Attachment 11

Marquez Transportation Engineering

July 29, 2014

John Swift
Hamilton Swift and Associates
500 Chestnut Street Suite 100
Santa Cruz, CA 95060

Re: Portola Dr and 38th Avenue Project Shared Parking

Dear John:

This letter documents my findings and conclusions for shared parking analysis for the proposed mixed use project at the intersection of Portola Drive and 38th Avenue in the Live Oak Area of Santa Cruz County. The objective of this analysis is to provide a realistic estimate of the peak parking demand associated with the proposed mix of uses. Because the various uses all result in parking demand peaks at different times it behooves the developer and the responsible agency to calculate the opportunities for shared parking so as to minimize the amount of pavement necessary for parking.

Methodology

This parking analysis uses three major references for its work, "Shared Parking" prepared by Urban Land Institute in 1983, "Shared Parking" Second Edition prepared by the Urban Land Institute in 2005, and "Parking Generation Third Edition" prepared by the Institute of Transportation Engineers in 2004. The Urban Land Institute has done considerable research on the effect shared parking has on parking demand over the last 25 years. The Urban Land Institute documents quantify the premise that mixed land uses when combined require less parking than the same land uses when separately developed. These documents describe a methodology to estimate the parking demand for a variety of mixed uses. The Institute of Transportation Engineers document was used to estimate the individual use parking demand. This document provides peak parking demand measurements for a spectrum of uses. It is generally regarded as the best source for measured parking demands. Many parking codes have been developed with little if any quantifiable data to support the given requirements. Where parking is a critical concern the empirical data provided by the Institute of Transportation Engineers provides a more realistic base on which to make long term parking decisions. To be conservative the 85 percentile rate identified in the ITE reference is used as a minimum to estimate the demand. The peak parking demand calculation is done for both the weekday peak and a weekend peak period to insure that daily variations in traffic are addressed.

For purposes of estimating the parking demand the proposed project the following general breakdown of uses was assumed;

- 3200 square feet of food service uses such as coffee house, craft beer, wine bar, ice cream shop or restaurant uses
- 3200 square feet of retail non food service uses such as clothing/skin care products, art gallery, retail food related use such as candy or chocolate shop, butcher shop, wine shop, flower shop, fruit and vegetable stand.
- 3200 square feet of office and service commercial such beauty salon, computer repair, or pet grooming.

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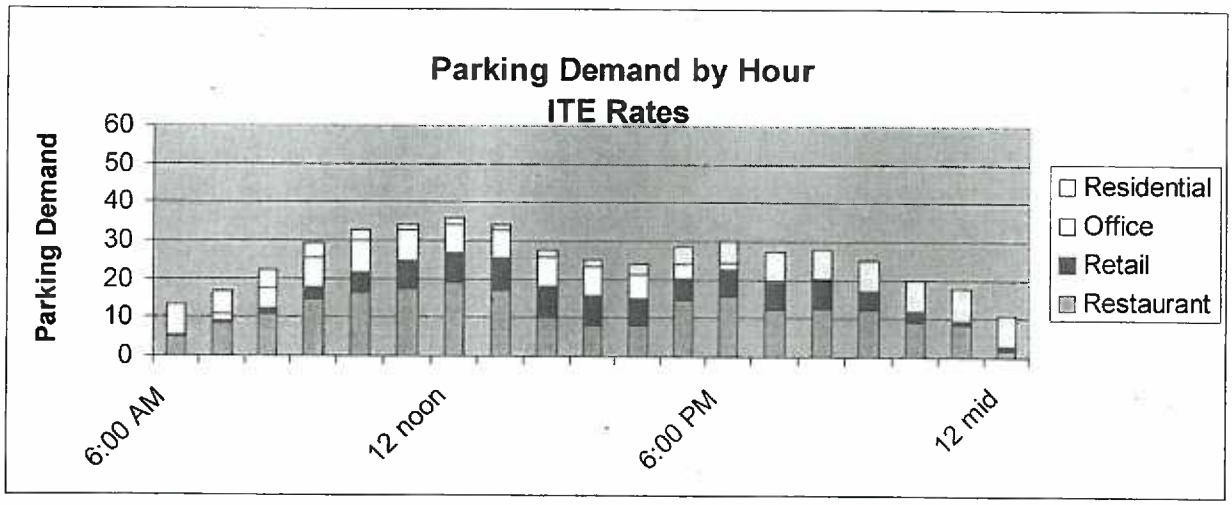
- Eight residential condominium units of two bedrooms each. Eight private one space garages are provide for these units and are not available for sharing.

- Forty-one additional parking spaces are provided on the site.

For the food service category urban high turnover sit down restaurant use rates were used (Land Use 932). For the retail non food service use the land use category combination of Copy print store and Dry cleaners was used (Land use 920 and 960.) The rate for dry cleaners was adjusted up to conform with print store. Office building (Land Use 701) rate was used for the office and service commercial category. These land use categories should provide a conservatively high estimate of the parking demand potential for the site. Parking demand could be less depending on the specific uses finally identified for the site. The residential units were evaluated as residential condo/townhouses (Land Use 230).

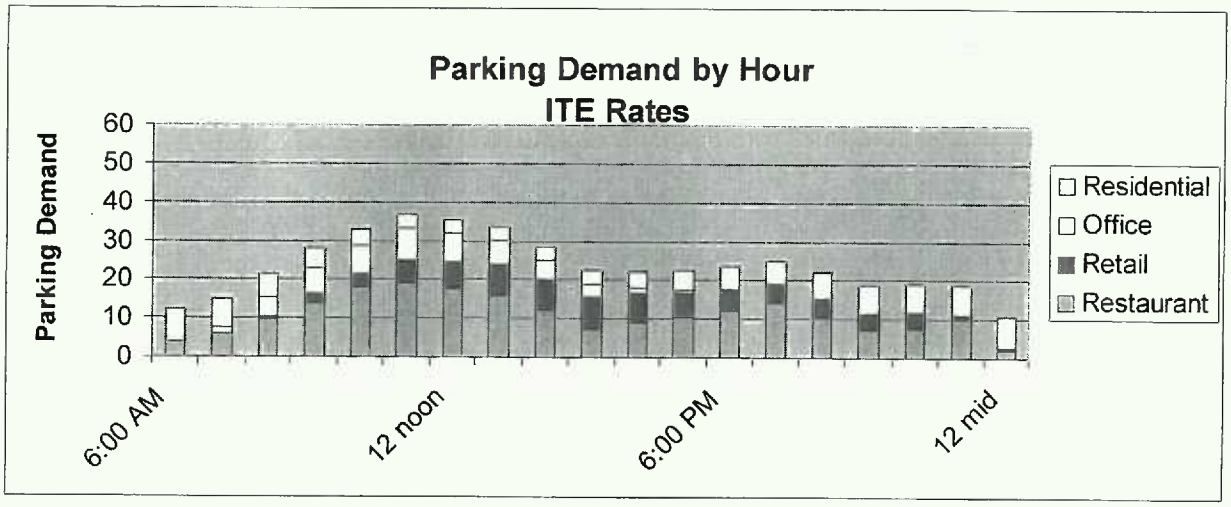
The following charts describe the uses analyzed and the maximum hourly parking demand for each of the assumed uses for weekday and weekends. The net square footage for the non-residential uses is adjusted by a factor of 85% to account for non usable square footage typical in commercial buildings. This adjustment factor is intended to account for stairways, elevators, storage and loading areas which may or not be leasable or are not considered a portion of the building attracting a parking demand. The maximum parking demand is estimated to happen at 12:00 pm on weekdays and 11 am on weekends. The hourly rates are based on values provided by the Institute of Transportation Engineers and the Urban Land Institute as the percent of the peak demand for any given hour of the day.

Chart 1. Weekday



The maximum parking demand for weekdays occurs at noon at 36 parking spaces. Based on this analysis the parking demand would be less than the number of spaces provided on site. It should be noted that the estimate excludes the 8 spaces reserved for residential use. The actual total parking demand is higher by eight spaces. The weekend parking demand is estimated to be slightly higher at 37 spaces and it occurs at 11:00 am. This estimate also remains below the parking capacity of the site. These estimates are based on assumed uses the final uses on the site will refine the analysis of parking demand.

Chart 2. Weekend



Let me know if you have any questions. Attached are two tables one which reflects the rates used for each of the uses and their individual parking demand and the second presents the values used for the attached chart. Also enclosed are pages from the ITE document which were used for these estimates.

Sincerely,

Ron Marquez, P.E.

Peak Parking Demand By Use

	Portola 38th Project		
	ITE		
Use	Size sq.ft.	Rate	Demand
Hight Turnover Restaurant	3200	6.32	19
Retail	3,200	3	8
Office	3200	2.98	8
Condominium	8	1.52	16
		Total	**52**

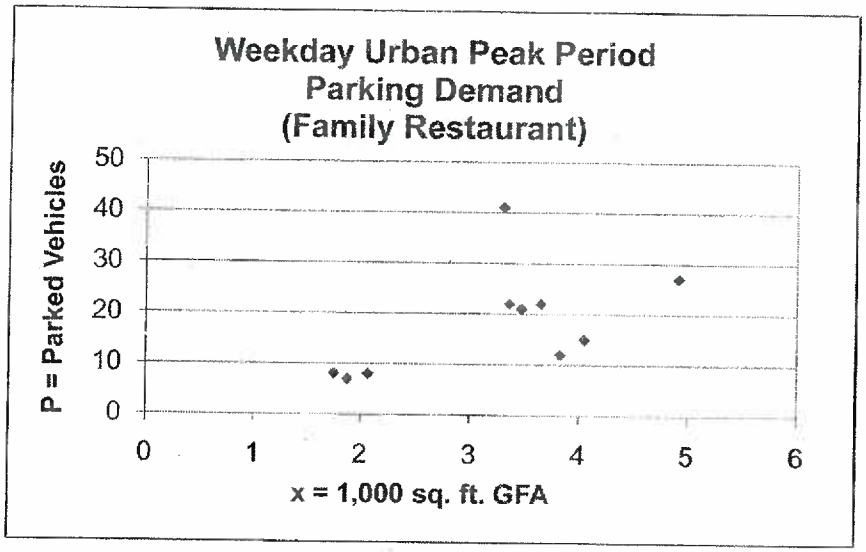
Hourly Parking Demand Less Eight Residential Garage Spaces

	Total weekday	Total Saturday
6:00 AM	13	12
	17	15
	22	22
9:00 AM	29	28
	33	33
	34	37
12 noon	36	35
	34	34
	28	29
3:00 PM	25	23
	24	22
	28	23
6:00 PM	30	23
	27	25
	28	22
9:00 PM	25	19
	20	19
	18	19
12 mid	11	11

Land Use: 932
High-Turnover (Sit-Down) Restaurant

Average Peak Period Parking Demand vs. 1,000 sq. ft. GFA
On a: Weekday
Land Use Code Subset: Family Restaurant (No Bar or Lounge)
Location: Urban

Statistic	Peak Period Demand
Peak Period	11:00 a.m.–1:00 p.m.; 6:00–8:00 p.m.
Number of Study Sites	10
Average Size of Study Sites	3,200 sq. ft. GFA
Average Peak Period Parking Demand	5.55 vehicles per 1,000 sq. ft. GFA
Standard Deviation	2.69
Coefficient of Variation	48%
Range	3.13–12.41 vehicles per 1,000 sq. ft. GFA
85th Percentile	6.37 vehicles per 1,000 sq. ft. GFA
33rd Percentile	3.86 vehicles per 1,000 sq. ft. GFA

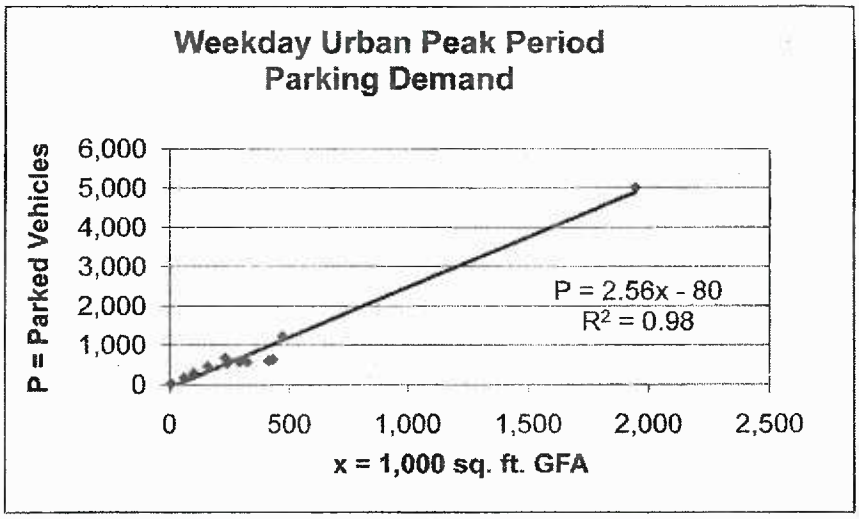


◆ Actual Data Points

Land Use: 701
Office Building

Average Peak Period Parking Demand vs. 1,000 sq. ft. GFA
On a: Weekday
Location: Urban

Statistic	Peak Period Demand
Peak Period	9:00 a.m.–5:00 p.m.
Number of Study Sites	14
Average Size of Study Sites	370,000 sq. ft. GFA
Average Peak Period Parking Demand	2.47 vehicles per 1,000 sq. ft. GFA
Standard Deviation	0.62
Coefficient of Variation	25%
Range	1.46–3.43 vehicles per 1,000 sq. ft. GFA
85th Percentile	2.98 vehicles per 1,000 sq. ft. GFA
33rd Percentile	2.24 vehicles per 1,000 sq. ft. GFA

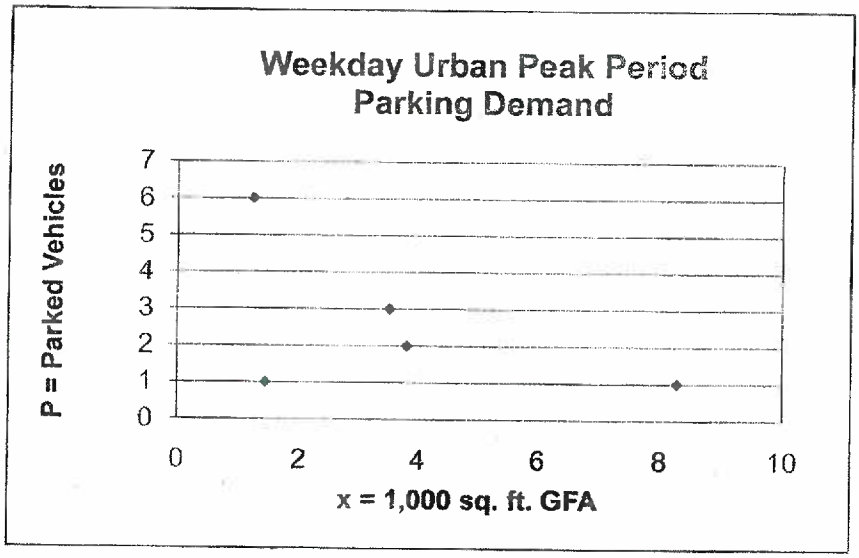


◆ Actual Data Points ——— Fitted Curve/Average Rate

Land Use: 960
Dry Cleaners

Average Peak Period Parking Demand vs. 1,000 sq. ft. GFA
On a: Weekday
Location: Urban

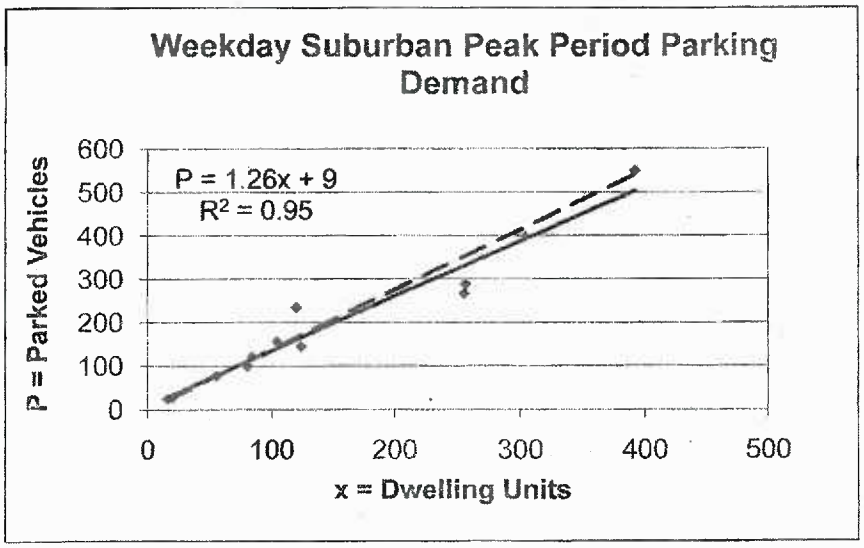
Statistic	Peak Period Demand
Peak Period	11:00 a.m.–2:00 p.m.
Number of Study Sites	5
Average Size of Study Sites	3,700 sq. ft. GFA
Average Peak Period Parking Demand	1.40 vehicles per 1,000 sq. ft. GFA
Standard Deviation	1.93
Coefficient of Variation	138%
Range	0.12–4.82 vehicles per 1,000 sq. ft. GFA
85th Percentile	2.44 vehicles per 1,000 sq. ft. GFA
33rd Percentile	0.58 vehicles per 1,000 sq. ft. GFA



Land Use: 230
Residential Condominium/Townhouse

Average Peak Period Parking Demand vs. Dwelling Units
On a: Weekday
Location: Suburban

Statistic	Peak Period Demand
Peak Period	11:00 p.m.–6:00 a.m.
Number of Study Sites	12
Average Size of Study Sites	151 dwelling units
Average Peak Period Parking Demand	1.38 vehicles per dwelling unit
Standard Deviation	0.24
Coefficient of Variation	17%
Range	1.04–1.96 vehicles per dwelling unit
85th Percentile	1.52 vehicles per dwelling unit
33rd Percentile	1.28 vehicles per dwelling unit



Marquez Transportation Engineering

June 19, 2015

John Swift
Hamilton Swift and Associates
500 Chestnut Street Suite 100
Santa Cruz, CA 95060

Re: Portola Dr and 38th Avenue Project Shared Parking Update

Dear John:

This letter documents my findings and conclusions for an updated shared parking analysis for the proposed mixed use project at the intersection of Portola Drive and 38th Avenue in the Live Oak Area of Santa Cruz County. The Planning Department has asked that we include the outdoor areas which may be available for the respective uses on the site. Outdoor use opportunities are available at three areas on the project site comprising a total of 1,218 sq ft. The objective of this analysis is to update the shared parking analysis prepared for you in July 2014. In that analysis it was concluded that the peak parking demand for the site was 36 spaces which was 5 spaces less than the 41 spaces proposed to be provided.

For purposes of this updated analysis I have assumed that the outdoor are would be used for food service related issues. This use requires the most parking per square foot compared to the other uses proposed. It is therefore a conservative estimate of the demand as predicted on the basis of hourly demand parking calculations. Based on this analysis the new peak parking demand is expected to be 43 spaces on weekdays and 44 spaces on weekends. This number exceeds the parking provided by two or three spaces depending on the day being considered.

Because the analysis last year indicated a reserve capacity further refinement was not pursued. The benefits of mixed development to parking are not only due to the fact that the respective uses peak with respect to parking at different times but also that they benefit from internal trip capture and from linked trips. Internal trips are made from uses within the site to other uses within the site. Internal trip capture would reduce trips for office uses and residential uses. From the "Trip Generation Handbook" Second Edition an estimated 11% of these trips and therefore parking spaces could be reduced. Another opportunity for parking demand reduction comes from linked trips or trips made to more than one use at the site with a single stop. The non residential trip generation may be reduced by 25% for these linked trips. For this analysis only the specialty retail and office use parking demand was reduced. This is based on the presumption that a portion of the retail customers and office clients and employees would frequent the food service uses. The total parking reduction credited for internal and linked trips amounts to six spaces. Taking this into consideration the parking demand may be estimated at 37 or 38 spaces depending on the day of the week or 5 spaces below the capacity.

My understanding of this proposed project is that is being designed to a hub in the community. As such it would draw a percentage of its clientele from the surrounding neighborhood. If the project is

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Update submitted 7/21/15

successful in this regard then a percentage of the trips to the site would be made on foot or by bicycle. I do not have empirical data on which to quantitatively evaluate this factor but it could have a beneficial effect on the parking demand for the non residential uses on the site.

Let me know if you have any questions.

Sincerely,

Ron Marquez, P.E.

Marquez Transportation Engineering

July 29, 2015

John Swift
Hamilton Swift and Associates
500 Chestnut Street Suite 100
Santa Cruz, CA 95060

Re: Portola Dr and 38th Avenue Project Shared Parking Update #2

Dear John:

This letter documents my conclusions regarding the more specific proposal to develop the retail portion of this property in a farmers market format. I previously prepared a shared parking analysis for the proposed mixed use project at the intersection of Portola Drive and 38th Avenue in the Live Oak Area of Santa Cruz County. The Planning Department has asked that we consider the effect of the farmers market type use. The objective of this analysis is to update the shared parking analysis prepared for you in July 2014 and updated to include the outdoor spaces devoted to food service in June 2015. In the latest review of the project is was concluded that the peak parking demand for the site was 38 spaces which was 3 spaces less than the 41 spaces proposed to be provided.

I did a literature search on parking generation for a "farmers market" type use and found nothing specific to such a use. In reviewing the various land use codes that would resemble this use I concluded that a supermarket use would most closely resemble what is being proposed. My opinion is that this would be a conservatively high estimate because a supermarket draws a broader range of customers than the proposed use primarily because of the larger variety of products available. The supermarket is land use code 850 in the Parking Generation reference. The 85 percentile rate provided for this use in an urban setting is 2.83 spaces per thousand square feet of use. You will note that in the July 2014 Study I used a rate of 3 spaces per thousand square feet for the 3,200 square feet of retail uses proposed for the site. Since this parking rate is actually higher than that for a supermarket by a fraction there would be no discernable change to the previous study conclusions. The peak parking demand estimate still would remain at 38 spaces (see the July 2015 Update) three spaces less than the proposed 41 spaces to be provided.

Let me know if you have any questions.

Sincerely,

Ron Marquez, P.E.

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Marquez Transportation Engineering

June 19, 2015

John Swift
Hamilton Swift and Associates
500 Chestnut Street Suite 100
Santa Cruz, CA 95060

Re: Portola Dr and 38th Avenue Project Shared Parking Update

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For purposes of this updated analysis I have assumed that the outdoor are would be used for food service related issues. This use requires the most parking per square foot compared to the other uses proposed. It is therefore a conservative estimate of the demand as predicted on the basis of hourly demand parking calculations. Based on this analysis the new peak parking demand is expected to be 43 spaces on weekdays and 44 spaces on weekends. This number exceeds the parking provided by two or three spaces depending on the day being considered.

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successful in this regard then a percentage of the trips to the site would be made on foot or by bicycle. I do not have empirical data on which to quantitatively evaluate this factor but it could have a beneficial effect on the parking demand for the non residential uses on the site.

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