the entire Lake Tahoe Basin. Thus, catastrophic fires would require mutual aid from a very wide region. As such, small fires have to be suppressed before they become dangerous.

In Olympic Valley, one high-rise hotel already exists. In the Village at Squaw plan, another ten could be possible. There are also large one- or two-story buildings that can be upwards of 100,000 square feet, which, based on the interior firefighting demand, can be essentially considered a high-rise building laying on its side.

Considering that the Olympic Valley community primarily includes a ski resort, small residential properties, and one- to three-story condominiums, the Squaw Valley and North Tahoe fire service agencies are being asked to protect high-rise and large commercial structures with the Village at Squaw project.

Finding #2:	In the entire North Lake Tahoe area, including the Town of Truckee, there are not enough firefighters on duty, even if they could arrive quickly, to control a serious commercial building fire in Olympic Valley, without a fast pre-emptive fire attack team.

Finding #3: Given the building fire risks present in the Village at Squaw plan, even allowing for code-required fire protection, the only chance for the occupants and the building to survive a small fire that the fire sprinklers cannot stop is for a quick, aggressive small team attack to reinforce building fire protection systems. If that initial team fails, the building and any occupants that could not self-evacuate will likely be lost before sufficient mutual aid can arrive in this remote mountain community.

4. SQUAW VALLEY FIRE DEPARTMENT'S CAPABILITIES TO HANDLE THE ADDED RISKS

Squaw Valley is difficult to serve using only one fire station due to its topography and historic road network design. Given that no state or federal minimums exist for the duration of response times for fire services, communities have the level of fire services that they can afford.

The SVPSD fields a small career fire and initial emergency medical response force from one fire station in the eastern end of the Valley. The SVPSD responsibility area is 14.5 square miles and is larger than the Valley itself. It includes the highway along the river and wildland, including rural housing areas adjacent to the river, north, and south of the Valley.

At one time the SVPSD fire station was located in the west end of the Valley near the main ski lifts. That site was deemed too old, too small, and poorly located to continue to serve the entire Valley.

The SVPSD-adopted Building and Fire Codes require automatic fire sprinklers in all buildings, including residences, regardless of size. State-adopted codes will also provide strict requirements for the use of flammable materials and landscaping on the outside of structures in wildland fire-prone neighborhoods. All of these measures, along with public education, and an annual inspection program, combine to make a community fire safe program.

The Fire Department's current staffing and equipment from the fire station is a minimum of three firefighters on duty, supported by a Fire Chief working 40 hours per week. The Department also employs part-time firefighters when they can be retained. There are not enough capable and available residents nearby to support a robust volunteer force. In addition, under state safety laws, volunteers must be provided the same training and protective equipment as a career firefighter. Thus, a volunteer's commitment is very high for annual training time, maintaining the minimum physical abilities, in addition to the high cost for a department to provide volunteers with the necessary equipment. The Department's fire apparatus are modern, in good repair, and are listed below:

- 2001 all-wheel drive, Type 1 structure fire engine
- 2001 rear-wheel drive, Type 1 structure fire engine

- 1998 Type 3 wildland fire engine
- 1994 Water Tender (2100 gal, 750 gpm)
- 2006 Light/Medium rescue unit
- 2012 F150 crew-cab utility
- 2004 Ford Expedition command vehicle (Fire Chief).

The Department currently staffs three or four personnel per day: a Captain, a Fire Engineer (apparatus driver), and one or two Firefighter/Paramedics. Ambulance service is provided under agreement with North Tahoe Fire Protection District.

The on-duty team of three will respond with the vehicle best suited for the problem from a building fire to a wildland fire or a medical/rescue incident. The Department used to staff 4 personnel per day, but due to recession-caused revenue losses, the minimum number has been reduced to three per day. In addition to the full-time career staff the Department generally adds a part-time firefighter on the busiest weekends. For a period of time during the recession, the Department obtained a federal grant for the fourth firefighter per day, but that grant award has now expired.

4.1 Part-Time Staffing

As mentioned above, fire departments across the United States in areas with small, year-round resident populations and significant seasonal population increases are faced with severe challenges in operating an effective volunteer workforce. Further, as this report has mentioned, there are not enough career firefighters on duty per day to begin to handle a serious fire in a large building or high-rise in Olympic Valley.

The Squaw Valley Fire Department has been able to keep a few part-time firefighters and firefighter-paramedics on its roster, but it is tenuous at times to have enough available for peak period scheduling. While this study is not a Master Plan for SVPSD fire services, Citygate would suggest that Squaw Valley Fire Department and other fire departments in the North Lake Tahoe region meet to jointly discuss how departments in other areas have addressed the need for callback and the use of resident or student firefighters. For example, resort areas in Colorado have successfully partnered with the Colorado Mountain College for the use of student firefighters. This has also been done in several locations throughout California.

To gain employment as a firefighter, young adults can take a Firefighter 1 academy course at a community college, but before they can be certified and apply for career jobs, they need work experience. Citygate suggests that fire agencies in the Truckee-Tahoe region explore partnering with one or more colleges, and pay stipend or minimum wages to apprentice, intern, or "resident" firefighters. This would allow serious fires to be better covered from a common "paid call" pool of personnel and callback and simultaneous event coverage would be improved. The

personnel could be employed part-time by any of the region's fire departments and potentially as seasonal employees by the any of the resorts.

Such a program does not change the mitigations or costs in this study, since the SVPSD already uses part-time fire personnel. However, such a regional program would help SVPSD staffing needs and assure that an economical part-time firefighter program can be maintained as the Village at Squaw builds. Otherwise, the SVPSD's and developer's costs will be even higher in the years ahead.

4.2 Fire Department Response Time Analysis

In the United States, there are no federal or state minimum fire department response time requirements. It is a local policy issue for jurisdictions to decide, if they so choose. The National Fire Protection Association (NFPA) recommended policy for career fire departments is 4 minutes travel for the first-due fire apparatus, and 8 minutes for multiple apparatus to serious incidents (commonly called the First Alarm).

The home insurance industry recommends that fire engines be within 1.5 miles driving distance of developed properties and that aerial ladder trucks be within 2.5 miles driving distance.

The current Insurance Service Organization (ISO) rating for the Squaw Valley Fire Department is a Class 2, based on a 1-10 scale, with 1 being the best and 10 being no fire department at all. This rating reflects the SVPSD's ability to field a small career fire department, with good equipment, training, and robust community water supply system for firefighting. The ISO does not rate a fire department's ability to handle everything, such a high-rise fire, medical incident, or technical rescue. The ISO evaluates fire departments to inform insurance companies for underwriting purposes about the type of fire protection capabilities provided, if they exist at all.

In urban and suburban areas, the ISO wants to see fire stations located within 1.5 miles driving distance of the buildings to be protected. The NFPA standard for fire services is for a 4-minute driving time. In practice, 4 minutes is enough time to travel a little less than 2 miles, depending on the type of road network.

From the current fire station in Olympic Valley, 1.5 miles just reaches past the intersection of Squaw Valley Road and Squaw Loop Road. It can be just over 2 miles to the redeveloped Squaw Village and main ski lift areas.

As such, all of the proposed Village at Squaw buildings will be within 2 miles of the existing fire station. In normal weather, providing coverage to this area is not an issue in Citygate's opinion. Many urban communities have 4- to 6-minute fire crew travel times. However, in typical winter weather, when many of the medical emergencies occur at the west end of the Valley or on the mountain itself, snow, poor visibility, and traffic reliably slow fire unit responses to longer than 4-5 minutes.

In Citygate's opinion, a second sub-station would be beneficial in the west end of the Valley. This would allow a 2-firefighter crew to be pre-positioned to offer faster assistance on busy weekends and at other peak activity times.

5. INTEGRATED ANALYSIS

Given the current staffing of three firefighters per day, the Squaw Valley Fire Department cannot even comply with the OSHA 2-in/2-out requirement on serious building fires unless the Fire Chief is available for an immediate response. Otherwise the 3-person crew must wait for mutual aid from Truckee or North Tahoe prior to initiating an interior attack.

When medical emergencies occur, the entire crew of three to four is committed and out of service, even with an ambulance responding with a crew of two. Since the Squaw Valley Fire Department responds to a much larger service area, some emergencies take the fire crew outside of the Valley. The Department today already protects one high-rise hotel, and numerous two- to four-story condominium buildings. Any new development beyond smaller one- to two-story buildings pushes the Fire Department past the point of being able to deliver a fast, preemptive attack should the fire sprinklers fail. There are not enough firefighters on duty to send two on a medical incident to provide care prior to the arrival of an ambulance or to the clinic at the base of the mountain, and still send a reasonable response to a fire or a simultaneous emergency.

> **Finding #4:** At a minimum, the Fire Department will need to increase daily staffing to the prior level of 4 career firefighters on-duty 24/7/365 and add a 2-person peak activity crew at the west end of the Valley.

There is one additional impact that the new development creates. In many severe medical emergencies, the fastest transport method to the most appropriate hospital is a medical helicopter. Currently, the open parking lots in and around the west end of the Valley can be utilized as landing zones or, if the parking lots are full, a landing zone can be established on the snow in the base area. As development of the proposed Village at Squaw project progresses, building coverage and parking structures will eliminate most, if not all, of the potential medical helicopter landing zones.

Finding #5: The Village at Squaw project will need to replace the helicopter landing zones in current surface parking lots with an FAA-compliant landing pad at a permanent grade level location or on the roof of a new parking garage or other suitable building. An elevated landing pad on a building will need a dedicated, ground-level ambulance parking location and a close-by elevator to the landing pad that is large enough for a patient gurney and at least three attending medical personnel.

6. MITIGATION RECOMMENDATIONS

Due to the proposed variable development phasing in the current Village at Squaw plan and the fact that some of the construction phases will have small resident population increases, the impacts to the Squaw Valley Fire Department are based on risks to be protected, not total emergency counts given the modest population growth until plan build-out. However, the larger buildings and increased overnight residency present increasing risk due to patient access time issues in larger buildings and significantly greater potential for simultaneous calls for service.

At peak visitation periods, the Fire Department needs to split on-duty personnel into two crews to be able to respond to different emergencies, ideally from both a west location and the main east Valley location. This need will inevitably become more pressing and common with development and special events that attract a large number of visitors.

Recommendation #1: Squaw Fire Staffing Mitigation Phases – *In Order*

1. Restore career staffing to 4 personnel on-duty 24/7/365 at the Certificate of Occupancy of the *first* of any of the development phases described in Recommendation #2 below.

2. Restore 1 part-time firefighter on 52 weekends for 10 hours per day at the Certificate of Occupancy of the *second* of any of the development phases described in Recommendation #2 below.

3. *Add* a 2nd part-time firefighter on 22 weekends for 10 hours per day at the Certificate of Occupancy of the *third* of any of the development phases described in Recommendation #2 below.

4. *Add* a 5th career position 24/7/365 and drop the part-time firefighter on 22 weekends at the Certificate of Occupancy of the *fourth* of any of the development phases described in Recommendation #2 below.

5. When the last phase, that includes *one or more hotels and 75 percent of the residential units, has already been built, add* a 6th career position 24/7/365 and drop the part-time firefighter on 52 weekends.

Recommendation #2: Village at Squaw Development Phases for Fire Mitigations

(Per the Land Use Plan and Development Summary Plan Dated August 27, 2014)

The following development phases each trigger staffing mitigations and may occur in any order, but the staffing increases outlined in the 5 steps above have to be followed in order, until the 5th staffing mitigation is met. In any staffing increase, if the SVPSD's property tax revenues have not grown enough to provide the increased staffing, the developer will pay the resultant expense gap until the property tax catches up.

- Development in Lots 1 through 8 triggers a staffing mitigation;
- A single condo hotel on Lot 1 triggers a staffing mitigation;
- A single condo hotel on Lot 13 triggers a staffing mitigation;
- Both condo hotels in Lots 14 and 15 *cumulatively* trigger a staffing mitigation;
- Residential development at 25 percent *plus* any single condo hotel triggers a staffing mitigation;
- Medium-density residential development in Lots 16 and 18 *cumulatively* triggers a staffing mitigation.

Recommendation #3: Fire Apparatus

Given the fleet replacement plan, if the Village at Squaw's new growth tax base, when added to the existing SVPSD revenues, cannot provide the needed capital apparatus replacements on time in addition to adequate staffing up to the point of full Master Plan build-out, then the Village at Squaw development will have to close the funds gap. This can be calculated and, if needed, funded at the time each phase's permit is obtained. Thus, the development is guarantying to provide funding for replacement apparatus and delivery to the Squaw Valley Fire Department within 12 months of the gap payment being requested by the PSD Board of Directors.

Recommendation #4: Capital Facilities

Helicopter Landing Area – Any surface parking removal that takes away a currently-designated medical transport helicopter emergency landing spot (Helispot) must be replaced with a permanent surface-level, above-ground, or top-of-building, all-weather Helispot meeting all FAA and medical helicopter design standards applicable to Squaw Valley's altitude, wind, and weather conditions.

West Valley Fire Sub-Station – By the time 50 percent of any combination of the condo hotel units has been built, provide a replacement fire station to serve the west end of the Valley in the

village area. This fire station should house a 2-person crew on weekends and peak activity holidays. The apparatus bay shall be large enough for one quick attack unit and one fire department reserve unit or specialty unit (2 bays wide, 1 unit deep).

7. MITIGATION COSTS

7.1 Staffing

7.1.1 Career Staff

One career firefighter with salary and benefits costs upwards of $206,000 annually. The Fire Department operates three shifts (platoons) of four firefighters each to maintain 3 of 4 firefighters on duty 24/7/365. In total, the Department has 12 line career firefighters currently. When a firefighter is absent, due to downward revenue pressures, the SVPSD does not backfill the 4th position per day with overtime and will operate a three-person crew. If two personnel are absent, then overtime is used to backfill up to three positions.

Thus, the SVPSD today employs enough firefighters for four on duty per day, but cannot fund the overtime to cover absences due to vacation, illness, or injury. The amount of overtime funds needed to maintain 4 firefighters per day is $150,000 annually.

If, by the time the Village at Squaw reaches a size that would trigger any of the staffing mitigations in this report, and if the SVPSD property tax revenue cannot pay part or all of the $150,000 for the needed 4th position's overtime, then the development would pay part or all of the overtime needed until the property tax catches up.

When there is enough development per the impacts phasing in this report to add a 5th firefighter per day, then the SVPSD cost, in current dollars, would be upwards of $618,000. As in earlier mitigation phases, the developer would have to make up any revenue gap the SVPSD had at that point to maintain the 5th position until the property tax catches up.

The 6th firefighter position per day would require an additional $618,000 in current costs. Taken together, adding two career positions per day would cost $1,236,000 annually at current SVPSD employment cost rates. Then, with 6 career firefighters on duty, this cost of $1,236,000 would be reduced by ceasing the weekend part-time staffing, which, as outlined below, costs $29,600, leaving a net new cost of $1,206,400.

7.1.2 Part-Time Staff

Currently, the SVPSD pays $20/hour to part-time firefighters and firefighter-paramedics. Accomplishing staffing Recommendation #2 would cost $20,800 for a total of 104 ten-hour weekend days.

Adding a second part-time firefighter on 22 high visitor weekends would cost $8,800 for 44 ten-hour days.

7.2 Apparatus

New structural fire engines without tools and equipment can easily cost $600,000 or more and last 12-15 years on front-line service. The SVPSD has to save for or borrow to replace engines on time. Until the Village at Squaw development raises the property tax high enough for normal replacement to occur in addition to the increase staffing needed, the developer should fund any SVPSD shortfall needed to make the next replacement purchase. Citygate's recommended mitigations do not require any additional fire apparatus to be added to the SVPSD fleet.

7.3 West Valley Sub-Station

At this point, suggesting a scope or site for a fire department sub-station at the west end of the Valley is impractical until redevelopment plans are settled between the parties, including SVPSD, which owns land in the area. However, even a small sub-station with space for several apparatus and the potential to support several fire personnel, given construction specifications for a winter climate and California "essential facility" building codes for fire stations, could easily run in the $2-3 million dollar range.

7.4 Helicopter Landing Pad

The many potential siting and construction options make costs for this mitigation difficult to estimate at this early point. Costs will depend on if the developer can site the pad on a rooftop, upper garage level, or build a platform with hydronic heat and lighting just above grade. At a minimum, for FAA safety requirements, the costs could be in the low hundreds of thousands rising to nearly a million dollars if a special, dedicated facility with an elevator had to be built. Creativity during the early phases of actual building design and reducing coverage that would allow a dedicated, functional landing pad with constant availability can effectively control the final cost of this mitigation.