APPENDIX 2.0-1

Parking Demand Analysis, Vista Canyon Transit-Oriented Development (Planning Areas 1 and 2)

PARKING DEMAND ANALYSIS
VISTA CANYON TRANSIT-ORIENTED DEVELOPMENT
(PLANNING AREAS 1 AND 2)

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Executive Summary

Purpose

This report analyzes parking demand and establishes parking requirements in Planning Area 1 (PA-1) and Planning Area 2 (PA-2) of the Vista Canyon mixed-use, transit-oriented development (TOD). Planning Areas 3 and 4 of the Vista Canyon project would comply with existing City of Santa Clarita Unified Development Code (UDC) parking requirements, which have been included in the Vista Canyon Specific Plan.

Methodology/Project Summary

The Vista Canyon Parking Demand Analysis ("Parking Demand Analysis") is provided for PA-1 and PA-2, using the base parking rates and methodology of the *Urban Land Institute ("ULI") Shared Parking Model, 2nd Edition.*

Vista Canyon is a mixed-use, transit-oriented development (TOD), which will include a Metrolink Station and City of Santa Clarita bus transfer station. The Vista Canyon Metrolink Station would replace the existing, temporary Via Princessa station, which is located approximately two (2) miles to the west of the Vista Canyon project site. The Vista Canyon project would include residential, office, retail, hotel and recreation uses, in addition to the transit improvements discussed above. Table ES-1 summarizes the project components of PA-1 and PA-2 used in this analysis, based on Tentative Tract Map 69164 (April 2010).

Table ES-1. PA-1 and PA-2 Project Components

Land Use	Amount
Residential units	820 multi-family dwelling units
Commercial – Retail, Restaurant, Theater, Shops, etc.	158,000 GSF
Hotel	200 rooms (140,000 GSF)
Office	596,000 GSF
Metrolink/Santa Clarita Transit station	750 parking spaces

Table ES-2 provides a comparison of hypothetical UDC parking requirements and the parking requirements recommended in this report for PA-1 and PA-2. The ULI model and associated adjustment procedures are included in the Specific Plan, and would replace the existing UDC requirements for the PA-1 and PA-2 of the project.

Table ES-2. Comparison of Parking Levels

	UDC Parking Requirements[1]	Vista Canyon Parking Reduction/Shared Parking Demand Analysis	Vista Canyon Parking Supply
Residential spaces, excluding visitor; not shared	1,516	1,277	1,277
Visitor Parking (Residential Uses)	410	Part of shared parking pool	Part of shared parking pool
Commercial, Metrolink, and residential visitor spaces; shared)	4,761	2,939[2]	3,073
Total spaces	6,687	4,216	4,390

Residential Parking (PA-1 and PA-2)

As the Vista Canyon project would be developed in phases over time, residential uses in PA-1 and PA-2 are required initially to be parked at a number equal to the City's UDC requirements until such time that the Metrolink Station and 50,000 square feet of non-residential floor area are constructed. The interim parking spaces in excess of the requirements of this parking analysis would be contained within temporary surface parking lots.

Once the Metrolink Station and 50,000 square feet of non-residential uses are constructed, the multi-family residential uses in PA-1 and PA-2 would be supported by a total of 1,277 required parking spaces, none of which would be part of the shared parking pool. This number of parking spaces represents a 16% reduction from the City's UDC requirements.

This reduction is supported by research on TOD and the ULI recommended parking ratios of 1.5 spaces per unit for rental units and 1.7 spaces per unit for ownership units. As indicated in this Parking Demand Analysis, the executive summary of the Caltrans *Statewide Transit-Oriented Development: Factors for Success in California* (2004) states that "[r]esearch indicates that TOD has the potential to reduce parking per household by 20%, as compared to non-transit oriented land uses."

Furthermore, as indicated in the Parking Demand Analysis, TOD residents have lower automobile ownership than surrounding non-transit oriented development; TOD residents have smaller household sizes than the typical suburban single family residence, condo or apartment; parking in TOD is typically in structures or subterranean garages, managed by associations, eliminating the use of parking areas for storage (which is very common in traditional suburban development); and, TOD includes a mix of land uses in close proximity which encourages walking and bicycling.

[1] These calculations are based on project data derived from TTM 69164 using parking calculations from the City's Unified Development Code.
[2] Includes 8% parking vacancy factor.

Based upon this research and documentation, the Parking Demand Analysis concludes that a 16% reduction in required residential parking is appropriate and justified.

Non-Residential Parking (PA-2)

Parking for the non-residential uses within PA-2 of Vista Canyon is based upon the Parking Demand Analysis, which utilizes the base parking rates and methodology of the *ULI Shared Parking Model, 2nd Edition.* The Parking Demand Analysis concludes as follows:

- The peak weekday parking demand is 2,721 parking spaces for PA-1 and PA-2.
- December is the peak month for demand, which corresponds to a higher use of retail parking.
- Month-to-month demand is relatively consistent, varying less than 120 spaces.
- The peak hour of parking demand is 2:00 p.m.
- Excess capacity exists in the weekday evening hours. Over 1,000 parking spaces are unoccupied between 6:00 p.m. and 6:00 a.m. on weekdays.
- Excess capacity exits on weekends. Peak weekend demand (1:00 p.m.) is 1,133 parking spaces or 42% of the peak weekday demand.

Parking management is an essential element to the successful operation of a mixed-use TOD. The project will require shared parking management practices and reciprocal easement agreements to ensure that parking supplies are protected for each use and that design features allow different uses to share parking. Finally, parking information systems are recommended, to increase the efficient utilization of parking facilities.

In conclusion, the Parking Demand Analysis confirms that the parking supply for PA-1 and PA-2 would meet and exceed the Vista Canyon project's parking demand.

1.0 Introduction

Transit-oriented development (TOD) provides a new model for vibrant, walkable communities that are built around transit. TOD involves a mix of land uses, more compact development resulting in higher densities than traditional development, and an emphasis on creating environments conducive to walking, bicycling, and transit use. The TOD concept is strongly supportive of many communities' Smart Growth objectives and is encouraged by the State of California through legislation such as SB 375.

This Parking Demand Analysis analyzes parking demand and provides parking requirements for PA-1 and PA-2 of the Vista Canyon project. As a baseline, it provides calculations of parking requirements under the existing City of Santa Clarita Unified Development Code (UDC), assuming no adjustment for shared parking, or project design features, such as a mix of land uses; an extensive pedestrian mobility system; and the placement of services and jobs in close proximity to transit and residential uses.

Standard application of the City's UDC parking requirements would not recognize the higher level of transit accessibility, mixed-use characteristics, and mobility system of the Vista Canyon project. Standard parking requirements reflect conditions for single-use projects in suburban settings that have little available transit service.

The Parking Demand Analysis is provided for PA-1 and PA-2 of the Vista Canyon project, using the base parking rates and methodology of the *Urban Land Institute* (*ULI) Shared Parking Model, 2nd Edition*, with adjustments for the particular characteristics of the project. Adjustments are based on the author's extensive research about the effectiveness of California TODs in changing travel behavior.

2.0 Project Description

Vista Canyon is a mixed-use, transit-oriented project, with a proposed Metrolink station and City of Santa Clarita bus transfer station. The Vista Canyon Metrolink Station would replace the existing, temporary Via Princessa station. The project includes residential, office, retail, recreation, and hotel uses in addition to the Metrolink station and bus transfer station. Table 1 summarizes the PA-1 and PA-2 components used in this Parking Demand Analysis.

Table 1. PA-1 and PA-2 Project Components

Land Use	Amount
Residential units	820 multi-family dwelling units
Commercial – Retail, Restaurant, Theater, Shops, etc.	158,000 GSF
Hotel	200 rooms (140,000 GSF)
Office	596,000 GSF
Metrolink/Santa Clarita Transit station	750 parking spaces

The approximately 185-acre project site is located south of the Antelope Valley freeway (SR-14), and is generally surrounded by existing residential and commercial development (Figure 1). The Santa Clara River bisects the project site. The primary access points to the site are Lost

Canyon Road (from Fair Oaks Ranch) and the Vista Canyon Road Bridge connecting to Soledad Canyon Road.

The project's four planning areas each have different characteristics. PA-1 consists of attached, multi-family residential units within easy walking or bicycling distance of PA-2. PA-2 is a true, mixed-use town-center containing residential, commercial, office, recreation and transit uses all within close proximity. PA-3 and PA-4 are not included in this parking analysis and would comply with the City's existing UDC parking requirements, consistent with the Vista Canyon Specific Plan.

The following site factors are relevant from a parking perspective. PA-1 and PA-2 of the project are self contained. Geographic features such as the river, major roadways and grade changes from these planning areas to surrounding existing neighborhoods ensure that parking conditions on-site are unlikely to affect these surrounding, existing neighborhoods. This means that a greater variety of parking management methods can be used without concern over spillover parking. The apartments to the west of these planning areas are within a ½ mile walking distance, but parking access to these apartments is gate controlled. PA-3 provides separation between PA-2 and existing residential neighborhoods to the east, eliminating any spillover parking concerns in those neighborhoods. The Fair Oaks Ranch community to the south is located over a ½ mile walking distance from PA-1 and PA-2 eliminating any spillover parking in this neighborhood.

Figure 1. Project Site

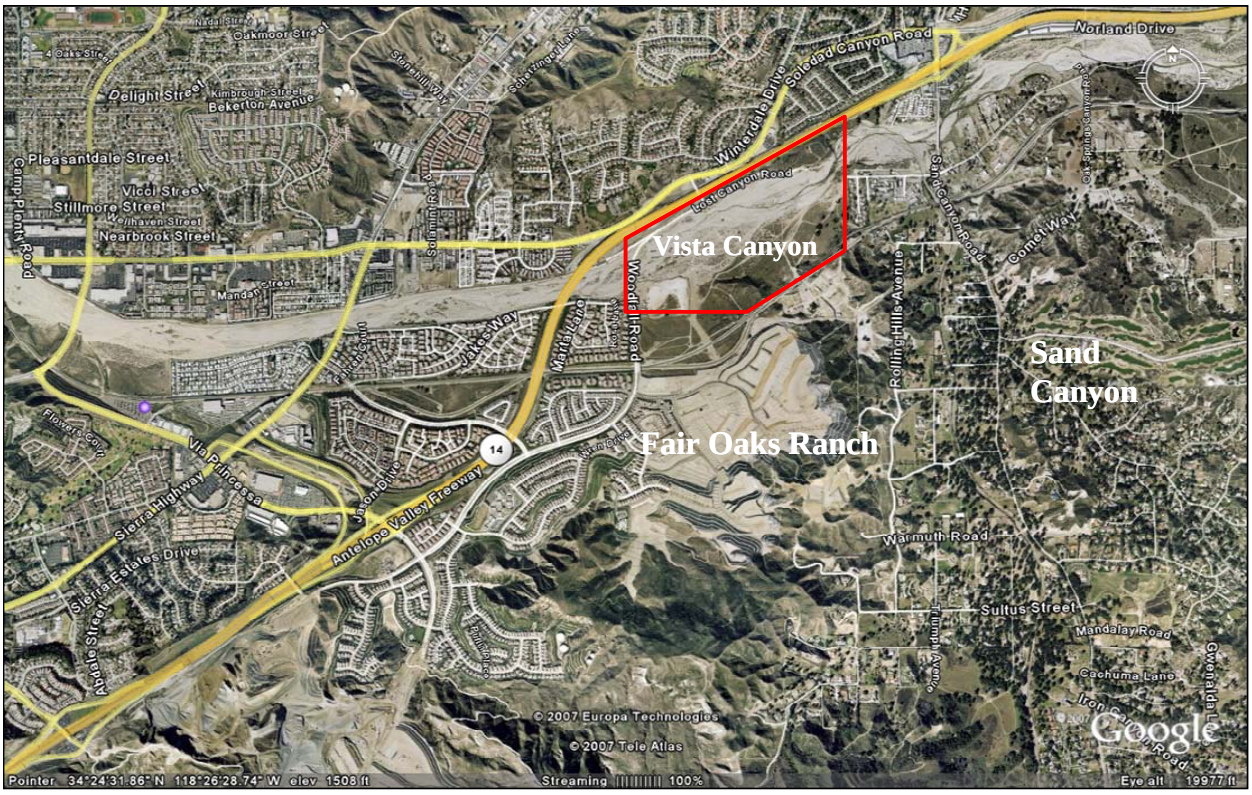


Table 2 provides a more detailed project breakdown for the parking demand calculations for PA-1 and PA-2. It also shows the assumed breakdown within use categories, taking the gross square feet (GSF) shown in Tentative Tract Map 69164 as the source of project characteristics and calculating space equivalencies for use in the shared parking model, which generally uses gross leasable area (GLA) as a model input.[3]

Table 2. Detailed Project Components (PA-1 and PA-2)

Land Use	Amount for Shared Parking Model	Notes
Residential units (total)	820 dwelling units Condominium = 241 Rental = 579	
Commercial (total) Retail Fine/casual dining Family restaurant Fast food Cinema Hotel	79,200 GLA 15,300 GLA 15,300 GLA 4,500 GLA 1,000 seats 200 rooms (112,000 GLA)	(GSF translated to GLA using 90% for retail, restaurant, and office; and 80% for hotel)
Office	536,400 GLA	
Metrolink/Santa Clarita Transit station	750 parking spaces	

[3] The division of total commercial square footage into retail and various types of restaurant spaces is an assumption based on the best information available about the likely tenant characteristics. The same is true for the unit sizes and ownership/rental mix on the residential uses. Should these characteristics significantly change as the project nears implementation, the shared parking model would be rerun. Similarly, the relationship between GSF and GLA may vary as specific project plans are completed. As more precise GLA data is available, it should be part of a new shared parking model run, which is required prior to the issuance of a building permit for each incremental phase in PA-1 and PA-2.

3.0 Parking in a TOD

"Shared parking is the use of a parking space to serve two or more individual uses without conflict or encroachment." (ULI 2005) TODs have greater use of non-automobile modes for commuting and shopping as well as lower auto ownership on the part of residents. In addition, the various uses in a mixed-use project have different peak parking occupancy periods, which creates the possibility for shared parking. Appendix A provides questions and answers on shared parking.

The use of standard parking rates in the mixed-use TOD portion of the project (PA-1 and PA-2) would oversupply parking, increase the cost of the development, and compromise urban design. There is precedent for deviating from standard code requirements or Institute of Transportation Engineers (ITE) parking rates, but deviation rate for TOD is not yet codified in many jurisdictions.

The park-and-ride facility for the Vista Canyon Metrolink station is included in the shared parking analysis since commuter parking is a part of the development concept. Commuter parking has low occupancy in the evenings and on weekends, making it a good match with certain retail, theater, and restaurant uses.

This Parking Demand Analysis uses ULI-recommended methodologies for adjustments, combined with California-specific data on TOD. The ULI Second Edition *Shared Parking* spreadsheet-based parking model has also been modified for this project to include commuter parking in the calculations.

The adjustment to parking requirements for the uses planned for the Vista Canyon project is dependent on the level of transit use, but the adjustment also depends on the levels of carpool, walk, and bike trips, which also affect parking demand. Although some jurisdictions provide percentage reductions to their code requirements for TOD, the best procedure is to develop place-specific estimates that reflect local or project conditions. The parking model provided here estimates parking demand for the unique neighborhood conditions that would be created in Vista Canyon.

There are some parking special considerations for residential uses in TODs, all of which justify reductions from standard code requirements. They include:

- TOD residents have lower automobile ownership than surrounding non-transit oriented development.
- TOD residents live in higher density developments and have smaller household size than a typical single family home, suburban condominium or suburban apartment.
- TODs typically include housing that has required parking in subterranean garages or parking structures. Subsequently, the problems associated with single family home or townhouse private garages being used for storage rather than vehicle parking does not occur since the garages are under property management or a homeowners' association.
- TODs include a mix of land uses within close proximity to each other, which encourages walking and bicycling for shopping and work trips.

- Finally, TODs typically have excess parking in the evening and on weekends because commuter spaces are mostly vacant during those times, which provides a "safety valve" if unusually high residential parking demand materializes.

4.0 Code Requirements and Adjustments for TOD

Cities generally base their requirements on local experience, the practice of neighboring cities, Institute of Transportation Engineers' data, and local policy (Willson 2000). Because TOD is a newer form of development in many cities, standard code requirements do not reflect the characteristics of these developments. In recent years, many cities have modified their parking codes to allow for the different parking demand characteristics of transit-oriented and mixed-use development. The City of Santa Clarita does not have special parking code provisions for transit-oriented development, however, adjustments to reflect shared parking are allowed for if justified by a parking study. The City also has a mixed-use overlay zone that provides for some parking requirement reductions and certain design features within areas covered by the overlay.

The challenge of developing parking standards for mixed-use TODs is being addressed by many cities across California and nationwide. The executive summary of Caltrans *Statewide Transit-Oriented Development: Factors for Success in California* (2004) states that "[r]esearch indicates that TOD has the potential to reduce parking per household by 20%, as compared to non-transit oriented land uses." (pp. 10). Additionally, a recent study by the University of California Transportation Center (Cervero, et al 2009) of suburban TOD housing in northern California and Portland found that the peak-parking demand was 1.15 cars per unit, considerably lower than the supply that was required by local jurisdictions.

The Vista Canyon project includes a mix of land uses in close proximity to each other. Residents within PA-1 and PA-2 could easily walk or bicycle to retail, restaurant or entertainment uses, which may make some households more likely to reduce car ownership. Additionally, a small percentage of residents within Vista Canyon would both live and work within the project. Finally, the Vista Canyon Traffic Study (Fehr and Peers, April 2010) establishes a 10% internal trip capture reduction for the project. In short, these vehicle trips would be replaced internally by walking and bicycling trips further alleviating the need for an automobile.

Some cities have made standard adjustments to minimum parking requirements to account for transit or mixed use projects. For comparison purposes, Table 3 summarizes parking adjustments that other California and west-coast cities have made to account for projects near rail transit.

Table 3. Adjustments to Parking Requirements for Transit Projects in Other Jurisdictions

City and Type of Case	Applicability	Parking Reduction
Pasadena, CA, code	Office uses within 1,320 feet of a light rail platform	25% reduction; additional reduction possible with parking study
Pasadena, CA, code	Other non-residential uses within 1,320 of a light rail platform	10% reduction; additional reduction possible with parking study
Pasadena, CA, variance example	Pinnacle Apartments at Sierra Madre Villa, BRE Properties, Gold Line	20% reduction through variance, at City's invitation
Los Angeles, CA, code, mixed-use district	Lots within 1,500 feet of a mass transit station or major bus center	Considers reductions based on study, with minimum of 2 spaces per 1,000 sf of non-residential floor area provided
Long Beach, CA, variance process	All	Case-by-case
El Segundo, CA, code	No TOD adjustments, but allows reductions to code for non-residential based on transportation systems management plan	Case-by-case
San Diego, CA, project	Rio Vista West retail/commercial	15%
Pleasant Hill, CA, Specific Plan	Office	34%
Pleasant Hill, CA, Specific Plan	Retail	20%
Pleasant Hill, CA, Specific Plan	Residential	23%
Portland suburbs, OR	General office	17%
Portland suburbs, OR	Retail/Commercial	18%

Source: City ordinances, interviews with planners, and California Department of Transportation 2002. Statewide Transit-Oriented Development Study: Factors for Success.

In addition to the standard parking reductions for proximity to transit, most cities also allow shared parking to reflect the specific characteristics of a project that incorporates various uses with different peak parking demand times. There is no common standard for reductions associated with shared parking because the reductions are entirely dependent on the mix of land uses being proposed by the project and the conclusions of a parking demand analysis.

City of Santa Clarita Parking Requirements

Santa Clarita's minimum parking requirements are provided in Chapter 17.18, Parking Standards, of the UDC, and are summarized in Appendix B. The City's UDC encourages the use of shared parking (the sharing of parking resources among land uses with different peak demand times) and provides provisions for a shared parking analysis.

5.0 Parking Demand Methodology

Parking demand for PA-1 and PA-2 is based upon the Parking Demand Analysis. The parking demand for the Vista Canyon project is compared with parking requirements under the City's UDC, to determine how the effects of a mixed-use, transit-oriented design and shared parking change parking conditions from normal, single use project conditions.

A shared parking analysis has been an accepted methodology since the first ULI shared parking report was issued in 1983. In 2005, ULI issued the second edition of this report, which includes an automated spreadsheet-based model for making calculations. This model incorporates a series of refinements over the original ULI methodology, including separate treatment of visitor and employee demand, better base parking demand rates, sensitivity to time-of-day and weekday/weekend conditions, and procedures for accounting for captive trips.

ULI's shared parking model was calibrated with data from nationwide sources, including the Institute of Transportation Engineer's *Parking Generation* report. Case studies used in calibrating the model include many Southern California mixed-use projects, such as Puente Hills Mall, Fashion Island, Long Beach Towne Center, Covina Town Square, Burbank Empire, Westfield Promenade, Irvine Spectrum, Block at Orange, and Village Glen Plaza in Westlake Village.

The methodology used for the Parking Demand Analysis follows the *Shared Parking* Second Edition procedures, which generally include the followings steps: compile project data, select parking ratios, identify critical demand periods, adjust ratios for mode split and persons per car, apply non-captive adjustments, and calculate required parking. The ULI *Shared Parking* model does not include calculations for rail station commuter parking. Therefore, the model has been modified to provide analysis of this use. This is the only modification that has been made to the model in the Parking Demand Analysis.

In analyzing PA-1 and PA-2 of the Vista Canyon TOD project, the following assumptions and conditions are built into the analysis:

- The parking supplied for PA-3 is self-contained and not part of the shared parking pool. Parking for PA-3 would comply with the City's UDC. As designed, PA-3 has a surplus of guest parking spaces.
- The parking supplied for the commercial area north of the river (PA-4) is self-contained. Parking for PA-4 would comply with the City's UDC.
- Parking for residents within PA-1 and PA-2 will not be shared with other land uses. Based upon the project being a TOD with a mix of land uses, required parking for residential units is consistent with the adopted ULI Shared Parking rates of 1.5 spaces per unit for rental housing and 1.7 spaces per unit for ownership housing (excluding visitor parking). This is a modest reduction from base UDC rates of between 1.5 and 2.0 spaces per unit (excluding visitor parking). Guest spaces for residential uses in PA-1 and PA-2 would be part of the shared parking pool.
- A Metrolink/Santa Clarita transit commuter parking demand of 750 spaces is realized during weekdays at project build-out. The current Via Princessa park and ride lot has

approximately 400 spaces, with some vacancies observed during the peak occupancy period on March 18, 2008. This means that a level that is roughly double the existing parking demand could be accommodated in the future by the 750 Vista Canyon parking spaces allocated to park and ride.

- The Vista Canyon Metrolink parking spaces would be available for the shared parking pool during non-commuting periods (weekday evenings and weekends).

Information on Transit Use Adjustments

This demand analysis involves applying ULI-recommended base parking demand ratios and then making adjustments based on the mode share and automobile ownership characteristics of those who live, work, and shop in TODs. The final step is to account for the level of captive trips resulting from the mixed-use nature of the project.

The primary data sources for making the mode choice adjustments are information from the 2000 U.S. Census and 2006 American Community Survey (ACS), as well as research results reported in *Travel Characteristics of Transit-Oriented Development in California* (2004). The results of this report for commuter rail TODs are interpreted and compared to the Vista Canyon TOD by examining census track information on mode split and residential automobile availability. These reports provide a measurement of the travel behavior of residents, employees, and shoppers in TODs.

Instead of making a standard percentage adjustment as shown in Table 3, this methodology uses a bottom-up procedure of assigning use-specific parking demand reductions to each land use, based on the California TOD study and knowledge of local conditions. The 2004 California TOD study provides case studies of five residential projects and one office building located next to commuter rail stations. Table 4 (next page) summarizes the results from that study.

Table 4. Mode Share and Auto Ownership at Commuter Rail TODs

Project name, type, density	City	Rail system	Distance from station	Transit share, work trips[4]	Household auto availability
The Crossings, residential ownership, 20 du/acre	Mountain View	Caltrain	1,066 feet	12.3%	1.89
Northpark Apartments, residential rental, 46 du/acre	Burlingame	Caltrain	1,194 feet	20.8%	1.43
Palo Alto Condos, residential ownership, N/A du/acre	Palo Alto	Caltrain	1,791 feet	0.0%	1.17
Poinsettia Station Apartments, residential rental, 16 du/acre	Carlsbad	Coaster	920 feet	9.5%	0.93
Wilshire Promenade Apartments, residential rental , 100 du/acre	Fullerton	Metrolink	1,540 feet	16.7%	2.1
Average for residential projects			**1,302 feet**	**11.9%**	**1.5**
Stadium Towers, office, 255,000 square feet, free parking	Anaheim	Metrolink	2,700	6.9%	N/A

As shown in Table 4, household automobile availability in these suburban commuter rail housing projects averages 1.5 spaces per unit. Additional information showing that residential parking demand in TODs is frequently below normal minimum requirements includes:

- A study of actual peak parking occupancy in suburban TOD housing in the Bay Area and Portland, Oregon showed a peak overnight demand of 1.15 cars parked per unit (Cervero, et al 2009).
- The Center for Transit-Oriented Development conducted a GIS analysis of 3,971 transit zones throughout the United States (transit zones are the area within ½ mile of a fixed guideway transit station). They found that households in transit zones own an average of 0.9 cars, compared to 1.6 cars in the respective metro regions (Center for Transit-Oriented Development, 2004, p. 21). Tabulations computed for Los Angeles indicate car ownership of 1.2 cars in transit zones versus 1.7 cars in the region as a whole (Belzer, 2004).

A final point of comparison on residential parking demand is the *Parking Generation Handbook* (Third Edition), produced by the Institute of Transportation Engineers. This handbook compiles parking demand data from development around the country. For residential uses, it shows a peak demand of 1.2 spaces per unit for low/mid-rise apartments (Land Use 221) and 1.46 spaces per unit for residential condominium/townhouse (Land Use 230). These demand levels are for suburban, non-TOD projects. TOD parking demands, by virtue of greater transit availability, are likely lower than these average levels.

In order to take a conservative approach to residential parking demand for the Vista Canyon project, this Parking Demand Analysis applies the basic ULI Shared Parking residential parking standards to the mix of rental and ownership housing. No downward adjustment is made to account for lower automobile ownership, as documented in the studies described above. The

[4] Total of commuter rail and bus use.

ULI rates are 1.5 spaces per unit for rental properties and 1.7 spaces per unit for ownership housing. This produces an overall parking supply level of 1.56 spaces per unit (excluding visitor parking), which exceeds the average of the projects listed in Table 4, the parking space occupancy found in the Cervero study, and parking space occupancy found in the ITE *Handbook*. This supply level, while somewhat less than that required by the UDC, is greater than any of the examples cited above.

Parking Demand Scenario

The Vista Canyon Parking Demand Analysis is based on the following assumptions:

- The Vista Canyon Metrolink Station parking would be part of the shared parking pool for the project. In summary, other land uses in PA-1 and PA-2 can use the commuter parking at specified times (for example, those having dinner at a restaurant in the evening could park in spaces vacated by daytime park-and-ride transit commuters).
- The Vista Canyon project implements its extensive pedestrian mobility system as required by the Specific Plan and that this system is safe and conducive to walking or bicycling.
- The bus transfer station is constructed and enhances service to the eastern Santa Clarita Valley and the project.
- Developers and tenants within the project offer rideshare incentives similar to those offered by existing employers in the area, such as access to ridematching information, carpool incentives, and transit pass assistance. Such programs are designed to encourage carpooling, Metrolink use, and vanpooling among office workers, retail and hotel workers, and shoppers.
- Signage, appropriate parking access control, and parking policy enforcement will ensure that users efficiently find available parking spaces.

Table 5. Scenario Assumptions

Program	PA-1 and PA-2
Commuter spaces	24 hour limit
Commercial parking spaces	On-street: 90 minute time limit Off-street: Retail shoppers: no time limits Hotel visitors: no time limits Office, hotel, and retail employees: no time limits
Residential parking spaces	Required spaces allocated to units, not shared Residential guest parking is part of the shared parking pool
Vacancy factor in the shared parking pool (demand + x %)	8% parking vacancy factor , or the inclusion of additional spaces beyond the project parking demand

Shared Parking Demand Estimate Process

The demand estimate uses the following steps:

- *Apply the appropriate ULI base parking rate to each land use, selecting ULI land use categories to suit the characteristics of Vista Canyon.* The ULI base ratios represent 85th percentile peak hour accumulations.

- *Modify the ULI model to allow commuter parking to be part of the shared parking pool.* Develop time-of-day occupancy rates for commuter parking using a modified version of rates contain in the ITE *Parking Generation,* 3rd Edition handbook for light rail transit station parking.

- *Apply mode adjustments associated with lesser use of the automobile as an access mode.* The mode choice information from the California-specific database of TOD travel behavior and U.S. Census data is used to determine appropriate adjustments.

- *Adjust the non-captive trip factor.* This procedure avoids double counting parking that is serving two uses simultaneously.

- *Run the shared parking methodology model and determine peak demand in terms of month, time of day, and day of the week.*

- *Add spaces for the vacancy factor*. An 8 percent parking vacancy factor is used, which falls within the 5-10% vacancy level typically used.

- *Add shared parking peak demand to dedicated residential spaces to determine total recommended PA-1 and PA-2 supply.*

Mode Choice Adjustment Procedures for Selected Land Use Components

The mode adjustment factor represents the percentage reduction in automobile parking demand that results from greater transit use. The base rates contained in the ULI methodology reflect conditions in suburban settings with little or no transit, walking or biking and with minimal employee ridesharing. These suburban settings generally have free parking. The adjustments made here primarily represent the impact of additional transit accessibility at the site; the level of persons per car is assumed to be similar to Santa Clarita averages.

Table 6 (next page) summarizes the mode adjustments for daytime weekday trips. It shows the recommended adjustment for the project. The justification for these adjustments is provided in Appendix C. Additional adjustments are made for weekday evening and weekend trips to account for the particular characteristics of those periods.

Table 6: Summary of Mode Adjustments for Daytime Weekday Trips

Land Use Category		Parking Adjustment (% of non-TOD demand)
Retail	Employees	90%
	Patrons	95%
Cinema	Employees	85%
	Patrons	95%
Restaurant	Employees	85%
	Patrons	95-100%
Hotel	Employees	85%
	Patrons	100%
Housing	Rental	100%
	Ownership	100%
Office	Employees	85%
	Visitors	100%
Commuter Parking		100%

Non-Captive Adjustment Procedures

The ULI Shared Parking model ("Shared Parking") allows for adjustments to reflect that fact that one parking space may serve two uses in a development simultaneously. The true parking demand is that derived from "non-captive" trips, i.e., avoiding double counting of parking demand. This is different concept from trip generation reductions associated with multi-purpose trips to a site because the parking duration formulas contained in the model account for the length of time parked for each use. Therefore, sequential activities, such as going to a movie and then eating a meal at a sit-down restaurant, are not affected by the non-captive adjustment procedure, because even though the car may not be moved, the duration of parking for each use is already accounted for in the model.

The non-captive adjustment procedures eliminate potential double counting of parking demand. The case studies provided in the *Shared Parking* report show that general practice is to apply these adjustments primarily to restaurants and to a lesser extent entertainment facilities. Small non-captive factors (85% or higher) are applied to restaurants, with higher factors applied to fast food (as much as 50%). The higher rate for fast food is associated with the fact that fast food is a short duration activity that might be undertaken on the way or during another activity, and is therefore simultaneous.

There are two factors associated with the Vista Canyon project that are not contemplated in *Shared Parking*. The first factor is the presence of the commuter rail station, which was not contemplated in *Shared Parking*. Commuter rail parking creates long-term parking demand where double counting could occur for some retail activities conducted on the way to the train (e.g., dry cleaning, buying a coffee, etc.). This would justify some non-captive adjustment in fast food and retail.

The second factor is the presence of residential uses within the project. Walking trips between residential, commercial, and restaurant uses internal to the development are not accounted for in the mode adjustments. The *Shared Parking* report does not consider case studies that included internal residential uses. The local residential uses within the site justify further non-captive

adjustment because the study assumes that the parking for residents is not shared, and therefore always available to residents. Resident parking is already accounted for and provided. Therefore, the amount of business from walking project residents that is captured by commercial uses can be considered "captive" and justifies a reduction in the non-captive adjustment factor.

Although the individual impact of commuter rail users, office workers, residents, and hotel patrons on the non-captive factor for retail uses is small, taken together they are expected to represent 15% of total retail visits, yielding a recommended 85% non captive adjustment factor for retail uses. The share of captive patrons would be highest on weekdays and daytime periods, when the commuter rail and office worker parking demand is higher. The fast food will have low non-captive parking demand, since many patrons will already be parked in the project. The recommended non-captive adjustment factors are summarized on Table 7, below.

Table 7. Non-Captive Adjustments

	Weekday, daytime	**Weekday, evening**	**Weekend, daytime**	**Weekend, evening**
Retail	85%	95%	95%	95%
Fine/Casual Dining	85%	95%	95%	95%
Family Restaurant	85%	95%	95%	95%
Fast Food	50%	50%	50%	50%

6.0 Parking Demand Results and Supply Recommendations

The following summarizes the results of the Parking Demand Analysis and compares them to code calculations. Appendix D contains input and output sheets from the ULI/Vista Canyon Shared Parking model, showing the amount of development, adjustment factors, and captive factors for each land use, as well as a summary of the peak occupancy month, demand by land use at the peak utilization time on weekdays and weekends, and peak predicted demand. At build out, the Parking Demand Analysis for PA-1 and PA-2 assumes that transit parking is shared in the evening hours and on weekends, parking for all uses is free, and that residents' spaces are not shared (but guest parking is shared). The following are the key conclusions:

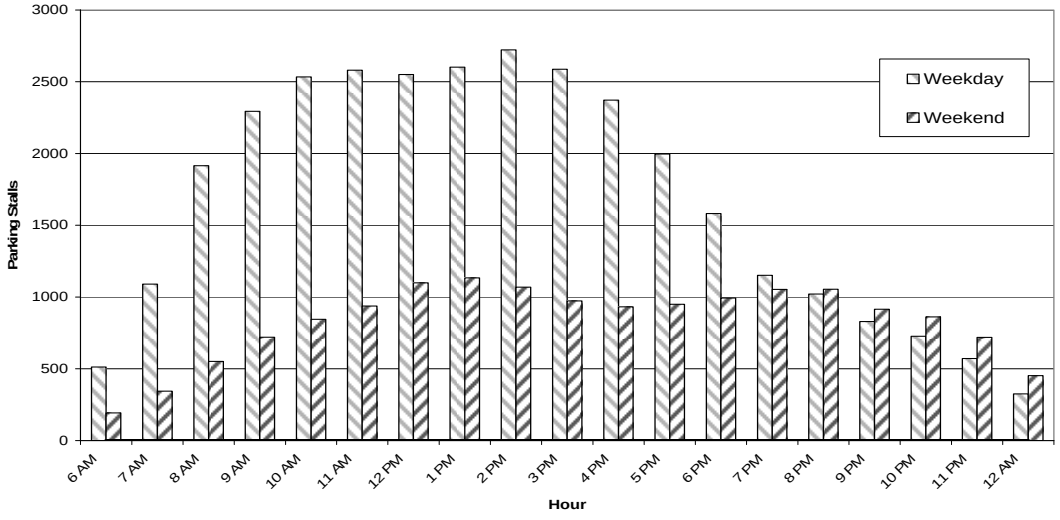
Residential Uses

The residential parking supply proposed for the project is 1,277 spaces (867 spaces for 578 rental units and 410 spaces for 241 ownership units), based on the ULI Shared Parking recommended parking ratios of 1.5 spaces per unit for rental units and 1.7 spaces per unit for ownership units. This parking is reserved for residents and is not part of the shared parking pool. Guest parking is not included in this total, but is included in the shared parking calculations.

Non-Residential Uses and Guest Parking

- **The peak weekday demand is 2,721 spaces for PA-1 and PA-2 (see Figure 2).**
- December is the peak month for demand, which corresponds to higher use of retail parking. Month-to-month demand is relatively consistent, varying less than 120 spaces.
- The peak hour of parking demand is 2:00 PM.
- Excess capacity exists in the weekday evening hours. Over 1,000 spaces are unoccupied between 6:00 PM and 6:00 AM on weekdays.
- Excess capacity exists on weekends. Peak weekend demand (1:00 PM) is 1,133 spaces, 42% of the peak weekday demand.

Figure 2. Peak Month Daily Parking Demand, Non-Residential and Guest Parking



It is common practice to add a vacancy factor in sizing a parking facility to allow for circulation and to help parkers more easily find available spaces. Conventional practice is to add 5-10% to predicted peak demand.[5] This scenario uses an 8% parking vacancy factor, which adds 218 parking spaces to the peak weekday demand of 2,721 spaces, resulting in a final recommended parking supply of 2,939 spaces. An 8% vacancy factor is justified because the parking pool includes day-long commuter parking, which fills efficiently.

Summing the shared parking analysis recommended supply for PA-1 and PA-2 with the non-shared residential parking of 1,277 spaces yields a recommended parking supply of 4,216 spaces. This is the total parking supply recommendation for PA-1 and PA-2.

The amount of parking shown in PA-1 and PA-2 is 4,390 spaces. **Therefore, PA-1 and PA-2 exceeds the parking level recommended in this report by 174 spaces, as shown in Table 8.**

Table 8. Comparison of Parking Levels

	UDC Parking Requirements[6]	**Vista Canyon Parking Reduction/Shared Parking Demand Analysis**	**Vista Canyon Parking Supply**
Residential spaces, excluding visitor; not shared	1,516	1,277	1,277
Visitor Parking (Residential Uses)	410	Part of shared parking pool	Part of shared parking pool
Commercial, Metrolink, and residential visitor spaces; shared)	4,761	2,939[7]	3,073
Total spaces	6,687	4,216	4,390

Some TODs use parking pricing as a way to manage parking demand, encourage transit use, and recover some of the costs of providing parking. This report assumes that parking will be free, but the analysis in Appendix E provides information on the implications of using parking pricing.

[5] Weant and Levinson (1990) indicate that common practice is to set code requirements 5 – 10% greater than peak demand (pp. 41).
[6] These calculations are based on project data derived from TTM 69164 using parking calculations from the City's Unified Development Code.
[7] Includes 8% parking vacancy factor.

7.0 Implementation

This Parking Demand Analysis establishes the parking requirements for PA-1 and PA-2 of the Vista Canyon Specific Plan. Because the exact specifications and uses within these planning areas may change as each portion of the project is built, this Parking Demand Analysis includes the following requirements:

- Parking requirements within PA-1 and PA-2 will be calculated using the Vista Canyon/ULI Shared Parking model included within the Parking Demand Analysis.

- The parking requirements for PA-1 and PA-2 may be adjusted by the project applicant and the City based on new information related to changes in user characteristics, daily parking patterns, and intensity of use. Such changes must be based on documented field studies, experience with other similar projects, or other relevant data, but will rely on the Vista Canyon/ULI Shared Parking model. Any substantial changes to the parking requirements for PA-1 and PA-2 by the project applicant are subject to the review and approval of the Director of Community Development.

- Specific uses, square footage, parking locations, and number of parking spaces as shown on Tentative Map 69164 for PA-1 and PA-2 may be revised consistent with the requirements of the Specific Plan.

- On-street parking within PA-1 and PA-2 is part of the shared parking pool.

- Selective gating, card operated entry points, chaining, limited duration parking zones or other parking control techniques may be utilized within PA-1 and PA-2 to the extent that they do not negatively impact the function and effectiveness of the Vista Canyon Shared Parking Program. See Appendix F (Protecting Parking Capacity for Other Users) for information on these techniques.

- Required parking for any residential use within PA-1 and PA-2 of the project is not included within the shared parking pool.

- Pursuant to the Vista Canyon Specific Plan, the project would be developed in phases. Residential uses within PA-1 and PA-2 shall be parked at a number equal to the City's UDC requirements until such time that the Metrolink Station is constructed and operational and a minimum of 50,000 square feet of non-residential floor area is constructed. This will require the construction of interim, surface parking spaces within PA-1 and PA-2 to supplement structured parking. The specific details of this interim parking plan will be included in an updated Parking Demand Analysis prepared for each incremental phase of development within PA-1 and PA-2.

- An Updated Parking Demand Analysis shall be performed for each incremental phase of development within PA-1 and PA-2 prior to construction. Shared parking demand, interim parking and the identification of available parking spaces must be calculated for

each phase of development, and the required number of parking spaces must be provided to meet the calculated parking demand.

- The project applicant must record reciprocal parking easements over the parking spaces within the shared parking pool in PA-1 and PA-2. Additionally, the Covenants, Codes and Restrictions prepared for PA-1 and PA-2 must reference and incorporate the requirements of the approved Parking Demand Analysis including any approved updates.

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Appendix A
Question and Answers on Shared Parking

1) How are parking requirements typically developed and applied for single-use projects?

Parking requirements are based on the peak parking demand predicted for a single land use, plus a vacancy factor for circulation. Ordinances usually require that each site provide enough parking to exceed the maximum demand, not accounting for "park once" users that patronize several different uses within a commercial site, the different peak demand periods of uses in a mixed-used project, and the presence of non-automobile options such as transit, walking and bicycling. This results in unused spaces during various times of the day when there is less activity.

2) How do cities address parking requirements for mixed-use, transit-oriented projects?

Most cities, including the city of Santa Clarita code, require a shared parking analysis to justify shared parking or parking reductions. The most common methodology used is the *Shared Parking* model developed by the Urban Land Institute. Decision-makers review this analysis and adopt specific parking requirements for mixed-use projects. In addition, many cities lower parking requirements for single-use projects near transit stations, through special study or standard adjustment factors.

3) How does shared parking work?

"Shared parking is the use of a parking space to serve two or more individual uses without conflict or encroachment." (ULI, 2005) Shared parking has been a fundamental principle of downtown planning for over a century and is increasingly adopted in mixed-use projects. The goal of shared parking is to find a balance between providing adequate parking and avoiding the negative consequences of devoting excessive land or resources to parking. Cities support shared parking because it produces better, more successful projects, reduces water quality impacts, and promotes transit and pedestrian use.

Shared parking is applied to mixed-used projects in which the land uses have different occupancy times for parking. The demand for each land use is predicted, hour-by-hour. The hourly demand is summed to arrive at the total peak demand (often occurring at 1:00 PM on weekdays). Project-specific parking requirements are then adopted based on peak demand plus a vacancy factor of between 5% and 10%.

Shared parking assumes that the design and management of the parking facility allows for sharing by not physically separating parking spaces for each land use. Shared parking uses a "pool" concept where spaces are not permanently allocated to a particular use at all times. Parking management tools are used to ensure that each land use receives the appropriate amount of parking without conflict. In this way, the efficiency of the mixed-use development concept is realized by avoiding having each use provide parking that is unoccupied for part of the day.

For example, if a restaurant has peak demand in the evening while an office building has peak demand during the day, those two uses can share a portion of the parking. In other words, a single space can serve both the office use (around its peak demand of 2:00 PM) and the restaurant (around its peak demand of 8:00 PM).

Appendix B
Santa Clarita Code Requirements

(NEXT PAGE)

Appendix B
Santa Clarita Code Requirements

Land Use	Quantity	Per unit rate	Santa Clarita 17.18 Space Requirement (citywide)	Number of spaces under 17.18	Equivalent quantity (GSF)	Assumed GLA equivalent
Shopping Center f (17b(2))	88,000	GSF	0.005	**440**	88,000	79,200
Restaurant (limited and full)	1,147	seats	0.33	382	34,085	
Restaurant other customer service area	4,915	SF of other customer service area	0.045	221	4,915	
Total restaurant				**604**	39,000	
Indoor entertainment (Cineplex (16c.))	1,000	seats	0.33	333	30,000	
Indoor entertainment (Cineplex (16c.))	150	occupant capacity in other customer service areas	0.33	50	1,000	
Total cineplex				**383**	31,000	
Hotel-Business	200	rooms	1	**200**	140,000	
Studio	110	units	1.5	165		
1 bedroom	275	units	1.75	481		
2 bedroom +	435	units	2	870		
Guest, rental		units	0.5	410		
Total, residential	820			**1,926**		
Professional offices	596,000	GSF	0.004	**2,384**		536,400
Commuter rail parking	750	spaces		**750**		
Total				**6,687**		
Total w/o housing (residents, not visitors)				5,171		

Total residential units	820	Assumptions:	No shared parking, no reduction for transit
Total non-residential GSF	894,000		or captive simultaneous trips
Total Metrolink parking	750		

Appendix C
Justifications for Commuter Parking Adjustments and Estimates

Peak Weekday Commuter Parking Demand

The 750-space commuter parking demand is based on current demand at the Via Princessa station, allowing for additional growth. Via Princessa currently has 392 spaces, which are 90-95% occupied during the peak occupancy period. At buildout, Vista Canyon would include a 750-space commuter parking area which accounts for an almost 100% growth in parking demand. This growth also assumes a substantial future increase in train service levels. Therefore, the 750 spaces included in the project is a generous supply, assuming that parking continues to be free of charge.

Time-of-Day Distribution of Commuter Parking Demand

The ULI *Shared Parking* model does not include a land use category for a rail transit station. Therefore, the model has been modified to include this use. A time-of-day distribution is needed to estimate sharing possibilities for that parking. The Institute of Transportation Engineers *Parking Generation*, Third Edition, includes information on Land Use 093, "Light Rail Station with Parking", which indicates a pattern of demand that ramps up from 44% at 7:00 AM to 100% occupied by 11:00 AM and declining in the late afternoon to 6% at 8 PM. This distribution has been modified to account for the narrower role of a commuter rail station in serving journey-to-work commuters. The time-of-day distribution assumes an occupancy rate that rises with initial service at the Via Princessa station (first train at 4:52 AM) and reaches 100% of peak demand by 9:00 AM. The distribution assumes full occupancy until evening trains begin arriving at about 6 PM.

Relationship between Weekday and Weekend Metrolink Ridership

The analysis assumes that the 750 commuter parking space demand will be exhibited on weekdays if parking is free, prior to adjustments for parking pricing effects. On weekends, commuter rail parking demand will be much less. The weekend parking demand is estimated by applying the weekend/weekday ridership ratio for the Antelope Valley line to parking demand. Using Metrolink's September 2007 ridership data (7,143 weekday/1,824 weekend) produces a ratio of 25.5%. This ridership ratio is assumed to apply equally to parking demand. Therefore, the peak weekend parking demand is estimated to be 750 * 0.255 = 169 spaces.

Retail Shoppers

Travel Characteristics of TOD in California (2004) studied the mode choices of shoppers at Fashion Valley on the San Diego Trolley using intercept surveys. This site showed mode shares of 7.2% rail transit, 5.6% bus transit, and 1.6% walk, for a total non-auto mode share for shoppers of 14.4%.[1] No retail projects were studied on a commuter rail line, as the traditional role of commuter rail is journey-to-work rather than shopping trips. As a result, it is not expected that retail shoppers will use Metrolink for shopping trips, so no mode adjustment is justified for commuter rail. There are two other factors, however, that should be considered. First, the project includes a Santa Clarita Transit bus hub. This bus hub will deliver some shoppers (primarily young and older people, and those without access to a car) to the site. In addition, there is a dense cluster of residential uses to the immediate west of the site, which will attract walking and bicycling trips to the retail uses.

Given these factors, the expected non-auto share will reflect limited bus and walk access. A 95% mode adjustment factor is recommended for retail shoppers.

Retail Employees

Travel Characteristics of TOD in California (2004) did not study retail employees. Retail workers are unlikely to commute by Metrolink because they tend to be drawn from a local labor market, have irregular work hours, and are price-sensitive on commuter rail transit fares. Bus transit access is a more significant factor in the mode choice of retail employees. In 2006, the journey-to-work mode choice for all workers in Santa Clarita was 4.7% transit, 1.6% walk, and 15.3% carpool.[2] Transit and walk trips eliminate parking demand; carpool trips cut parking demand by at least 50%. Therefore, applying the existing Santa Clarita mode choice to the retail workers would reduce parking demand by 13.9%.

The site is separated from the bulk of the Canyon Country community by the SR-14 freeway, but enhanced transit access provided by the new bus hub and the lower wage nature of retail jobs should ensure a reasonable level of transit, carpooling, biking and walking. A conservative mode adjustment estimate of 90% is recommended.

Restaurant and Cineplex Patrons

Restaurant patrons are unlikely to use Metrolink or bus service to access the facility. Some patrons will walk or bicycle from the adjacent residential areas. Others, who do not drive, may be dropped off. The mode adjustment factor recommended for restaurants is 90-100% depending on the time of day and type of restaurant use. The analysis in Appendix D divides restaurants into fine/casual dining restaurant, family restaurant, and fast food. A 95% rate is recommended for the Cineplex visitor, reflecting a small bus share among movie goers.

[1] That study also surveyed the Hollywood/Highland project in Los Angeles and El Cerritos Plaza in the Bay Area but those projects are larger and located on heavy rail systems and therefore not comparable.
[2] American Community Survey, U.S. Census.

Many restaurant patrons are likely to walk from office, retail, and residential development within the project area – these internal trips are reflected in parking occupancy duration and the non-captive adjustment, which are discussed in the main body of the report.

Restaurant and Cineplex Employees

A mode adjustment factor of 85% is recommended. Restaurant and Cineplex workers are much more likely to use the bus, walk or bicycle than take Metrolink. A portion of restaurant workers may not have access to a car.

Hotel Visitors

Travel Characteristics of TOD in California (2004) studied the mode choice of hotel visitors at two sites—the Doubletree-Mission Valley Hotel near the San Diego Trolley's Hazard Center (light rail) and the Embassy Suites near BART's Pleasant Hill Station (heavy rail). The non-auto modes used for accessing the hotel by guests included 7.1% hotel shuttle, 4.8% taxi, and 2.4% bus transit, for a total of 14.3%.

Hotels located next to commuter rail stations were not studied. Metrolink does not provide direct access from LAX, although the City of Los Angeles provides non-stop bus service between LAX to Union Station, where a traveler could catch the Antelope Valley line to the project site. The Antelope Valley Metrolink line also has a stop in the vicinity of Bob Hope Airport in Burbank. Even though it is technically possible to arrive at the site by commuter rail, the restricted service frequency of Metrolink means that most hotel patrons will drive. Air travelers are sensitive to multiple transfers because of their luggage. No mode adjustment is used for this analysis (100% auto access is assumed).

Hotel Employees

Travel Characteristics of TOD in California (2004) studied the mode choice of hotel employees at two sites—the Doubletree-Mission Valley Hotel near the San Diego Trolley's Hazard Center and the Embassy Suites near BART's Pleasant Hill Station. Rail transit represented a 41.4% share of the hotel employee work trips. However, both these locations have higher transit frequencies than the Metrolink. Nonetheless, hotel workers are a prime transit market for buses, walking, biking, and drop off. A mode adjustment of 85% is recommended.

Residential

Unlike other uses in which travel mode choice determines the amount of parking that is demanded, residential parking demand is determined by the level of automobile ownership. Also, it is common for residential parking to be reserved for that use rather than part of the project-wide sharing pool, although some sharing of residential parking may be appropriate for this project.

Rental Housing

The tenure of housing (rental versus ownership) is correlated with income and automobile availability. Rental housing generally has lower household vehicle availability than ownership housing. According to the 2006 American Community Survey (ACS)[3], the average household automobile availability in rental housing in Santa Clarita is 1.54 vehicles per household. Residents having lower levels of car ownership frequently self-select into the TOD to take advantage of the transit access.

The baseline ULI parking rate for rental housing is 1.5 spaces per unit (not including visitor parking). This rate is in line with the level of vehicle availability in the California TOD study and similar to the rate for existing rental units in the city of Santa Clarita, so no downward adjustment of the base vehicle parking ratio is recommended. The 100% rate is used in the model. The ULI guest parking ratio of .15 per unit is not adjusted for this model. No mode adjustment is used to adjust for visitors.

Ownership Housing

Ownership multifamily housing generally has a higher automobile ownership rate associated with a higher income profile of tenants. The base rate in the ULI model is 1.7 vehicles per unit. The ACS automobile availability rate for ownership housing in Santa Clarita is 2.22 vehicles per unit. It is important to note that these rates include single family homes, which have higher rates of automobile ownership than multi-family condominiums. The standard ULI rate of 1.7 vehicles per unit is used; no mode adjustment is made.

The ULI guest parking ratio of 0.15 per unit is not adjusted for this model. No mode adjustment is used to account for a share of the visitors arriving by automobile.

Office Employees

Transit mode shares in the *Travel Characteristics of TOD in California* (2004) varied widely, depending on the rail system and the context. The combined rail and bus transit share was as high as 38.5% at BART's Berkeley sites to as low as 2.9% at the San Diego Trolley's Mission Valley station. One site was surveyed on a commuter rail line. The Stadium Towers project in Anaheim, with a long walking distance to a Metrolink station, achieved a 6.9% transit share.

In 2006, the journey-to-work mode choice for all workers in Santa Clarita was 4.7% transit, 1.6% walk, and 15.3% carpool (ACS 2006). Transit and walk trips eliminate parking demand; carpool trips cut parking demand by at least 50%. Therefore, applying the existing Santa Clarita mode choice to the retail workers would reduce parking demand by 13.9%. The office components of the project, however, will draw from a sub regional labor market. The 2006 Los Angeles County journey-to-work mode split was 7.0% transit, 2.8% walk, and 7.0% carpool, which would reduce parking demand by 13.3%.

[3] The American Community Survey is an annual survey produced for the U.S. Census in conjunction with the decennial census.

Therefore, applying the existing Santa Clarita or County of Los Angeles mode choice data to this project would reduce parking demand by more than 10%. It is reasonable to conclude that the transit share at the Vista Canyon Ranch will exceed city averages--a conservative mode adjustment factor of 85% is recommended if parking is free. The number could be greater if major office tenants draw from a Lancaster/Palmdale labor market that can use Metrolink.

Office Visitors

Travel Characteristics of TOD in California (2004) does not provide data on office visitors. No mode adjustment is made for this type of trip (100% is used).

Appendix D

Shared Parking Model Calculations

Project: Vista Canyon TOD, Santa Clarita
Description: Mixed-Use TOD, PA-1 and PA-2
(8% parking vacancy factor)
ksf = thousand square feet

Projected Parking Supply:					Mode Adjustment				Noncaptive Ratio			
			Max Parking Spaces		Weekday		Weekend		Weekday		Weekend	
Land Use	Quantity		Weekday	Weekend	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening
Community Shopping Center (<400 ksf)	79,200	sf GLA	230	253	95%	95%	95%	95%	85%	95%	95%	95%
Employee			55	63	90%	90%	90%	90%	100%	100%	100%	100%
Regional Shopping Center (400 to 600 ksf)		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Super Regional Shopping Center (>600 ksf)		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Fine/Casual Dining Restaurant	15,300	sf GLA	233	260	100%	100%	100%	100%	85%	95%	95%	95%
Employee			42	46	85%	85%	85%	85%	100%	100%	100%	100%
Family Restaurant	15,300	sf GLA	138	195	95%	95%	95%	95%	85%	95%	95%	95%
Employee			23	34	85%	85%	85%	85%	100%	100%	100%	100%
Fast Food Restaurant	4,500	sf GLA	57	54	95%	95%	95%	95%	50%	50%	50%	50%
Employee			10	9	85%	85%	85%	85%	100%	100%	100%	100%
Nightclub		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Cineplex	1,000	seats	190	260	95%	95%	95%	95%	100%	100%	100%	100%
Employee			10	10	85%	85%	85%	85%	100%	100%	100%	100%
Performing Arts Theater		seats	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Church (added by analyst; ITE Rate 560)	0	GSF	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Pro Football Stadium		seats	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Pro Baseball Stadium		seats	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Health Club		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Convention Center		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Hotel-Business	200	rooms	200	180	100%	100%	100%	100%	100%	100%	100%	100%
Hotel-Leisure		rooms	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Restaurant/Lounge		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Conference Ctr/Banquet (20 to 50 sq ft/guest room)		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Convention Space (>50 sq ft/guest room)		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			51	36	85%	85%	85%	85%	100%	100%	100%	100%
Town Center Residential, Rental, Shared Spaces	579	units	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Reserved	0	sp/unit	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Guest	579	units	87	87	100%	100%	100%	100%	100%	100%	100%	100%
Town Center Residential, Owned, Shared Spaces	241	units	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Reserved	0	sp/unit	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Guest	241	units	36	36	100%	100%	100%	100%	100%	100%	100%	100%
Office <25 ksf (used for medical office)	0	sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Office 25 to 100 ksf		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Office 100 to 500 ksf		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Office >500 ksf	536,400	sf GLA	107	11	100%	100%	100%	100%	100%	100%	100%	100%
Employee			1395	139	85%	85%	95%	95%	100%	100%	100%	100%
Data Processing Office		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Daycare/preschool (added by analyst; ITE rate 140)		sf GLA	0	0	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Commuter rail parking (added by analyst)	750	spaces	750	169	100%	100%	100%	100%	100%	100%	100%	100%
Employee			0	0	100%	100%	100%	100%	100%	100%	100%	100%
Subtotal Customer/Guest Spaces			2028	1505								
Subtotal Employee/Resident Spaces			1586	337								
Subtotal Reserved Spaces			0	0								
Total Parking Spaces			3614	1842								

Project: Vista Canyon TOD, Santa Clarita
Description: Mixed-Use TOD, PA-1 and PA-2
(8% parking vacancy factor)

4/23/2010

SHARED PARKING DEMAND SUMMARY

PEAK MONTH: DECEMBER -- PEAK PERIOD: 2 PM, WEEKDAY

			Weekday					Weekend					Weekday			Weekend		
	Project Data		Base	Mode	Non-Captive	Project		Base	Mode	Non-Captive	Project		Peak Hr Adj	Peak Mo Adj	Estimated Parking	Peak Hr Adj	Peak Mo Adj	Estimated Parking
Land Use	**Quantity**	**Unit**	**Rate**	**Adj**	**Ratio**	**Rate**	**Unit**	**Rate**	**Adj**	**Ratio**	**Rate**	**Unit**	**2 PM**	**December**	**Demand**	**1 PM**	**December**	**Demand**
Community Shopping Center (<400 ksf)	79,200	sf GLA	2.90	0.95	0.85	2.34	/ksf GLA	3.20	0.95	0.95	2.89	/ksf GLA	1.00	1.00	186	0.95	1.00	217
Employee			0.70	0.90	1.00	0.63	/ksf GLA	0.80	0.90	1.00	0.72	/ksf GLA	1.00	1.00	50	1.00	1.00	57
Fine/Casual Dining Restaurant	15,300	sf GLA	15.25	1.00	0.85	12.96	/ksf GLA	17.00	1.00	0.95	16.15	/ksf GLA	0.65	1.00	129	0.55	1.00	136
Employee			2.75	0.85	1.00	2.34	/ksf GLA	3.00	0.85	1.00	2.55	/ksf GLA	0.90	1.00	32	0.75	1.00	29
Family Restaurant	15,300	sf GLA	9.00	0.95	0.85	7.27	/ksf GLA	12.75	0.95	0.95	11.51	/ksf GLA	0.50	1.00	56	0.85	1.00	150
Employee			1.50	0.85	1.00	1.28	/ksf GLA	2.25	0.85	1.00	1.91	/ksf GLA	1.00	1.00	20	1.00	1.00	29
Fast Food Restaurant	4,500	sf GLA	12.75	0.95	0.50	6.06	/ksf GLA	12.00	0.95	0.50	5.70	/ksf GLA	0.90	1.00	24	1.00	1.00	26
Employee			2.25	0.85	1.00	1.91	/ksf GLA	2.00	0.85	1.00	1.70	/ksf GLA	0.95	1.00	8	1.00	1.00	8
Cineplex	1,000	seats	0.19	0.95	1.00	0.18	/seat	0.26	0.95	1.00	0.25	/seat	0.55	0.23	23	0.45	0.67	74
Employee			0.01	0.85	1.00	0.01	/seat	0.01	0.85	1.00	0.01	/seat	0.60	0.50	3	0.60	0.80	4
Hotel-Business	200	rooms	1.00	1.00	1.00	1.00	/rooms	0.90	1.00	1.00	0.90	/rooms	0.60	0.67	80	0.55	0.67	66
Employee			0.25	0.85	1.00	0.22	/rooms	0.18	0.85	1.00	0.15	/rooms	1.00	1.00	43	1.00	1.00	31
Town Center Residential, Rental, Shared Sp	579	units	0.00	1.00	1.00	0.00	/unit	0.00	1.00	1.00	0.00	/unit	0.70	1.00	0	0.70	1.00	0
Reserved		sp/unit	0.00	1.00	1.00	0.00	/unit	0.00	1.00	1.00	0.00	/unit	1.00	1.00	0	1.00	1.00	0
Guest	579	units	0.15	1.00	1.00	0.15	/unit	0.15	1.00	1.00	0.00	/unit	0.20	1.00	17	0.20	1.00	17
Town Center Residential, Owned, Shared S	241	units	0.00	1.00	1.00	0.00	/unit	0.00	1.00	1.00	0.00	/unit	0.70	1.00	0	0.70	1.00	0
Reserved		sp/unit	0.00	1.00	1.00	0.00	/unit	0.00	1.00	1.00	0.00	/unit	1.00	1.00	0	1.00	1.00	0
Guest	241	units	0.15	1.00	1.00	0.15	/unit	0.15	1.00	1.00	0.00	/unit	0.20	1.00	7	0.20	1.00	7
Office >500 ksf	536,400	sf GLA	0.20	1.00	1.00	0.20	/ksf GLA	0.02	1.00	1.00	0.02	/ksf GLA	1.00	1.00	107	0.80	1.00	9
Employee			2.60	0.85	1.00	2.21	/ksf GLA	0.26	0.95	1.00	0.25	/ksf GLA	1.00	1.00	1,186	0.80	1.00	106
Commuter rail parking (added by analyst)	750	spaces	1,000	1.00	1.00	1,000	/ksf GLA	225	1.00	1.00	225	/ksf GLA	1.00	1.00	750	0.99	1.00	167
Employee			0.00	1.00	1.00	0.00	/ksf GLA	0.00	1.00	1.00	0.00	/ksf GLA	0.00	1.00	0	0.00	1.00	0

ULI base data have been modified from default values.

Captive ratios and mode choice adjustment per Parking Demand Analysis, April 2, 2010 Richard Willson, Ph.D. FAICP

Customer (inc. ML)	1379		Customer	869
Employee	1342		Employee	264
Reserved	0		Reserved	0
Total Demand	**2721**		**Total Demand**	**1133**

Vacancy rate	8%	**218**
Supply recommended for customers, employees, ML commuters, residential guests		**2,939**
Dedicated residential parking (calculated separately)		1277
Total recommended parking, PA-1 and PA-2		4,216
PA- and PA-2 parking supply (on- and off-street)		**4,390**
Excess/deficiency (supply-demand)		174

Appendix E
Parking Pricing Scenario

As proposed, the Vista Canyon TOD would provide free parking to all users. Parking charges at office and commercial development are presently not a common practice in the Santa Clarita market area. This appendix is provided to give an indication of the likely impacts on parking demand if parking charges were used in the future.

The Vista Canyon TOD is a compact development, with a mix of land uses, requiring structured and surface parking. Parking charges are standard practice in many urban TODs, and it may be that they become so in the Santa Clarita marketplace. Parking charges are a method to recover part of the costs of building structured parking. Research shows that parking pricing has the effect of encourage transit use, thereby reducing parking demand.

Parking pricing is becoming more common in many types of developments. For office uses, employers find that parking charges of between $30 and $50 per month can increase transit use by commuters. Parking charges are also being introduced in many retail uses. For example, the Grove in Los Angeles and the Americana at Brand development in Glendale offer the first hour free and charge escalating per-hour rates beyond one hour. The Paseo development in Pasadena charges $2 per hour.

For residential uses, developers of rental housing near transit stations have begun to "unbundle" parking costs from apartment leases. For example, a TOD project in Pasadena offered one space free per unit, but charged $75 per month for an additional space. This creates an incentive for lower automobile ownership and helps lower the base rent. In sum, many successful TODs in California use parking pricing to reinforce transit use and help pay for the substantial cost of structure or underground parking.

Metrolink parking facilities are provided by local jurisdictions. Past practice has been to offer free parking on a first-come, first-served basis. However a number of cities have begun to charge for parking at their Metrolink parking facilities.[1] Some cities charge different rates for residents versus other parkers, to prioritize their investment in parking for local residents.

Table E-1 (next page) summarizes the assumptions made in a parking pricing scenario for the Vista Canyon TOD.

[1] Some cities along Metrolink charge for parking for commuters. Norwalk/Santa Fe Springs, San Juan Capistrano, San Clemente, Covina, and Baldwin Park charge for parking. For example, Covina charges $20 per month for city residents and $45 per month for non-residents. Also, the Los Angeles Metro system currently charges between $20 and $39 for reserved parking at its light and heavy rail station lots. Caltrain in Northern California charges $2 per day.

Table E-1. Parking Pricing Scenario

Program Element	Parking Pricing and Management
Commuter spaces	$1.50 per day with transit use validation, or $30 per month; $20 per month discounted rate offered to Santa Clarita residents
Commercial parking spaces	On street: no time limit; $1 per hour Off-street: Retail shoppers: first hour free, $2 per hour, up to $6 maximum Hotel: $10 per day Office, hotel, and retail employees: $50 per month
Residential parking spaces	Rental: One space is free per unit; additional parking costs $50 per month. One space is allocated to each unit; the remainder is part of shared parking pool. Ownership: All spaces allocated to unit, not shared. Cost of one space per unit bundled with purchase price; additional parking cost rented or purchased separately ($50 per month or amortized value for purchase) Residential guest parking in PA-1 and PA-2 is shared.

Commuter Parking Pricing

The parking charge scenario assumes that a $30 per month non-resident charge and a $20 per month resident charge would exist at this station. Using a -0.3 price elasticity of demand on the combined two-way transit fare and parking charge (assuming an even split between residents and non-residents) is estimated to reduce parking demand by 5.5%, which results in a mode adjustment factor of .95.

Retail Shoppers

The parking pricing scenario assumes a $2 per hour charge after the first hour, which will decrease parking demand. The recommended mode adjustment factor for shoppers, however, remains at a conservative 95% because the shoppers in this market area have higher-than-average disposable incomes and may be less sensitive to parking charges than shoppers in other markets.

Retail Employees

The parking pricing scenario assumes a $50 per month employee parking charge, which is likely to decrease parking demand. The mode adjustment factor for the parking charge scenario is 80%, reflecting the expected greater sensitivity of lower wage workers to parking pricing.

Restaurant and Hotel Employees

A mode adjustment factor of 75% adjustment factor is used for the parking charge scenario.

Rental Housing

The parking charge scenario assumes a $50 monthly fee on spaces greater than 1 space per unit. This is predicted to reduce residential parking demand for priced spaces and change the mode adjustment factor for those spaces to 90%.

Ownership Housing

The parking pricing scenario assumes one space per unit is purchased with the unit and that spaces above one per unit are rented at a $50 monthly fee. This will reduce parking demand somewhat; a mode adjustment factor of 95% is recommended for the priced spaces; the overall reduction factor for all spaces is 98%.

Office Employees

The parking charge scenario assumes a $50 per month parking charge, which decreases parking demand. Research on the impact of parking pricing on office worker mode choice shows reductions in automobile parking demand of up to 30% (Willson 1992, 1997). The mode adjustment factor recommended for this scenario is 80%.

Pricing Analysis Results

The Vista Canyon/ULI Shared Parking model was rerun with the pricing assumptions discussed in this appendix. The prediction for PA-1 and PA-2 was 2,586, versus 2,722 under the free parking scenario. This is a reduction of about 5 percent.

Appendix F
Protecting Parking Capacity for Designated Uses

Access control measures will likely be needed to ensure that Metrolink commuters do not park in spaces intended for other uses. There are a variety of methods for achieving this depending on whether there is gate arm control of the parking facility. The following outlines two methods--one method is open access (ungated) parking and the other method is gate arm control.

i) Open access (ungated) parking

- Commuter spaces. Commuter parking spaces are marked with a sign stipulating commuter parking only between 6:00 AM and 6:00 PM. Cars parked in these spaces are required to display a hang tag or sticker obtained from the City of Santa Clarita or the parking manager with purchase of a monthly transit pass. Daily users are required to note the space number when parking and enter that number on a parking validation machine located on the station platform. Parking enforcement warns and tows vehicles parked in commuter spots without a hang tag or a space number recorded on the parking validation machine. (A variation of this system has been used by BART to protect commuter parking).
- Spaces reserved for residents. Non-shared residential parking spaces are marked and enforcement is based on display of a permit. Alternatively, nested gate arm control could be used on this portion of the parking.
- All other spaces. Shared parking for residential, office, and employee parking are based on permit display (for monthly parkers) and time limits for visitors and shoppers. Enforcement is via the "warn and tow" procedure. For retail parking, a four-hour time limit could be applied to cars without a permit. Designated retail areas could be protected for four-hour parking.

ii) Gate arm access control

- Commuter parking. Commuters use a smart card to exit the parking structure. Daily commuters pay the cashier or a parking machine on exit. A discount could be offered with display of evidence of transit use. To ensure that rail commuters park in the commuter-designated spaces, the same procedures under the open access parking scenario apply, e.g., hang tag to park in designated spaces or parking validation machine.
- Spaces reserved for residents. Non-shared residential parking has gate arm control.
- All other spaces. Shared parking for residential, office, employee, and retail parking is based on smart card exit, or validation with a parking machine for daily parkers. Permits could be allocated by parking zone to ensure that long-duration parkers parking in designated spaces.

The free access scenario has the advantage of reducing congestion at parking entrances and exits, but still requires enforcement activity. The ultimate sanction is towing, which may have negative customer repercussions. Gate arm control offers greater options for parking management programs. The use of parking validation and payment machines can reduce the ongoing labor cost of this option.

Parking Information and Guidance Systems

Parking signage displaying parking space availability is being used in private and public parking facilities to efficiently guide parkers to available spaces. These systems can also help direct different user groups to designated parking and increase customer satisfaction. Although early uses of these systems are on larger parking structures, these systems will become the norm and are especially valuable for this project because of the multiplicity of user groups.