

# Memorandum

**To:** Chris Schneider, Stephanie Strelow

**From:** Ron Marquez, Traffic Engineer



**Date:** January 11, 2016

**Re:** Wharf Master Plan Traffic

The memorandum documents the findings and conclusions of a traffic analysis based on the proposed buildout of the Wharf Master Plan for the City of Santa Cruz. The plan proposes a relatively small increase in commercial uses, additional public serving and access opportunities, expansion of boat docking facilities, and an increase in parking of approximately 50 spaces. The Santa Cruz Wharf is a rather unique traffic generator in the City. The site draws cars, pedestrians and bikes from the local area as well as from outside throughout the year.

For purposes of this analysis the City has provided information for gate entries and exits for the entire year of 2014. This information provides an estimate of traffic in and out of the Wharf but can also be used to estimate the parking occupancy during the course of a day. Also available were turning movement counts for the intersection of Pacific Avenue- Wharf Entrance and Beach Street taken in July of 2013 for the La Bahia Traffic Impact Study. The following general information can be derived from the this data.

- Trip generation to the wharf varies from average month of 2800 vehicles per day to 3500 vehicles per day during peak months.
- During the weekday 4 to 6 PM peak hours, trip generation is about 300 trips per hour with 60% entering during that time.
- The peak movement in and out of the Wharf tends to be an hour or two after the traditional 4 to 6 PM peak hour. This reflects the dominant trip generation associated with the restaurant uses during this time.
- Of note the 4 to 6 PM peak hour trips in and out did not change much during the peak season. The additional volume during the course of the summer day came in the early afternoon and later into the evening.
- Peak auto parking occupancy in March (considered as an average month) ranged from 314 vehicles midweek, to 404 vehicles on Friday, and to 440

vehicles on Saturday. The peaks in July were very similar on Friday and Saturday.

- Peak auto parking occupancy during July was not significantly different but remained high for longer periods of time.
- The trip generation rate for the Wharf ranged from 47 trip per 1,000 square feet of commercial area per day on average versus 58 trips per 1,000 square feet per day during summer peaks.
- The weekday PM peak hour trip generation rate was about 5 trips per hour per 1,000 square feet of development. This rate compares to that of a shopping center of similar size as provide by the Institute of Transportation Engineers in "Trip Generation Manual 9th edition". This trip rate incorporates the subsidiary uses on the wharf such as the public spaces and boat launching facilities.
- For purposes of this study one critical intersection, Pacific Avenue-Wharf Entrance and Beach Street, has been identified. A new modern roundabout was recently completed at this location. The level of service at that intersection is C under present conditions.
- The Wharf Master Plan identifies three new buildings (15,000 square feet) for publicly oriented uses and approximately 4,000 square feet of new commercial space with expansion of existing structures. The Plan also provides a preliminary estimate that commercial space could increase by 20 to 30 percent over existing development as part of future remodels and second floor expansion. The Plan also anticipates from 10 to 15% increase in parking spaces due to restriping of existing parking areas. Implementation of the Master Plan could result in some increase in visitors to the Wharf due to proposed enhancement of existing public spaces, including expansion and increased public and private events at the Wharf. Using these various figures growth could range from 6.7% to 30%. For purposes of this analysis a growth of 19,000 square feet is used. This accounts for the new commercial space and the expanded public oriented uses.
- Using this assumption the Wharf Master Plan at buildout would generate 893 new trips per day and 95 new trips during the weekday PM peak hour with 57 entering and 38 exiting during this time.
- Adding these trips to the study intersection and calculating the new level of service would result in maintaining LOS C. The roundabout has sufficient reserve capacity to accommodate the growth potential of the Wharf Master Plan.

Let me know if you have questions. The following figures graphically present the data available from the Wharf entries and exists recorded for 2014. Also enclosed are the calculation sheets for the level of service analysis.



