| Impact | Mitigation Measures | Monitoring/Reporting Requirement | Implementation Phase/Action | Notes |
|---|---|---|---|---|
| ***AIR-1:*** Mixed-use buildings that includes both residences and restaurants could result in incidents of objectionable odors from restaurants. | New restaurants located in mixed-use developments, or adjacent to residential developments, shall install kitchen exhaust vents with filtration systems, re-route vents away from residential development, or use other accepted methods of odor control, in accordance with local building and fire codes. New residences proposed in buildings or immediately adjacent to buildings that include restaurant or other odor producing uses shall be designed to reduce exposures to odors. This could be conducted through proper design of ventilations systems either at the residence or the source. | Project Sponsor(s) will submit detailed plans addressing exhaust, filtration and ventilation systems to address potential impacts from odors. | Prior to application submittal to the Town of Fairfax Planning and Building Services. | |
| | | | | |
| ***GEO-1:*** The potential for strong seismic shaking, liquefaction and landslides in high in Fairfax | Project level geotechnical engineering analysis, by a qualified California geotechnical engineer, of all potential hazards on new development sites shall be required prior to planning approval. | Project sponsor(s) will retain a qualified structural geotechnical engineer | Prior to application submittal to the Town of Fairfax Planning and Building Services. | |
| | | | | |
| ***Noise-1:*** The General Plan could result in potential impacts related to exposing persons to or generation of excessive groundborne vibration or groundborne noise levels for new construction or substantial improvements. | a) Avoid impact pile driving where possible. Drilled piles cause lower vibration levels where geological conditions permit their use.<br><br>b) Avoid using vibratory rollers and tampers near sensitive areas.<br><br>c) In areas where project construction is anticipated to include vibration-generating activities, such as pile driving, in close proximity to existing structures, site-specific vibration studies shall be conducted to determine the area of impact and to present | Project sponsor(s) will submit detailed site plan and construction plan detail | Prior to application submittal to the Town of Fairfax Planning and Building Services. | |

| | | | | |
|---|---|---|---|---|
| | • Sir Francis Drake Boulevard/Pacheco Avenue: LOS E or F conditions will continue for left-turns turning from Pacheco Avenue with or without redevelopment of the opportunity sites. Fewer than 35 vehicles per peak hour are expected to continue turning left, experiencing delays of 80 seconds or less. This volume, in comparison to the uncontrolled traffic movements at this intersection, plus the availability of alternative means to access northbound Sir Francis Drake Boulevard, do not justify mitigating the LOS E/F conditions.<br><br>• Broadway /Center Boulevard/Pacheco Avenue: The average delay for all movements at this all-way stop sign-controlled intersection is expected to equate to LOS E conditions during the PM peak period considering existing and year 2030 traffic volumes, with or without redevelopment of the opportunity sites. Installing a modern roundabout could be considered, if feasible, to mitigate these conditions. Provision of a traffic signal could exacerbate vehicle queuing through Pacheco Avenue's intersection with Sir Francis Drake Boulevard.<br><br>• Center Boulevard/Pastori Avenue: By the year 2030, with or without redevelopment of the opportunity sites, this intersection is expected to operate at LOS E during the PM peak hour. Installation of a modern roundabout could be considered in the future. | | | |

| | | | | |
|---|---|---|---|---|
| | h. Designate a noise disturbance coordinator who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaints (e.g., starting too early, bad muffler) and institute reasonable measures warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site. | | | |
| | | | | |
| ***TRAF-1:*** The development of opportunity sites in Fairfax will contribute to long-term traffic congestion in the Town of Fairfax | • Sir Francis Drake Boulevard/Mitchell Drive/Banchero Way: Stop sign-controlled left turns from Mitchell Drive currently operate at LOS E conditions during the AM peak hour. LOS E is expected to continue to result in the year 2030 without redevelopment. Redevelopment of the Christ Lutheran Church Site will degrade the left-turns to LOS F conditions and result in significant left-turn delays of two to three minutes. Traffic signalization of this intersection should be considered.<br><br>• Sir Francis Drake Boulevard/Olema Road: LOS E or F conditions will continue for left-turns turning from Olema Road with or without redevelopment of the opportunity sites. Fewer than five vehicles per peak hour are expected to continue turning left, experiencing delays of 60 seconds or less. This small volume, in comparison to the uncontrolled traffic movements at this intersection, plus the availability of alternative means to access northbound Sir Francis Drake Boulevard, do not justify mitigating the LOS E/F conditions. | The project sponsor(s) shall contribute to a fair-share the fund prior to issuance of building permits | TBA | |

| | | | | |
|---|---|---|---|---|
| | 5. Conduct post-survey on structures where either monitoring has indicated high levels or complaints of damage has been made. Make appropriate repairs or compensation where damage has occurred as a result of construction activities. | | | |
| ***Noise-2:*** Construction operations may cause noise impacts during regular construction hours | a. Limit construction to the hours of 8:00 a.m. to 5:00 p.m. on weekdays, and 9:00 a.m. to 5:00 p.m. on Saturdays, with no noise-generating construction on Sundays or holidays.<br><br>b. Control noise from construction workers' radios to the point where they are not audible at existing residences that border the Project site.<br><br>c. Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment.<br><br>d. Utilize quiet models of air compressors and other stationary noise sources where technology exists.<br><br>e. Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.<br><br>f. Prohibit unnecessary idling of internal combustion engines.<br><br>g. Notify residents adjacent to the Project site of the construction schedule in writing. | Project sponsor(s) to submit construction schedule including list of equipment | Prior to beginning of construction | |

| | | | | |
|---|---|---|---|---|
| | appropriate mitigation measures that may include the following:<br><br>1. Identification of sites that will include vibration compaction activities such as pile driving and have the potential to generate groundborne vibration, and the sensitivity of nearby structures to groundborne vibration. Vibration limits should be applied to all vibration-sensitive structures located within 200 feet of the project. This task should be conducted by a qualified structural engineer.<br><br>2. Development of a vibration monitoring and construction contingency plan to identify structures where monitoring will be conducted, set up a vibration monitoring schedule, define structure-specific vibration limits, and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions. Construction contingencies will be identified for when vibration levels approached the limits.<br><br>3. At a minimum, vibration monitoring should be conducted during initial demolition activities and during pile driving activities. Monitoring results may indicate the need for more or less intensive measurements.<br><br>4. When vibration levels approach limits, suspend construction and implement contingencies to either lower vibration levels or secure the affected structures. | | | |

TRAFFIC IMPACT ANALYSIS REPORT

# 2010-2030 GENERAL PLAN

FAIRFAX, CALIFORNIA

PREPARED FOR:

TOWN OF FAIRFAX

PREPARED BY:

Parisi ASSOCIATES
transportation consulting

JANUARY 2012

EXHIBIT # D

# TABLE OF CONTENTS

Purpose ..... 1

Existing Conditions ..... 2

Opportunity Sites Conditions ..... 8

Existing Plus Opportunity Sites Conditions ..... 10

Year 2030 Conditions ..... 12

Year 2030 Plus Opportunity Sites Conditions ..... 12

Recommendations ..... 16

## PURPOSE

The overall purpose of this report is to evaluate the potential traffic impacts that could occur as a result of implementing the Town of Fairfax 2010-30 General Plan over the next twenty years.

Though the Town of Fairfax is in large part built-out, the 2010-30 General Plan calls for the limited expansion of the historic mixed-use character of the town center area allowing for more transit-oriented development, infill development on two key opportunity sites for senior and workforce housing, and for the creation and use of existing and new second units in the residentially zoned areas – all as a way to accommodate a more equitable and sustainable evolution of the Town.

Specifically, the Town of Fairfax 2010-2030 General Plan calls for the redevelopment of six opportunity sites and/or areas for housing units affordable to a range of household types and incomes, including seniors and/or the general workforce, in addition to other community oriented land uses. These opportunity "sites" and/or "areas" are articulated in detail in the Land Use Element and the Housing Element sections of the 2010-30 General Plan and compose the basis of this analysis.

It is anticipated that this transportation impact study, as part the State required California Environmental Quality Act (CEQA) review of the 2010-30 General Plan, will provide the necessary regulatory review of specific projects as build-out occurs over the next twenty years provided that those projects are within the scope and intent of the 2010-30 General Plan. However, projects outside the scope of the 2010-30 General Plan – or formulated after final adoption of the 2010-30 General Plan, like the development of a "Town Center Plan" called for in the Town Center Element, will be subject to further CEQA review including further traffic impact studies.

## Methodology

This traffic analysis assesses potential weekday AM and PM peak hour traffic impacts at 17 intersections in Fairfax for the following four conditions:

- Existing
- Existing plus Opportunity Sites
- Year 2030
- Year 2030 plus Opportunity Sites

Further, this analysis compares the travel characteristics for proposed redeveloped sites (or "areas") with the current land uses, including estimated vehicle trip generation, distribution and assignment. The net increase or decrease in trips for the proposed redeveloped sites are overlaid on the street network for existing and 2030 traffic volumes to assess traffic operational impacts at the study intersections.

The locations of the opportunity sites and/or areas and study intersections are shown in Figure 1.

# EXISTING CONDITIONS

## Street Network

Sir Francis Drake Boulevard, Broadway, Center Boulevard and Bolinas Road are classified as Arterial Roadways in the Town of Fairfax General Plan. All other streets are classified as Local Roadways.

Sir Francis Drake Boulevard is an important east-west route serving Marin County that traverses through the Town limits. Within the Town, Sir Francis Drake is a two-lane street with left-turn lanes and right-turn lanes at most major intersections. The street serves housing and commercial land uses. All of the opportunity sites are located adjacent to Sir Francis Drake Boulevard.

Broadway /Center Boulevard together is a continuous roadway that parallels most of Sir Francis Drake Boulevard one block to the south. The street has two lanes with auxiliary turn lanes at major intersections. The street primarily serves commercial uses in the downtown and San Anselm areas. Two opportunity sites are located adjacent to the street.

Bolinas Road is a north-south, two-lane street that terminates at Broadway. Bolinas Road primarily serves residential areas and a couple of commercial blocks in the downtown area. One opportunity site is located adjacent to the street.

## Traffic Volumes

Seventeen intersections along the study area roadways were evaluated in this report, including three signalized intersections, three all-way stop sign-controlled intersections, and 11 intersections with one-way or two-way stop sign-control. Table 1 shows the type of traffic control at each intersection.

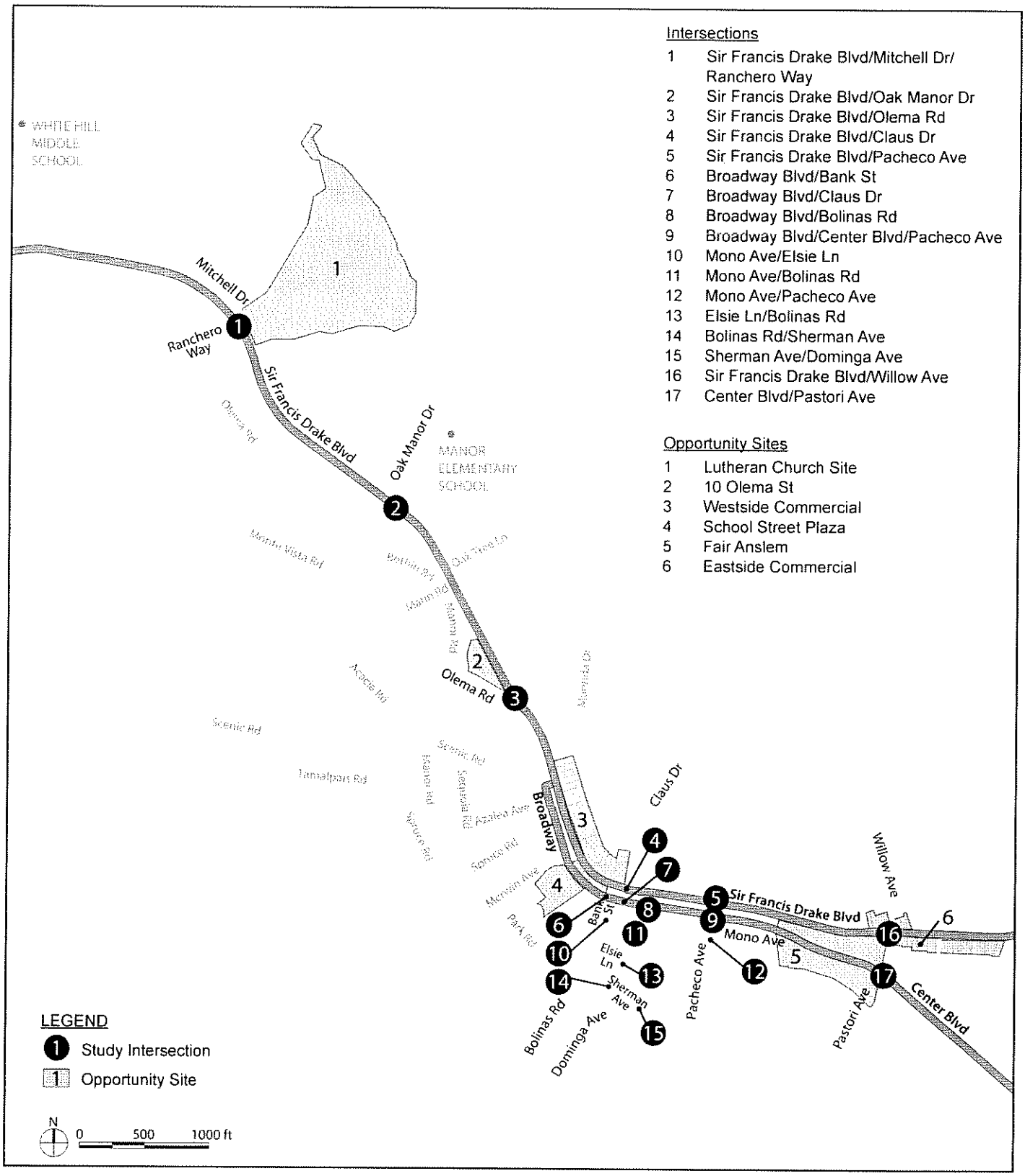



FIGURE 1
**Study Intersections**

Parisi ASSOCIATES transportation consulting

24 January 2012

**Table 1. Study Intersections and Traffic Control**

| No. | Intersection | Control |
|---|---|---|
| 1 | Sir Francis Drake Boulevard/Mitchell Drive/Banchero Way | Two-Way Stop |
| 2 | Sir Francis Drake Boulevard/Oak Manor Drive | Signal |
| 3 | Sir Francis Drake Boulevard/Olema Road | One-Way Stop |
| 4 | Sir Francis Drake Boulevard/Claus Drive | Signal |
| 5 | Sir Francis Drake Boulevard/Pacheco Avenue | One-Way Stop |
| 6 | Broadway /Bank Street | Two-Way Stop |
| 7 | Broadway B/Claus Drive | Two-Way Stop |
| 8 | Broadway /Bolinas Avenue | All-Way Stop |
| 9 | Broadway /Center Boulevard/Pacheco Avenue | All-Way Stop |
| 10 | Elsie Street/Mono Avenue | One-Way Stop |
| 11 | Bolinas Avenue/Mono Avenue | No Stop |
| 12 | Pacheco Avenue/Mono Avenue | Two-Way Stop |
| 13 | Bolinas Avenue/Elsie Lane | One-Way Stop |
| 14 | Bolinas Road/Sherman Avenue | One-Way Stop |
| 15 | Sherman Avenue/Dominga Avenue | All-Way Stop |
| 16 | Sir Francis Drake Boulevard/Pastori Avenue | Signal |
| 17 | Center Boulevard/Pastori Avenue | All-Way Stop |

Intersection turning movements for the weekday AM and PM peak hours for the 17 intersections were obtained from three sources.

Traffic volumes for eight locations were taken from Figures C-2 and C-3 in the Circulation Element for the Town's 2010 General Plan Update. The counts were conducted by the Crane Transportation Group in January and February 2007.

The Good Earth Market traffic study, prepared by KD Anderson & Associates, Inc., was the source of traffic counts for six intersections. The counts were taken by the consultant in January 2011. The project would relocate the Good Earth Market located near the Sir Francis Drake Boulevard/Claus Drive intersection to a larger site near the Sir Francis Drake Boulevard/Pastori Avenue intersection. This report assumes the project was completed for existing conditions purposes.

Traffic counts for the remaining three intersections were conducted by Parisi Associates in October 2011 for this report.

Figure 2 shows the existing weekday AM and PM peak hour traffic volumes.

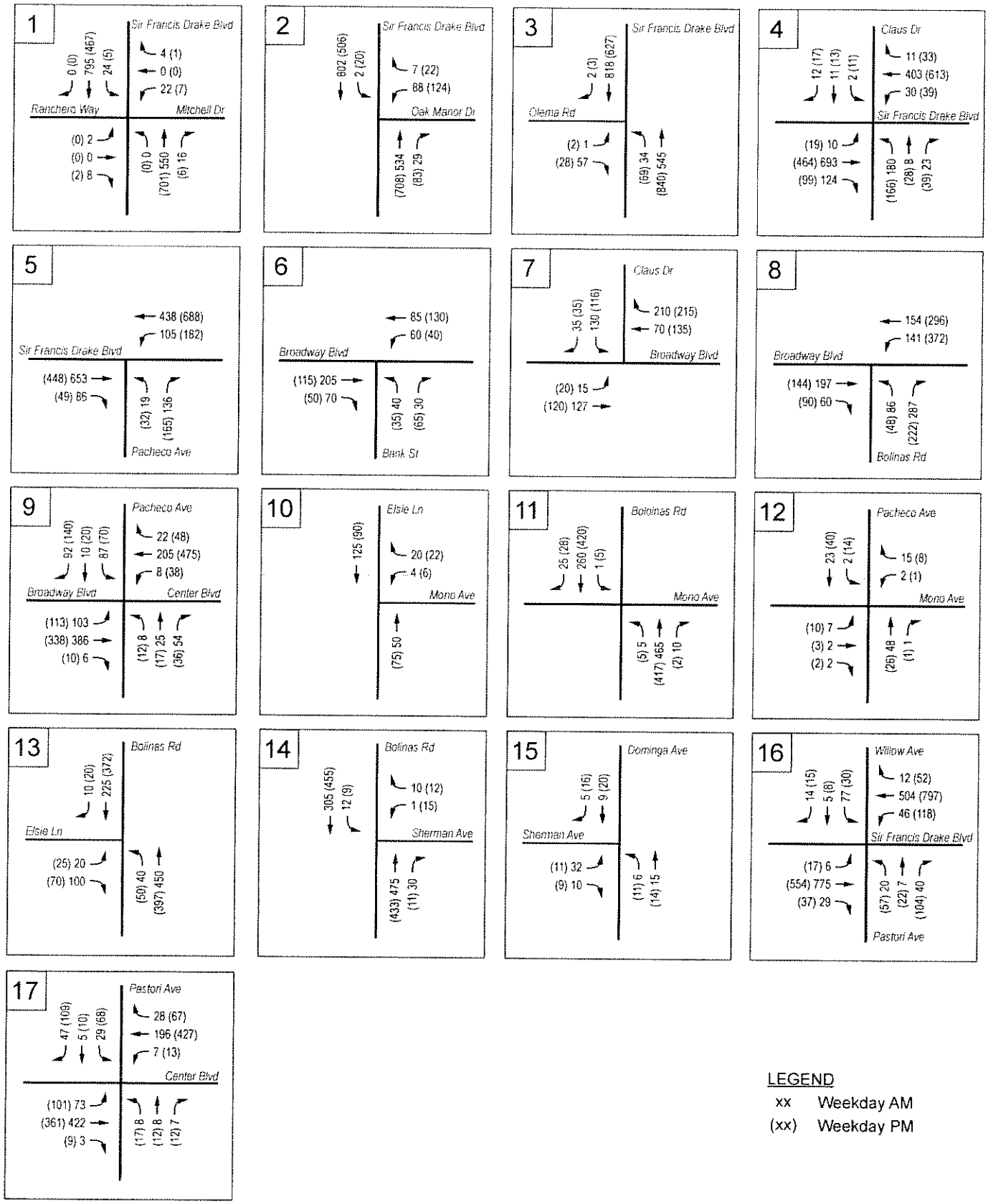



FIGURE 2

**Existing Peak Hour Traffic Volumes**

Parisi ASSOCIATES transportation consulting

24 January 2012

## Intersection Service Levels

The Town of Fairfax uses the 2000 Highway Capacity Manual (HCM) operational procedures for evaluating signalized and unsignalized intersection performance. The HCM analysis procedures provide estimates of saturation flow, capacity, delay, level of service, and back of vehicle queue by lane group for each approach.

HCM level of service is measured as a function of vehicle delay, with the corresponding ranges shown in Table 2. At signalized intersections and unsignalized intersections with all-way stop control, level of service is a measurement of the average overall delay of the intersection. For unsignalized intersections controlled with two or fewer stops, level of service is reported for the approach with the worst delay.

**Table 2. Intersection Level of Service and Delay**

| Level of Service | Level of Delay | Signalized Delay (seconds) | Unsignalized Delay (seconds) |
|---|---|---|---|
| A | Insignificant | 0 to 10 | 0 to 10 |
| B | Minimal | >10 to 20 | >10 to 15 |
| C | Acceptable | >20 to 35 | >15 to 25 |
| D | Tolerable | >35 to 55 | >25 to 35 |
| E | Significant | >55 to 80 | >35 to 50 |
| F | Excessive | >80 | >50 |

Source: Transportation Resource Board, Highway Capacity Manual, 2000

The Town considers level of service (LOS) D to be the minimum level of operation at both signalized and unsignalized intersections. Therefore, a signalized intersection that experiences 55 seconds or greater average delays, or an unsignalized intersection that experiences 35 seconds or greater average delays, would be required to mitigate unacceptable traffic impacts to an acceptable level of service. There are occasions, however, when the necessary improvements to mitigate the potential traffic impacts are not feasible to construct, such as an exceedingly high construction cost to improve a short duration impact, or an unduly delay for other traffic approaches.

The level of service for weekday AM and PM peak hours for existing conditions was calculated for the 17 study intersections. The findings are shown in Table 3. It was found that most intersections are operating at acceptable levels. Four intersections are operating unacceptably:

- Sir Francis Drake Boulevard/Mitchell Drive/Banchero Way: Left-turn movements from Mitchell Drive operate at LOS E during the AM peak hour (22 vehicles per hour (vph))
- Sir Francis Drake Boulevard/Olema Road: Left-turn movements from Olema Road operate at LOS E during the PM peak hour (2 vph)
- Sir Francis Drake Boulevard/Pacheco Avenue: Left-turn movements from Pacheco Avenue operate at LOS E in the AM peak hour (19 vph) and LOS F in the PM peak hour (32 vph)

- Broadway /Center Boulevard/Pacheco Avenue: Average vehicle delays for all movements are at LOS E during the PM peak hour

**Table 3. Intersection Level of Service and Delay for Existing and Existing + Opportunity Sites Conditions**

| No. | Street Name | Traffic Control | Time | Existing Delay | Existing LOS | Existing + Project Delay | Existing + Project LOS |
|---|---|---|---|---|---|---|---|
| 1 | Sir Francis Drake Boulevard | Two-Way Stop | AM | **46.1** | **E** | **117.2** | **F** |
| | Mitchell Drive/Banchero Way | | PM | 28.2 | D | 28.9 | D |
| 2 | Sir Francis Drake Boulevard | Signal | AM | 6.5 | A | 6.9 | A |
| | Oak Manor Drive | | PM | 9.2 | A | 9.2 | A |
| 3 | Sir Francis Drake Boulevard | One-Way Stop | AM | 33.6 | D | **40.1** | **E** |
| | Olema Road | | PM | **44.0** | **E** | **47.1** | **E** |
| 4 | Sir Francis Drake Boulevard | Signal | AM | 19.9 | B | 23.0 | C |
| | Claus Drive | | PM | 20.3 | C | 20.5 | C |
| 5 | Sir Francis Drake Boulevard | One-Way Stop | AM | **37.7** | **E** | **47.4** | **E** |
| | Pacheco Avenue | | PM | **68.0** | **F** | **75.5** | **F** |
| 6 | Broadway | Two-Way Stop | AM | 11.9 | B | 12.4 | B |
| | Bank Street | | PM | 10.5 | B | 10.3 | B |
| 7 | Broadway | Two-Way Stop | AM | 14.4 | B | 18.9 | C |
| | Claus Drive | | PM | 14.3 | B | 14.4 | B |
| 8 | Broadway | All-Way Stop | AM | 12.2 | B | 13.5 | B |
| | Bolinas Road | | PM | 15.4 | C | 15.6 | C |
| 9 | Broadway | All-Way Stop | AM | 14.4 | B | 16.1 | C |
| | Center Boulevard/Pacheco Avenue | | PM | **35.3** | **E** | **35.8** | **E** |
| 10 | Mono Avenue | One-Way Stop | AM | 8.8 | A | 8.9 | A |
| | Elsie Lane | | PM | 9.0 | A | 8.9 | A |
| 11 | Mono Avenue | No Stop | AM | 0.1 | A | 0.1 | A |
| | Bolinas Road | | PM | 0.2 | A | 0.2 | A |
| 12 | Mono Avenue | Two-Way Stop | AM | 9.1 | A | 9.2 | A |
| | Pacheco Avenue | | PM | 9.3 | A | 9.3 | A |
| 13 | Elsie Lane | One-Way Stop | AM | 12.1 | B | 12.4 | B |
| | Bolinas Road | | PM | 14.8 | B | 14.7 | B |
| 14 | Bolinas Road | One-Way Stop | AM | 12.2 | B | 12.4 | B |
| | Sherman Avenue | | PM | 16.0 | C | 16.0 | C |
| 15 | Sherman Avenue | All-Way Stop | AM | 7.2 | A | 7.2 | A |
| | Dominga Avenue | | PM | 7.0 | A | 7.0 | A |
| 16 | Sir Francis Drake Boulevard | Signal | AM | 23.4 | C | 31.7 | C |
| | Pastori Avenue | | PM | 24.1 | C | 27.8 | C |
| 17 | Center Boulevard | All-Way Stop | AM | 14.3 | B | 16.3 | C |
| | Pastori Avenue | | PM | 29.1 | D | 31.2 | D |

# OPPORTUNITY SITES CONDITIONS

## Opportunity Sites

The Town of Fairfax has identified six potential sites that could accommodate the Town's identified need for low-income or affordable housing units. In considering these sites, the Town determined the size, location, and current status of each site. The Town concluded that the ideal sites should have good access and infrastructure availability, be centrally located or along transit routes and promote the principals of transit-oriented development or traditional neighborhood design. In the evaluation of these sites, the Town determined that it would be necessary to rezone some sites in order to meet to meet its objectives.

The proposed six opportunity sites and/or areas, with locations shown in Figure 1, are described as follows:

- Site #1: Christ Lutheran Church Site: The Christ Lutheran Church and the Cascade Canyon School, a private school, currently occupy this large wooded lot. The proposed uses would retain the church, expand the school from 50 to 150 students, and construct 40 senior housing units.
- Site #2: 10 Olema Street: A former restaurant is being used as an artist's studio. A Victorian home, one of the oldest buildings in Fairfax, is also on the site and is currently divided into two units (one occupied). The site is proposed to have up to 22 workforce housing units and 1,650 square feet of commercial space.
- Site #3: Westside Commercial (13 total parcels): This area is small, with specialty retail centers that include office and commercial uses, a grocery store and a couple of residential units behind or over storefronts. The various parcels are proposed to redevelop with similar uses and 17 new second floor "efficiency" residential units; and/or ground floor two-story live/work units.
- Site #4: School Street Plaza: A former school site is being used by a variety of commercial uses within the old school buildings. A new private or public school for 300 students is proposed on the site along with nine new residential units. The current 18,196 square feet of commercial use would be removed (or relocated) if and when new school buildings and/or residential units are built. For conservative purposes, a new private school was assumed since private schools generate more traffic than public schools on a per student basis.
- Site #5: Fair-Anselm Shopping Center (eight total parcels): This area is a small, specialty retail center that includes office and commercial uses and a grocery store. Fifteen new residential units and an additional 4,000 square feet of commercial space are proposed for this site.
- Site #6: Eastside Commercial (21 total parcels): An eclectic mix of old homes, apartments, commercial and office uses. It exhibits the definition of a small, specialty retail center. The various parcels are proposed to redevelop with an additional 5,500 square feet of commercial space and 11 new residential units.

A total of 114 new residential units are proposed to be constructed in the six opportunity sites or areas, and 58 new (i.e., either newly constructed or "formalized") second units in the residential

zoned areas of Town. This addresses the 2005 (of 64 units) and 2010 (108) Regional Housing Needs Assessment (RHNA) allotment provided by ABAG and required in order to qualify for State certification of the 2010 Housing Element.

## Vehicle Trip Generation

This report evaluates the potential traffic impacts associated with the new land uses at the six opportunity sites. Vehicle trip generation rates from the Institute of Transportation Engineers' Trip Generation (8th Edition) were used to quantify the number of weekday AM and PM peak hour trips for each use. A summary of the trip rates used in this report is shown in Table 4.

**Table 4: ITE Trip Generation Rate Summary**

| Land Use | ITE | | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| Description | Code | Units | Rate | % In | % Out | Rate | % In | % Out |
| Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | 1.01 | 0.63 | 0.37 |
| Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | 0.62 | 0.65 | 0.35 |
| Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 0.78 | 0.58 | 0.42 |
| Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | 0.27 | 0.61 | 0.39 |
| Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | 0.09 | 0.47 | 0.53 |
| Church | 560 | SF | 0.56 | 0.62 | 0.38 | 0.55 | 0.48 | 0.52 |
| Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 5.02 | 0.56 | 0.44 |
| Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | 10.50 | 0.51 | 0.49 |

AM and PM trip generation was estimated for the six opportunity sites using existing and project conditions. A summary and comparison of the estimated trips for the AM peak period is shown in Table 5 and for the PM peak period in Table 6.

**Table 5: Summary of Estimated AM Trips for Existing and Opportunity Site Conditions**

| | | Existing Trips | | | Opp Sites Trips | | | Opp Sites Minus Existing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Site | Opportunity Site | In | Out | Total | In | Out | Total | In | Out | Total |
| 1 | Christ Lutheran Church | 25 | 20 | 45 | 79 | 68 | 147 | 54 | 48 | 102 |
| 2 | 10 Olema Street | 1 | 2 | 3 | 8 | 17 | 25 | 7 | 15 | 22 |
| 3 | Westside Commercial | 86 | 83 | 169 | 89 | 92 | 181 | 3 | 9 | 12 |
| 4 | School Street Plaza | 40 | 43 | 83 | 150 | 127 | 277 | 110 | 84 | 194 |
| 5 | Fair Anselm Shopping Center | 135 | 133 | 268 | 146 | 149 | 295 | 11 | 16 | 27 |
| 6 | Eastside Commercial | 54 | 63 | 117 | 67 | 80 | 147 | 13 | 17 | 30 |
| | **Totals** | **341** | **344** | **685** | **539** | **533** | **1,072** | **198** | **189** | **387** |

**Table 6: Summary of Estimated PM Trips for Existing and Opportunity Site Conditions**

| | | Existing Trips | | | Opp Sites Trips | | | Opp Sites - Existing | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Site | Opportunity Site | In | Out | Total | In | Out | Total | In | Out | Total |
| 1 | Christ Lutheran Church | 3 | 4 | 7 | 14 | 13 | 27 | 11 | 9 | 20 |
| 2 | 10 Olema Street | 2 | 1 | 3 | 15 | 11 | 26 | 13 | 10 | 22 |
| 3 | Westside Commercial | 114 | 100 | 214 | 121 | 105 | 226 | 7 | 5 | 12 |
| 4 | School Street Plaza | 34 | 27 | 61 | 17 | 18 | 35 | -17 | -9 | -26 |
| 5 | Fair Anselm Shopping Center | 165 | 142 | 307 | 179 | 153 | 332 | 14 | 11 | 25 |
| 6 | Eastside Commercial | 51 | 39 | 90 | 66 | 49 | 115 | 15 | 10 | 25 |
| | **Totals** | **369** | **313** | **682** | **412** | **349** | **761** | **43** | **36** | **79** |

During the AM peak hour, the six opportunity sites would account for a net increase of about 387 vehicle trips. About 76 percent of those trips would be attributed to the sites with the two proposed private schools. The School Street Plaza site would generate about 194 new trips and the Christ Lutheran Church site would generate about 102 new trips. The remaining 82 trips would be distributed among retail, office and residential uses at the other four opportunity sites.

A net increase of 79 vehicle trips is estimated during the PM peak hour. There would be considerable fewer net trips during this period because schools have a low PM peak hour trip rate. The redeveloped School Street Plaza site is estimated to have 26 fewer trips than the existing conditions because the proposed private school on the site would have a lower vehicle trip generation rate than the existing commercial uses it would replace.

# EXISTING PLUS OPPORTUNITY SITES CONDITIONS

## Intersection Service Levels

The vehicle trips estimated to be associated with the opportunity sites were distributed to the street network based on existing travel patterns. Traffic volumes for existing plus opportunity sites condition are shown in Figure 3.

The level of service for weekday AM and PM peak hours for the existing plus opportunity sites condition was calculated for the 17 study intersections. The results are shown in Table 3.

The resulting traffic operations for the existing plus opportunity sites scenario would be similar to those under existing conditions for most of the study intersections. Each of the four intersections that currently operate at LOS E or F would continue to operate unacceptably. However, left-turning movements from Mitchell Drive onto Sir Francis Drake Boulevard would degrade from LOS E to LOS F conditions during the AM peak hour. The left-turning volume would increase from 22 vehicles per hour to about 61 vehicles per hour. At Sir Francis Drake Boulevard and Olema Road, the PM peak hour left-turning movements would degrade from LOS D to LOS E conditions. The number of left-turns would increase from two to four vehicles per hour.

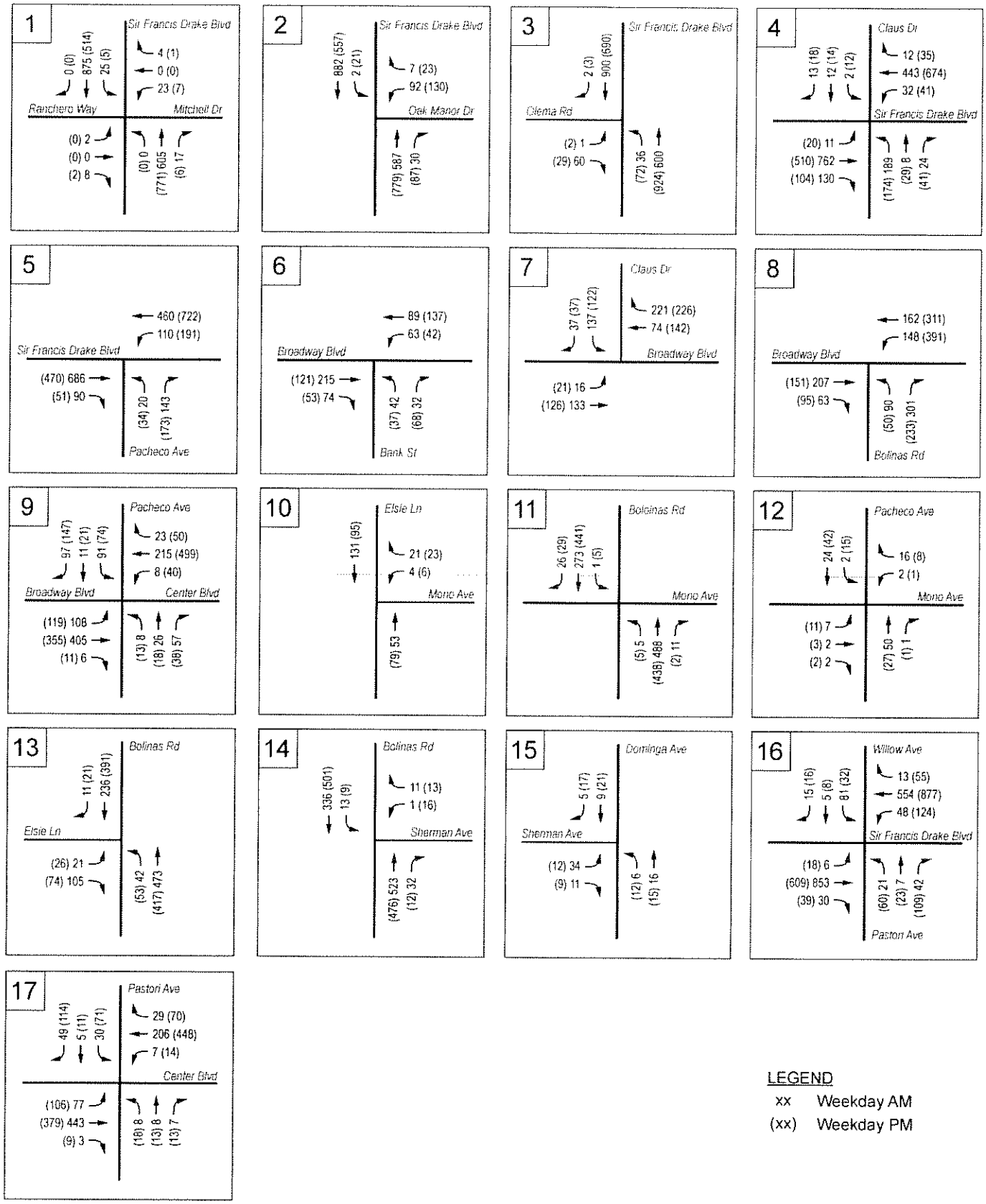



FIGURE 3

**Year 2030 Peak Hour Traffic Volumes**

Parisi ASSOCIATES transportation consulting

24 January 2012

# YEAR 2030 CONDITIONS

## Year 2030 Traffic Volumes

Local and regional growth may result in an increase in traffic volumes at all intersections by the year 2030. For purposes of the report, it was assumed that traffic would increase on Sir Francis Drake Boulevard at a rate of one-half of one-percent per year, or about ten percent by 2030. Traffic levels on all other streets were assumed to increase at a rate of one-quarter of one-percent per year, or about five percent until year 2030.

These increases are lower than increases forecasted by the Marin County of Public Works regional travel demand model of one percent per year on Sir Francis Drake Boulevard. A lower increase in travel volumes was assumed for this report because current traffic volumes have generally decreased, as evidenced in recent studies, due to the regionally economic situation and because the area is generally already built out. As for the other streets in Fairfax, increases in traffic volumes would be expected to be lower because of built-out conditions except for the potential redevelopment of the opportunity sites.

## Intersection Service Levels

Projected traffic volumes for year 2030 conditions are shown in Figure 4. Level of service for weekday AM and PM peak hours for year 2030 conditions was calculated for the 17 study intersections. The results are shown in Table 7.

By 2030, the same four intersections that currently operate at LOS E or F conditions are expected to continue operating unacceptably (Sir Francis Drake Boulevard at Mitchell Drive/Banchero Way, at Olema Road, and at Pacheco Boulevard; and Broadway at Center Boulevard/Pacheco Avenue). By 2030, one additional intersection would operate unacceptably. The Center Boulevard/Pastori Avenue intersection would operate at LOS E conditions during the PM peak hour. It currently operates at LOS D during this period.

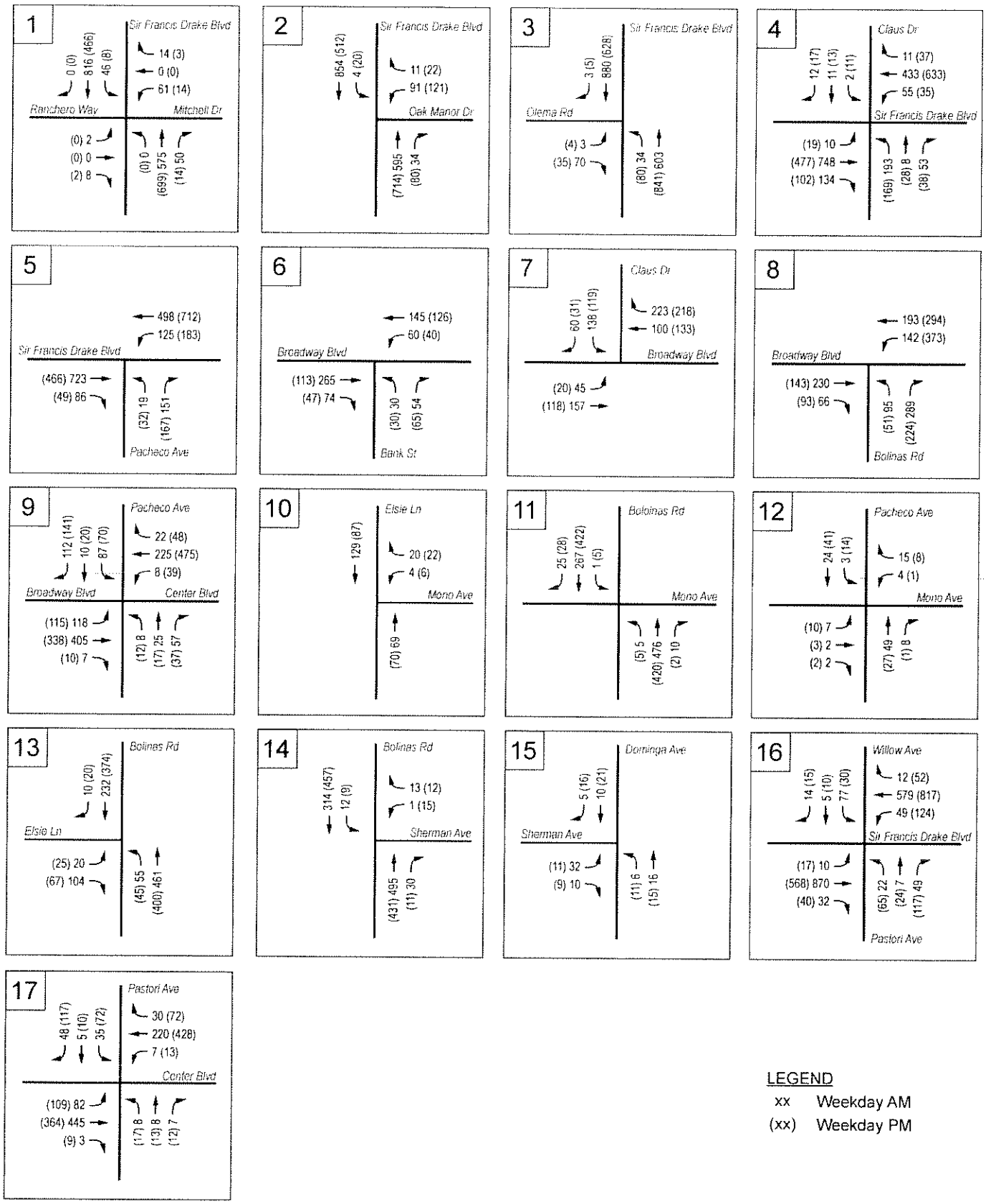
# YEAR 2030 PLUS OPPORTUNITY SITES CONDITIONS

## Intersection Service Levels

The vehicle trips estimated to be generated from the opportunity sites were distributed on the street network based on existing travel patterns. Traffic volumes for existing plus opportunity sites conditions are shown in Figure 5.

The level of service for weekday AM and PM peak hour for existing plus opportunity sites conditions was calculated for the 17 study intersections. The results are shown in Table 7.

The resulting traffic operations for the year 2030 plus opportunity site scenario would be similar to those under year 2030 conditions for most of the study intersections. Each of the five intersections that would be expected to operate at LOS or F in 2030 would continue to operate unacceptably with the opportunity sites redeveloped. However, left-turning movements from Mitchell Drive onto Sir Francis Drake Boulevard would degrade from LOS E to LOS F conditions during the AM peak hour. The left-turning volume would increase from 23 vehicles per hour to about 62 vehicles per hour. At Sir Francis Drake Boulevard and Pacheco Avenue,




LEGEND

xx Weekday AM

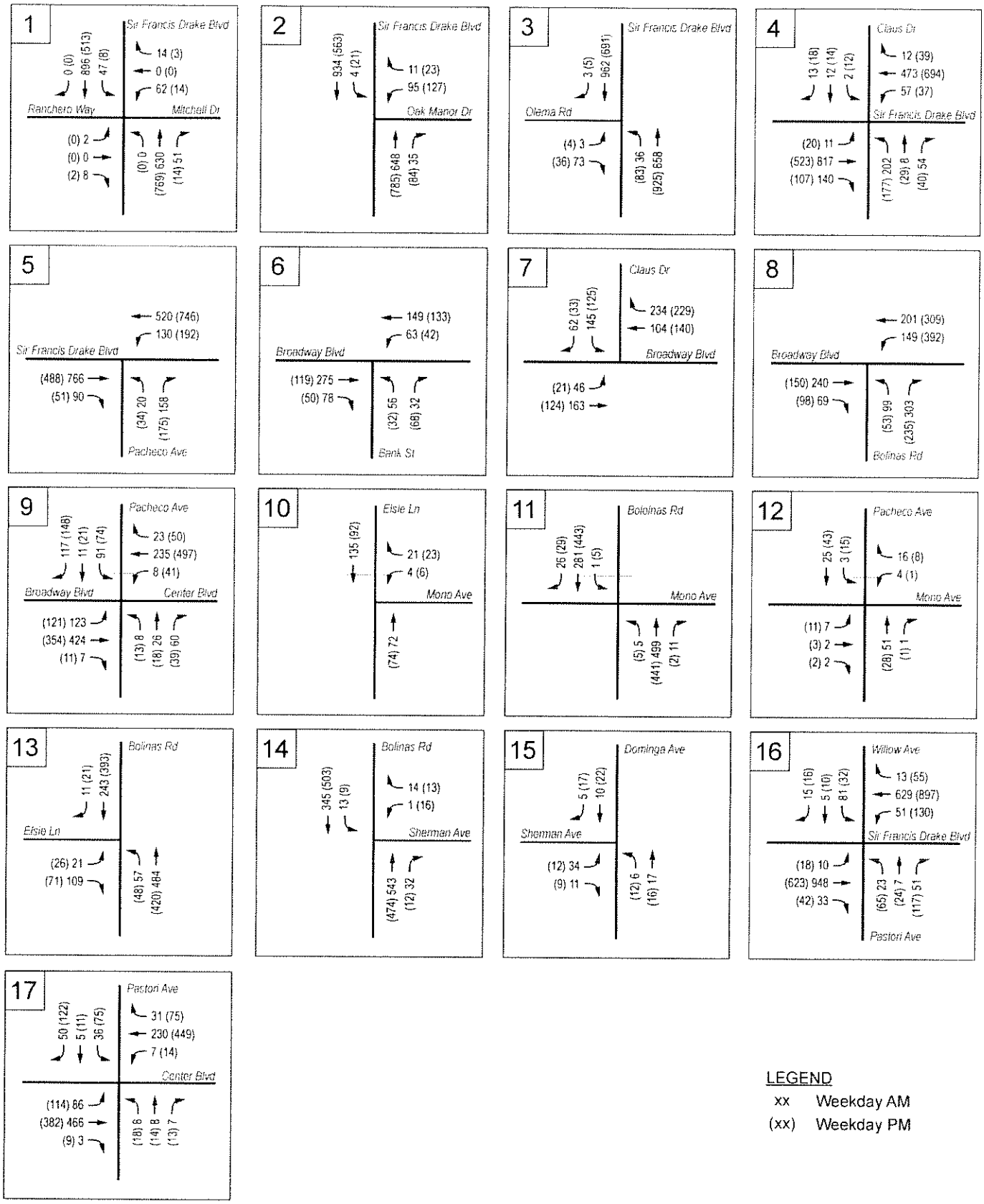
(xx) Weekday PM

FIGURE 4

**Existing + Opportunity Sites Peak Hour Traffic Volumes**

Parisi ASSOCIATES transportation consulting

24 January 2012




LEGEND

xx Weekday AM

(xx) Weekday PM

FIGURE 5

**Year 2030 + Opportunity Sites Peak Hour Traffic Volumes**

Parisi ASSOCIATES transportation consulting

24 January 2012

the AM peak hour left-turning movements from Pacheco Avenue would degrade from LOS E to LOS F conditions.

**Table 7. Intersection Level of Service and Delay for Year 2030 and Year 2030 + Opportunity Site Conditions**

| No. | Street Name | Traffic Control | Time | 2030 Delay | 2030 LOS | 2030 + Opp Sites Delay | 2030 + Opp Sites LOS |
|---|---|---|---|---|---|---|---|
| 1 | Sir Francis Drake Boulevard | Two-Way Stop | AM | **62.3** | **E** | **199.1** | **F** |
| | Mitchell Drive/Banchero Way | | PM | 33.5 | D | 34.7 | D |
| 2 | Sir Francis Drake Boulevard | Signal | AM | 6.9 | A | 7.5 | A |
| | Oak Manor Drive | | PM | 10.4 | B | 10.4 | B |
| 3 | Sir Francis Drake Boulevard | One-Way Stop | AM | **40.6** | **E** | **49.0** | **E** |
| | Olema Road | | PM | **54.8** | **F** | **59.2** | **F** |
| 4 | Sir Francis Drake Boulevard | Signal | AM | 21.6 | C | 25.3 | C |
| | Claus Drive | | PM | 21.6 | C | 21.8 | C |
| 5 | Sir Francis Drake Boulevard | One-Way Stop | AM | **39.3** | **E** | **55.5** | **F** |
| | Pacheco Avenue | | PM | **73.4** | **F** | **81.5** | **F** |
| 6 | Broadway | Two-Way Stop | AM | 12.1 | B | 14.2 | B |
| | Bank Street | | PM | 10.7 | B | 10.5 | B |
| 7 | Broadway | Two-Way Stop | AM | 15.0 | C | 20.3 | C |
| | Claus Drive | | PM | 14.9 | B | 15.0 | B |
| 8 | Broadway | All-Way Stop | AM | 13.0 | B | 14.4 | B |
| | Bolinas Road | | PM | 17.0 | C | 17.2 | C |
| 9 | Broadway | All-Way Stop | AM | 15.7 | C | 18.0 | C |
| | Center Boulevard/Pachco Avenue | | PM | **42.6** | **E** | **43.9** | **E** |
| 10 | Mono Avenue | One-Way Stop | AM | 8.8 | A | 8.9 | A |
| | Elsie Lane | | PM | 9.0 | A | 9.0 | A |
| 11 | Mono Avenue | No Stop | AM | 0.1 | A | 0.1 | A |
| | Bolinas Road | | PM | 0.2 | A | 0.2 | A |
| 12 | Mono Avenue | Two-Way Stop | AM | 9.2 | A | 9.2 | A |
| | Pacheco Avenue | | PM | 9.3 | A | 9.3 | A |
| 13 | Elsie Lane | One-Way Stop | AM | 12.4 | B | 12.8 | B |
| | Bolinas Road | | PM | 15.5 | C | 15.5 | C |
| 14 | Bolinas Road | One-Way Stop | AM | 12.8 | B | 13.0 | B |
| | Sherman Avenue | | PM | 17.6 | C | 17.6 | C |
| 15 | Sherman Avenue | All-Way Stop | AM | 7.2 | A | 7.2 | A |
| | Dominga Avenue | | PM | 7.0 | A | 7.1 | A |
| 16 | Sir Francis Drake Boulevard | Signal | AM | 29.8 | C | 45.0 | D |
| | Pastori Avenue | | PM | 33.2 | C | 36.0 | D |
| 17 | Center Boulevard | All-Way Stop | AM | 15.6 | C | 18.1 | C |
| | Pastori Avenue | | PM | **35.9** | **E** | **41.1** | **E** |

## RECOMMENDATIONS

The Town of Fairfax considers LOS D to be the minimum level of operation at both signalized and unsignalized intersections. Redevelopment of the opportunity sites would not result in any of the 17 study intersections degrading from LOS D or better conditions to LOS E or LOS F conditions based on current traffic levels or those expected in year 2030. Four intersections would be expected to continue operating at LOS E or LOS F conditions with or without the redevelopment of the opportunity sites. A fifth intersection, Sir Francis Drake Boulevard/Mitchell Drive/Banchero Way, would have its stop sign-controlled left-turn degrade from LOS E to LOS F conditions during a peak period.

- Sir Francis Drake Boulevard/Mitchell Drive/Banchero Way: Stop sign-controlled left-turns from Mitchell Drive currently operate at LOS E conditions during the AM peak hour. LOS E is expected to continue to result in the year 2030 without redevelopment. Redevelopment of the Christ Lutheran Church site would degrade the left-turns to LOS F conditions and result in significant left-turn delays of two to three minutes. Traffic signalization of this intersection should be considered.
- Sir Francis Drake Boulevard/Olema Road: LOS E or F conditions would continue for left-turns turning from Olema Road with or without redevelopment of the opportunity sites. Fewer than five vehicles per peak hour are expected to continue turning left, experiencing delays of 60 seconds or less. This small volume, in comparison to the uncontrolled traffic movements at this intersection, plus the availability of alternative means to access northbound Sir Francis Drake Boulevard, do not justify mitigating the LOS E/F conditions.
- Sir Francis Drake Boulevard/Pacheco Avenue: LOS E or F conditions would continue for left-turns turning from Pacheco Avenue with or without redevelopment of the opportunity sites. Fewer than 35 vehicles per peak hour are expected to continue turning left, experiencing delays of 80 seconds or less. This volume, in comparison to the uncontrolled traffic movements at this intersection, plus the availability of alternative means to access northbound Sir Francis Drake Boulevard, do not justify mitigating the LOS E/F conditions.
- Broadway /Center Boulevard/Pacheco Avenue: The average delay for all movements at this all-way stop sign-controlled intersection is expected to equate to LOS E conditions during the PM peak period considering existing and year 2030 traffic volumes, with or without redevelopment of the opportunity sites. Installing a modern roundabout could be considered, if feasible, to mitigate these conditions. Provision of a traffic signal could exacerbate vehicle queuing through Pacheco Avenue's intersection with Sir Francis Drake Boulevard.
- Center Boulevard/Pastori Avenue: By the year 2030, with or without redevelopment of the opportunity sites, this intersection is expected to operate at LOS E during the PM peak hour. Installation of a modern roundabout could be considered in the future.

## APPENDIX

This appendix includes:

- Existing AM Peak Hour Trip Generation
- Estimated New AM Peak Hour Trip Generation
- Estimated Resulting AM Peak Hour Traffic Volumes
- Existing PM Peak Hour Trip Generation
- Estimated New PM Peak Hour Trip Generation
- Estimated Resulting PM Peak Hour Traffic Volumes

# EXISTING AM PEAK HOUR TRIP GENERATION

Site 1: Christ Lutheran Church

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | 47 | 42 | | 0 | 42 | 23 | 19 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | 5.063 | 3 | | 0 | 3 | 2 | 1 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 45 | 25 | 20 |

Site 2: 10 Olema Street

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 4 | 3 | | 0 | 3 | 1 | 2 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 3 | 1 | 2 |

Site 3: Westside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 3 | 2 | | 0 | 2 | 1 | 2 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 28.075 | 192 | 0.34 | 65 | 127 | 61 | 66 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | 17.6 | 63 | 0.36 | 23 | 40 | 25 | 16 |
| | | | | | | | | | | | 169 | 86 | 83 |

Site 4: School Street Plaza

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 1 | 1 | | 0 | 1 | 0 | 1 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 18.196 | 124 | 0.34 | 42 | 82 | 39 | 43 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 83 | 40 | 43 |

Site 5: Fair Anselm

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 48.047 | 329 | 0.34 | 112 | 217 | 104 | 113 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | 27 | 79 | 0.36 | 28 | 51 | 31 | 20 |
| | | | | | | | | | | | 267 | 135 | 133 |

Site 6: Eastside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | 5 | 4 | | 0 | 4 | 1 | 3 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | 9 | 5 | | 0 | 5 | 1 | 4 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 24.012 | 164 | 0.34 | 56 | 108 | 52 | 56 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 117 | 54 | 63 |

# ESTIMATED NEW AM PEAK HOUR TRIP GENERATION

Site 1: Christ Lutheran Church

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | 40 | 9 | | 0 | 9 | 3 | 6 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | 150 | 135 | | 0 | 135 | 74 | 61 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | 5 | 3 | | 0 | 3 | 2 | 1 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 147 | 79 | 68 |

Site 2: 10 Olema Street

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 26 | 17 | | 0 | 17 | 4 | 13 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 1.65 | 11 | 0.34 | 4 | 7 | 4 | 4 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 25 | 8 | 17 |

Site 3: Westside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 20 | 13 | | 0 | 13 | 3 | 10 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 28.075 | 192 | 0.34 | 65 | 127 | 61 | 66 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | 17.6 | 63 | 0.36 | 23 | 40 | 25 | 16 |
| | | | | | | | | | | | 181 | 89 | 92 |

Site 4: School Street Plaza

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 10 | 7 | | 0 | 7 | 2 | 5 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | 300 | 270 | | 0 | 270 | 149 | 122 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 277 | 150 | 127 |

Site 5: Fair Anselm

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | 15 | 10 | | 0 | 10 | 3 | 8 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 52.047 | 356 | 0.34 | 121 | 235 | 113 | 122 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | 27 | 79 | 0.36 | 28 | 51 | 31 | 20 |
| | | | | | | | | | | | 296 | 146 | 149 |

Site 6: Eastside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 0.75 | 0.25 | 0.75 | 5 | 4 | | 0 | 4 | 1 | 3 |
| 2 | Apartments | 220 | DU | 0.51 | 0.20 | 0.80 | 20 | 10 | | 0 | 10 | 2 | 8 |
| 3 | Condominiums | 231 | DU | 0.67 | 0.25 | 0.75 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.22 | 0.35 | 0.65 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.45 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.90 | 0.55 | 0.45 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.56 | 0.62 | 0.38 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.26 | 0.53 | 0.47 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.55 | 0.88 | 0.12 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 6.84 | 0.48 | 0.52 | 29.512 | 202 | 0.34 | 69 | 133 | 64 | 69 |
| 11 | Shopping Center | 820 | SF | 1.00 | 0.61 | 0.39 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 3.59 | 0.61 | 0.39 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 147 | 67 | 80 |

# ESTIMATED RESULTING AM PEAK HOUR TRAFFIC VOLUMES

1 Sir Francis Drake Boulevard/Claus Drive

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Projects |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 12 | | 12 | 1.05 | 13 | | | | | | | 0 | 12 | 13 |
| | T | 11 | | 11 | 1.05 | 12 | | | | | | | 0 | 11 | 12 |
| | L | 2 | | 2 | 1.05 | 2 | | | | | | | 0 | 2 | 2 |
| WB | R | 11 | | 11 | 1.05 | 12 | | | | | | | 0 | 11 | 12 |
| | T | 403 | | 403 | 1.10 | 443 | 20 | 4 | 4 | | | 2 | 30 | 433 | 473 |
| | L | 30 | | 30 | 1.05 | 32 | | | | 25 | | | 25 | 55 | 57 |
| NB | R | 23 | | 23 | 1.05 | 24 | | | | 30 | | | 30 | 53 | 54 |
| | T | 8 | | 8 | 1.05 | 8 | | | | | | | 0 | 8 | 8 |
| | L | 180 | | 180 | 1.05 | 189 | 10 | 1 | 2 | | | | 13 | 193 | 202 |
| EB | R | 124 | | 124 | 1.05 | 130 | 5 | 2 | 3 | | | | 10 | 134 | 140 |
| | T | 693 | | 693 | 1.10 | 762 | 32 | 11 | 9 | | | 3 | 55 | 748 | 817 |
| | L | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | | | | | | | 67 | 18 | 18 | 55 | 0 | 5 | | | |

2 Broadway Boulevard/Claus Drive

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 35 | | 35 | 1.05 | 37 | | | | 25 | | | 25 | 60 | 62 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 130 | | 130 | 1.05 | 137 | 3 | 2 | 3 | | | | 8 | 138 | 145 |
| WB | R | 210 | | 210 | 1.05 | 221 | 10 | 1 | 2 | | | | 13 | 223 | 234 |
| | T | 70 | | 70 | 1.05 | 74 | | | | 30 | | | 30 | 100 | 104 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 127 | | 127 | 1.05 | 133 | | | | 30 | | | 30 | 157 | 163 |
| | L | 15 | | 15 | 1.05 | 16 | | | | 30 | | | 30 | 45 | 46 |
| | | | | | | | 13 | 3 | 5 | 115 | 0 | 0 | | | |

3 Sherman Avenue/Dominga Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 5 | | 5 | 1.05 | 5 | | | | | | | 0 | 5 | 5 |
| | T | 9 | | 9 | 1.05 | 9 | | | 1 | | | | 1 | 10 | 10 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 15 | | 15 | 1.05 | 16 | | | | | | 1 | 1 | 16 | 17 |
| | L | 6 | | 6 | 1.05 | 6 | | | | | | | 0 | 6 | 6 |
| EB | R | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 32 | | 32 | 1.05 | 34 | | | | | | | 0 | 32 | 34 |
| | | | | | | | 0 | 0 | 1 | 0 | 0 | 1 | | | |

4 Broadway Boulevard/Center Boulevard/Pacheco Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 92 | | 92 | 1.05 | 97 | | | | 20 | | | 20 | 112 | 117 |
| | T | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | L | 87 | | 87 | 1.05 | 91 | | | | | | | 0 | 87 | 91 |
| WB | R | 22 | | 22 | 1.05 | 23 | | | | | | | 0 | 22 | 23 |
| | T | 205 | | 205 | 1.05 | 215 | 4 | | | 15 | 1 | | 20 | 225 | 235 |
| | L | 8 | | 8 | 1.05 | 8 | | | | | | | 0 | 8 | 8 |
| NB | R | 54 | | 54 | 1.05 | 57 | | | | | 2 | 1 | 3 | 57 | 60 |
| | T | 25 | | 25 | 1.05 | 26 | | | | | | | 0 | 25 | 26 |
| | L | 8 | | 8 | 1.05 | 8 | | | | | | | 0 | 8 | 8 |
| EB | R | 6 | | 6 | 1.05 | 6 | | | 1 | | | | 1 | 7 | 7 |
| | T | 386 | | 386 | 1.05 | 405 | 2 | | | 15 | 1 | 1 | 19 | 405 | 424 |
| | L | 103 | | 103 | 1.05 | 108 | | | | 15 | | | 15 | 118 | 123 |
| | | | | | | | 6 | 0 | 1 | 65 | 4 | 2 | | | |

5 Broadway Boulevard/Bank Street

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 85 | | 85 | 1.05 | 89 | | | | 60 | | | 60 | 145 | 149 |
| | L | 60 | | 60 | 1.05 | 63 | | | | | | | 0 | 60 | 63 |
| NB | R | 30 | | 30 | 1.05 | 32 | | | | | | | 0 | 30 | 32 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 40 | | 40 | 1.05 | 42 | | | | 14 | | | 14 | 54 | 56 |
| EB | R | 70 | | 70 | 1.05 | 74 | | | | 4 | | | 4 | 74 | 78 |
| | T | 205 | | 205 | 1.05 | 215 | | | | 60 | | | 60 | 265 | 275 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 0 | 0 | 0 | 138 | 0 | 0 | | | |

6 Broadway Boulevard/Bolinas Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 154 | | 154 | 1.05 | 162 | 4 | | | 35 | | | 39 | 193 | 201 |
| | L | 141 | | 141 | 1.05 | 148 | | | | | 1 | | 1 | 142 | 149 |
| NB | R | 287 | | 287 | 1.05 | 301 | | | | | 1 | 1 | 2 | 289 | 303 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 86 | | 86 | 1.05 | 90 | 6 | 1 | 2 | | | | 9 | 95 | 99 |
| EB | R | 60 | | 60 | 1.05 | 63 | 3 | 1 | 2 | | | | 6 | 66 | 69 |
| | T | 197 | | 197 | 1.05 | 207 | 2 | | 1 | 30 | | | 33 | 230 | 240 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 15 | 2 | 5 | 65 | 2 | 1 | | | |

7n

| Bolinas Avenue/Mono Lane (N) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 260 | | 260 | 1.05 | 273 | 3 | 3 | 2 | | 1 | | 7 | 267 | 280 |
| | L | 1 | | 1 | 1.05 | 1 | | | | | | | 0 | 1 | 1 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | T | 455 | | 455 | 1.05 | 478 | 6 | 1 | 2 | | 1 | 1 | 11 | 466 | 489 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 9 | 2 | 4 | 0 | 2 | 1 | | | |

7s

| Bolinas Avenue/Mono Lane (S) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 25 | | 25 | 1.05 | 26 | | | | | | | 0 | 25 | 26 |
| | T | 235 | | 235 | 1.05 | 247 | 3 | 1 | 2 | | 1 | | 7 | 242 | 254 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 465 | | 465 | 1.05 | 488 | 6 | 1 | 2 | | 1 | 1 | 11 | 476 | 499 |
| | L | 5 | | 5 | 1.05 | 5 | | | | | | | 0 | 5 | 5 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 9 | 2 | 4 | 0 | 2 | 1 | | | |

8

| Mono Avenue/Pacheco Avenue | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 23 | | 23 | 1.05 | 24 | | | | | 1 | | 1 | 24 | 25 |
| | L | 2 | | 2 | 1.05 | 2 | | | 1 | | | | 1 | 3 | 3 |
| WB | R | 15 | | 15 | 1.05 | 16 | | | | | | | 0 | 15 | 16 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 2 | | 2 | 1.05 | 2 | | | | | 2 | | 2 | 4 | 4 |
| NB | R | 1 | | 1 | 1.05 | 1 | | | | | | | 0 | 1 | 1 |
| | T | 48 | | 48 | 1.05 | 50 | | | | | | 1 | 1 | 49 | 51 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | 2 | | 2 | 1.05 | 2 | | | | | | | 0 | 2 | 2 |
| | T | 2 | | 2 | 1.05 | 2 | | | | | | | 0 | 2 | 2 |
| | L | 7 | | 7 | 1.05 | 7 | | | | | | | 0 | 7 | 7 |
| | | | | | | | 0 | 0 | 1 | 0 | 3 | 1 | | | |

9

| Elsie Lane/Bolinas Road | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2035 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | T | 225 | | 225 | 1.05 | 236 | 3 | 1 | 2 | | 1 | | 7 | 232 | 243 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 450 | | 450 | 1.05 | 473 | 6 | 1 | 2 | | 1 | 1 | 11 | 461 | 484 |
| | L | 40 | | 40 | 1.05 | 42 | | | | 15 | | | 15 | 55 | 57 |
| EB | R | 100 | | 100 | 1.05 | 105 | | | | 4 | | | 4 | 104 | 109 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 20 | | 20 | 1.05 | 21 | | | | | | | 0 | 20 | 21 |
| | | | | | | | 9 | 2 | 4 | 19 | 2 | 1 | | | |

10

| Sir Francis Drake Boulevard/Pacheco Avenue | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 438 | | 438 | 1.05 | 460 | 20 | 4 | 8 | 25 | | 3 | 60 | 498 | 520 |
| | L | 105 | | 105 | 1.05 | 110 | | | | 20 | | | 20 | 125 | 130 |
| NB | R | 136 | | 136 | 1.05 | 143 | | | | 15 | | | 15 | 151 | 158 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 19 | | 19 | 1.05 | 20 | | | | | | | 0 | 19 | 20 |
| EB | R | 86 | | 86 | 1.05 | 90 | | | | | | | 0 | 86 | 90 |
| | T | 653 | | 653 | 1.05 | 686 | 32 | 11 | 4 | 30 | | 3 | 80 | 733 | 766 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 52 | 15 | 12 | 90 | 0 | 6 | | | |

11

| Mono Avenue/Elsie Street | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 125 | | 125 | 1.05 | 131 | | | | 4 | | | 4 | 129 | 135 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | 20 | | 20 | 1.05 | 21 | | | | | | | 0 | 20 | 21 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 4 | | 4 | 1.05 | 4 | | | | | | | 0 | 4 | 4 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 50 | | 50 | 1.05 | 53 | | | | 19 | | | 19 | 69 | 72 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 0 | 0 | 0 | 23 | 0 | 0 | | | |

12

| Bolinas Road/Sherman Avenue | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 305 | | 305 | 1.10 | 336 | 3 | 1 | | 4 | 1 | | 9 | 314 | 345 |
| | L | 12 | | 12 | 1.05 | 13 | | | | | | | 0 | 12 | 13 |
| WB | R | 10 | | 10 | 1.05 | 11 | | | | 3 | | | 3 | 13 | 14 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 1 | | 1 | 1.05 | 1 | | | | | | | 0 | 1 | 1 |
| NB | R | 30 | | 30 | 1.05 | 32 | | | | | | | 0 | 30 | 32 |
| | T | 475 | | 475 | 1.10 | 523 | 6 | 1 | | 12 | 1 | | 20 | 495 | 543 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 9 | 2 | 0 | 19 | 2 | 0 | | | |

13 Sir Francis Drake Boulevard/Pastori Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 14 | | 14 | 1.05 | 15 | | | | | | | 0 | 14 | 15 |
| | T | 5 | | 5 | 1.05 | 5 | | | | | | | 0 | 5 | 5 |
| | L | 77 | | 77 | 1.05 | 81 | | | | | | | 0 | 77 | 81 |
| WB | R | 12 | | 12 | 1.05 | 13 | | | | | | | 0 | 12 | 13 |
| | T | 504 | | 504 | 1.10 | 554 | 20 | 4 | 3 | 45 | | 3 | 75 | 579 | 629 |
| | L | 46 | | 46 | 1.05 | 48 | | | | | 3 | | 3 | 49 | 51 |
| NB | R | 40 | | 40 | 1.05 | 42 | | | | | 7 | 2 | 9 | 49 | 51 |
| | T | 7 | | 7 | 1.05 | 7 | | | | | | | 0 | 7 | 7 |
| | L | 20 | | 20 | 1.05 | 21 | | | | | | 2 | 2 | 22 | 23 |
| EB | R | 29 | | 29 | 1.05 | 30 | 1 | | 2 | | | | 3 | 32 | 33 |
| | T | 775 | | 775 | 1.10 | 853 | 32 | 10 | 8 | 43 | | 2 | 95 | 870 | 948 |
| | L | 6 | | 6 | 1.05 | 6 | | | | | | 4 | 4 | 10 | 10 |
| | | | | | | | 53 | 14 | 13 | 88 | 10 | 13 | | | |

14 Center Boulevard/Pastori Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 47 | | 47 | 1.05 | 49 | | 1 | | | | | 1 | 48 | 50 |
| | T | 5 | | 5 | 1.05 | 5 | | | | | | | 0 | 5 | 5 |
| | L | 29 | | 29 | 1.05 | 30 | | | 7 | | | 4 | 6 | 35 | 36 |
| WB | R | 28 | | 28 | 1.05 | 29 | | | | | | 2 | 2 | 30 | 31 |
| | T | 196 | | 196 | 1.05 | 206 | 4 | | | 15 | 5 | | 24 | 220 | 230 |
| | L | 7 | | 7 | 1.05 | 7 | | | | | | | 0 | 7 | 7 |
| NB | R | 7 | | 7 | 1.05 | 7 | | | | | | | 0 | 7 | 7 |
| | T | 8 | | 8 | 1.05 | 8 | | | | | | | 0 | 8 | 8 |
| | L | 8 | | 8 | 1.05 | 8 | | | | | | | 0 | 8 | 8 |
| EB | R | 3 | | 3 | 1.05 | 3 | | | | | | | 0 | 3 | 3 |
| | T | 422 | | 422 | 1.05 | 443 | 2 | | | 15 | 6 | | 23 | 445 | 466 |
| | L | 73 | | 73 | 1.05 | 77 | | | | | 7 | 2 | 9 | 82 | 86 |
| | | | | | | | 6 | 1 | 2 | 30 | 18 | 8 | | | |

15 Sir Francis Drake Boulevard/Olema Road

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 2 | | 2 | 1.05 | 2 | | 1 | | | | | 1 | 3 | 3 |
| | T | 818 | | 818 | 1.10 | 900 | 37 | | 4 | 18 | | 3 | 62 | 880 | 962 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 545 | | 545 | 1.10 | 600 | 30 | | 8 | 18 | | 2 | 58 | 603 | 658 |
| | L | 34 | | 34 | 1.05 | 36 | | | | | | | 0 | 34 | 36 |
| EB | R | 57 | | 57 | 1.05 | 60 | | 13 | | | | | 13 | 70 | 73 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 1 | | 1 | 1.05 | 1 | | 2 | | | | | 2 | 3 | 3 |
| | | | | | | | 67 | 16 | 12 | 36 | 0 | 5 | | | |

16 Sir Francis Drake Boulevard/Oak Manor Drive

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 802 | | 802 | 1.10 | 882 | 30 | 2 | 7 | 15 | | 3 | 52 | 854 | 934 |
| | L | 2 | | 2 | 1.05 | 2 | 2 | | | | | | 2 | 4 | 4 |
| WB | R | 7 | | 7 | 1.05 | 7 | 4 | | | | | | 4 | 11 | 11 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 88 | | 88 | 1.05 | 92 | | | | 3 | | | 3 | 91 | 95 |
| NB | R | 29 | | 29 | 1.05 | 30 | | | 2 | 3 | | | 5 | 34 | 35 |
| | T | 534 | | 534 | 1.10 | 587 | 37 | 1 | 6 | 15 | | 2 | 61 | 595 | 648 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 73 | 3 | 10 | 36 | 0 | 5 | | | |

17 Sir Francis Drake Boulevard/Mitchel Drive/Banchero Way

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 0 | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 795 | | 795 | 1.10 | 875 | | 1 | 2 | 15 | | 3 | 21 | 816 | 896 |
| | L | 24 | | 24 | 1.05 | 25 | 22 | | | | | | 22 | 46 | 47 |
| WB | R | 4 | | 4 | 1.05 | 4 | 10 | | | | | | 10 | 14 | 14 |
| | T | 0 | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 22 | | 22 | 1.05 | 23 | 39 | | | | | | 39 | 61 | 62 |
| NB | R | 16 | | 16 | 1.05 | 17 | 34 | | | | | | 34 | 50 | 51 |
| | T | 550 | | 550 | 1.10 | 605 | | 2 | 6 | 15 | | 2 | 25 | 575 | 630 |
| | L | 0 | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | 8 | | 8 | 1.05 | 8 | | | | | | | 0 | 8 | 8 |
| | T | 0 | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 2 | | 2 | 1.05 | 2 | | | | | | | 0 | 2 | 2 |
| | | | | | | | 105 | 3 | 8 | 30 | 0 | 5 | | | |

# EXISTING PM PEAK HOUR TRIP GENERATION

Site 1: Christ Lutheran Church

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | 47 | 4 | | 0 | 4 | 2 | 2 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | 5.063 | 3 | | 0 | 3 | 1 | 1 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 7 | 3 | 4 |

Site 2: 10 Olema Street

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | 4 | 3 | | 0 | 3 | 2 | 1 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 3 | 2 | 1 |

Site 3: Westside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | 3 | 2 | | 0 | 2 | 1 | 1 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 26.075 | 141 | 0.34 | 48 | 93 | 52 | 41 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | 17.6 | 185 | 0.36 | 67 | 118 | 60 | 58 |
| | | | | | | | | | | | 214 | 114 | 100 |

Site 4: School Street Plaza

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | 1 | 1 | | 0 | 1 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 18.196 | 91 | 0.34 | 31 | 60 | 34 | 27 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 61 | 34 | 27 |

Site 5: Fair Anselm

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 48.047 | 241 | 0.34 | 82 | 159 | 89 | 70 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | 22 | 231 | 0.36 | 83 | 148 | 75 | 72 |
| | | | | | | | | | | | 307 | 165 | 142 |

Site 6: Eastside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | 5 | 5 | | 0 | 5 | 3 | 2 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | 9 | 6 | | 0 | 6 | 4 | 2 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 24.012 | 121 | 0.34 | 41 | 80 | 45 | 35 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 90 | 51 | 39 |

# ESTIMATED NEW PM PEAK HOUR TRIP GENERATION

Site 1: Christ Lutheran Church

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | 40 | 11 | | 0 | 11 | 7 | 4 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | 150 | 14 | | 0 | 14 | 6 | 7 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | 5 | 3 | | 0 | 3 | 1 | 1 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 27 | 14 | 13 |

Site 2: 10 Olema Street

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | 26 | 20 | | 0 | 20 | 12 | 9 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 1.65 | 8 | 0.34 | 3 | 5 | 3 | 2 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 26 | 15 | 11 |

Site 3: Westside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | 20 | 16 | | 0 | 16 | 9 | 7 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 28.075 | 141 | 0.34 | 48 | 93 | 52 | 41 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | 17.6 | 185 | 0.36 | 67 | 118 | 60 | 58 |
| | | | | | | | | | | | 227 | 121 | 105 |

Site 4: School Street Plaza

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | 10 | 8 | | 0 | 8 | 5 | 3 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | 300 | 27 | | 0 | 27 | 13 | 14 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 35 | 17 | 18 |

Site 5: Fair Anselm

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | | 0 | | 0 | 0 | 0 | 0 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | | 0 | | 0 | 0 | 0 | 0 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | 15 | 12 | | 0 | 12 | 7 | 5 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 52.047 | 261 | 0.34 | 89 | 172 | 97 | 76 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | 22 | 231 | 0.36 | 83 | 148 | 75 | 72 |
| | | | | | | | | | | | 332 | 179 | 153 |

Site 6: Eastside Commercial

| | | ITE | | | | | Existing Site | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | Description | LU Code | Units | Trip Rate | % In | % Out | Quantity | Trips | Pass-By % | PB Trips | Total Trips | % In | % Out |
| 1 | Single Family | 210 | DU | 1.01 | 0.63 | 0.37 | 5 | 5 | | 0 | 5 | 3 | 2 |
| 2 | Apartments | 220 | DU | 0.62 | 0.65 | 0.35 | 20 | 12 | | 0 | 12 | 8 | 4 |
| 3 | Condominiums | 231 | DU | 0.78 | 0.58 | 0.42 | | 0 | | 0 | 0 | 0 | 0 |
| 4 | Senior Housing | 251 | DU | 0.27 | 0.61 | 0.39 | | 0 | | 0 | 0 | 0 | 0 |
| 5 | Elementary School | 520 | Students | 0.02 | 0.49 | 0.51 | | 0 | | 0 | 0 | 0 | 0 |
| 6 | Private School (K-8) | 534 | Students | 0.09 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 7 | Church | 560 | SF | 0.55 | 0.48 | 0.52 | | 0 | | 0 | 0 | 0 | 0 |
| 8 | Day Care | 565 | SF | 12.46 | 0.47 | 0.53 | | 0 | | 0 | 0 | 0 | 0 |
| 9 | General Office | 710 | SF | 1.49 | 0.17 | 0.83 | | 0 | | 0 | 0 | 0 | 0 |
| 10 | Specialty Retail Center | 814 | SF | 5.02 | 0.56 | 0.44 | 29.512 | 148 | 0.34 | 50 | 98 | 55 | 43 |
| 11 | Shopping Center | 820 | SF | 3.73 | 0.49 | 0.51 | | 0 | 0.34 | 0 | 0 | 0 | 0 |
| 12 | Supermarket | 850 | SF | 10.50 | 0.51 | 0.49 | | 0 | 0.36 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | 115 | 66 | 49 |

# ESTIMATED RESULTING PM PEAK HOUR TRAFFIC VOLUMES

1 Sir Francis Drake Boulevard/Claus Drive

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Projects |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 17 | | 17 | 1.05 | 18 | | | | | | | 0 | 17 | 18 |
| | T | 13 | | 13 | 1.05 | 14 | | | | | | | 0 | 13 | 14 |
| | L | 11 | | 11 | 1.05 | 12 | | | | | | | 0 | 11 | 12 |
| WB | R | 33 | | 33 | 1.05 | 35 | | | 4 | | | | 4 | 37 | 39 |
| | T | 613 | | 613 | 1.10 | 674 | 6 | 10 | 3 | | | 1 | 20 | 633 | 694 |
| | L | 39 | | 39 | 1.05 | 41 | | | | -4 | | | -4 | 35 | 37 |
| NB | R | 39 | | 39 | 1.05 | 41 | | | | -1 | | | -1 | 38 | 40 |
| | T | 28 | | 28 | 1.05 | 29 | | | | | | | 0 | 28 | 29 |
| | L | 166 | | 166 | 1.05 | 174 | 2 | 1 | | | | | 3 | 169 | 177 |
| EB | R | 99 | | 99 | 1.05 | 104 | 2 | 1 | | | | | 3 | 102 | 107 |
| | T | 464 | | 464 | 1.10 | 510 | 5 | 6 | | | | 2 | 13 | 477 | 523 |
| | L | 19 | | 19 | 1.05 | 20 | | | | | | | 0 | 19 | 20 |
| | | | | | | | 15 | 18 | 7 | -5 | 0 | 3 | | | |

2 Broadway Boulevard/Claus Drive

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 35 | | 35 | 1.05 | 37 | | | | -4 | | | -4 | 31 | 33 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 116 | | 116 | 1.05 | 122 | 2 | 1 | | | | | 3 | 119 | 125 |
| WB | R | 215 | | 215 | 1.05 | 226 | 2 | 1 | | | | | 3 | 218 | 229 |
| | T | 135 | | 135 | 1.05 | 142 | | | | -2 | | | -2 | 133 | 140 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 120 | | 120 | 1.05 | 126 | | | | -2 | | | -2 | 118 | 124 |
| | L | 20 | | 20 | 1.05 | 21 | | | | | | | 0 | 20 | 21 |
| | | | | | | | 4 | 2 | 0 | -8 | 0 | 0 | | | |

3 Sherman Avenue/Dominga Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 16 | | 16 | 1.05 | 17 | | | | | | | 0 | 16 | 17 |
| | T | 20 | | 20 | 1.05 | 21 | | | | | 1 | | 1 | 21 | 22 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 14 | | 14 | 1.05 | 15 | | | | | 1 | | 1 | 15 | 16 |
| | L | 11 | | 11 | 1.05 | 12 | | | | | | | 0 | 11 | 12 |
| EB | R | 9 | | 9 | 1.05 | 9 | | | | | | | 0 | 9 | 9 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 11 | | 11 | 1.05 | 12 | | | | | | | 0 | 11 | 12 |
| | | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | | | |

4 Broadway Boulevard/Center Boulevard/Pacheco Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | 140 | | 140 | 1.05 | 147 | | | | | | 1 | 1 | 141 | 148 |
| | T | 20 | | 20 | 1.05 | 21 | | | | | | | 0 | 20 | 21 |
| | L | 70 | | 70 | 1.05 | 74 | | | | | | | 0 | 70 | 74 |
| WB | R | 48 | | 48 | 1.05 | 50 | | | | | | | 0 | 48 | 50 |
| | T | 475 | | 475 | 1.05 | 499 | | | | -2 | | | -2 | 473 | 497 |
| | L | 38 | | 38 | 1.05 | 40 | | | | | 1 | | 1 | 39 | 41 |
| NB | R | 36 | | 36 | 1.05 | 38 | | | | | 1 | | 1 | 37 | 39 |
| | T | 17 | | 17 | 1.05 | 18 | | | | | | | 0 | 17 | 18 |
| | L | 12 | | 12 | 1.05 | 13 | | | | | | | 0 | 12 | 13 |
| EB | R | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | T | 338 | | 338 | 1.05 | 355 | | | | -1 | | | -1 | 337 | 354 |
| | L | 113 | | 113 | 1.05 | 119 | | | | | | 2 | 2 | 115 | 121 |
| | | | | | | | 0 | 0 | 0 | -3 | 2 | 3 | | | |

5 Broadway Boulevard/Bank Street

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 130 | | 130 | 1.05 | 137 | | | | -4 | | | -4 | 126 | 133 |
| | L | 40 | | 40 | 1.05 | 42 | | | | | | | 0 | 40 | 42 |
| NB | R | 65 | | 65 | 1.05 | 68 | | | | | | | 0 | 65 | 68 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 35 | | 35 | 1.05 | 37 | | | | -5 | | | -5 | 30 | 32 |
| EB | R | 50 | | 50 | 1.05 | 53 | | | | -3 | | | -3 | 47 | 50 |
| | T | 115 | | 115 | 1.05 | 121 | | | | -2 | | | -2 | 113 | 119 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 0 | 0 | 0 | -14 | 0 | 0 | | | |

6 Broadway Boulevard/Bolinas Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic: Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 296 | | 296 | 1.05 | 311 | | | | -2 | | | -2 | 294 | 309 |
| | L | 372 | | 372 | 1.05 | 391 | | | | | | 1 | 1 | 373 | 392 |
| NB | R | 222 | | 222 | 1.05 | 233 | | | | | | 2 | 2 | 224 | 235 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 48 | | 48 | 1.05 | 50 | 2 | 1 | | | | | 3 | 51 | 53 |
| EB | R | 90 | | 90 | 1.05 | 95 | 2 | 1 | | | | | 3 | 93 | 98 |
| | T | 144 | | 144 | 1.05 | 151 | | | | -1 | | | -1 | 143 | 150 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 4 | 2 | 0 | -3 | 0 | 3 | | | |

7n

| Bolinas Avenue/Mono Lane (N) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 420 | | 420 | 1.05 | 441 | 2 | 1 | | | | 1 | 4 | 424 | 445 |
| | L | 5 | | 5 | 1.05 | 5 | | | | | | | 0 | 5 | 5 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | 2 | | 2 | 1.05 | 2 | | | | | | | 0 | 2 | 2 |
| | T | 415 | | 415 | 1.05 | 436 | 2 | 1 | | | | 2 | 5 | 420 | 441 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 4 | 2 | 0 | 0 | 0 | 3 | | | |

7s

| Bolinas Avenue/Mono Lane (S) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 28 | | 28 | 1.05 | 29 | | | | | | | 0 | 28 | 29 |
| | T | 372 | | 372 | 1.05 | 391 | 2 | 1 | | | | 1 | 4 | 376 | 395 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 417 | | 417 | 1.05 | 438 | 2 | 1 | | | | 2 | 5 | 422 | 443 |
| | L | 5 | | 5 | 1.05 | 5 | | | | | | | 0 | 5 | 5 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 4 | 2 | 0 | 0 | 0 | 3 | | | |

8

| Mono Avenue/Pacheco Avenue | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 40 | | 40 | 1.05 | 42 | | | | | 1 | | 1 | 41 | 43 |
| | L | 14 | | 14 | 1.05 | 15 | | | | | | | 0 | 14 | 15 |
| WB | R | 8 | | 8 | 1.05 | 8 | | | | | | | 0 | 8 | 8 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 1 | | 1 | 1.05 | 1 | | | | | | | 0 | 1 | 1 |
| NB | R | 1 | | 1 | 1.05 | 1 | | | | | | | 0 | 1 | 1 |
| | T | 26 | | 26 | 1.05 | 27 | | | | | 1 | | 1 | 27 | 28 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | 2 | | 2 | 1.05 | 2 | | | | | | | 0 | 2 | 2 |
| | T | 3 | | 3 | 1.05 | 3 | | | | | | | 0 | 3 | 3 |
| | L | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | | | |

9

| Elsie Lane/Bolinas Road | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 20 | | 20 | 1.05 | 21 | | | | | | | 0 | 20 | 21 |
| | T | 372 | | 372 | 1.05 | 391 | 1 | 1 | | | | 1 | 3 | 375 | 394 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 397 | | 397 | 1.05 | 417 | 1 | 1 | | | | 2 | 4 | 401 | 421 |
| | L | 50 | | 50 | 1.05 | 53 | | | | -5 | | | -5 | 45 | 48 |
| EB | R | 70 | | 70 | 1.05 | 74 | | | | -3 | | | -3 | 67 | 71 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 25 | | 25 | 1.05 | 26 | | | | | | | 0 | 25 | 26 |
| | | | | | | | 2 | 2 | 0 | -8 | 0 | 3 | | | |

10

| Sir Francis Drake Boulevard/Pacheco Avenue | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 688 | | 688 | 1.05 | 722 | 6 | 10 | 7 | | | 1 | 24 | 712 | 746 |
| | L | 182 | | 182 | 1.05 | 191 | | | | | | 1 | 1 | 183 | 192 |
| NB | R | 165 | | 165 | 1.05 | 173 | | | | | | 2 | 2 | 167 | 175 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 32 | | 32 | 1.05 | 34 | | | | | | | 0 | 32 | 34 |
| EB | R | 49 | | 49 | 1.05 | 51 | | | | | | | 0 | 49 | 51 |
| | T | 448 | | 448 | 1.05 | 470 | 5 | 6 | 5 | | | 2 | 18 | 466 | 488 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 11 | 16 | 12 | 0 | 0 | 6 | | | |

11

| Mono Avenue/Elsie Street | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 90 | | 90 | 1.05 | 95 | | | | -3 | | | -3 | 87 | 92 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | 22 | | 22 | 1.05 | 23 | | | | | | | 0 | 22 | 23 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 6 | | 6 | 1.05 | 6 | | | | | | | 0 | 6 | 6 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 75 | | 75 | 1.05 | 79 | | | | -5 | | | -5 | 70 | 74 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 0 | 0 | 0 | -8 | 0 | 0 | | | |

12

| Bolinas Road/Sherman Avenue | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 455 | | 455 | 1.10 | 501 | 1 | 1 | | | | 1 | 3 | 458 | 504 |
| | L | 9 | | 9 | 1.05 | 9 | | | | | | | 0 | 9 | 9 |
| WB | R | 12 | | 12 | 1.05 | 13 | | | | | | | 0 | 12 | 13 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 15 | | 15 | 1.05 | 16 | | | | | | | 0 | 15 | 16 |
| NB | R | 11 | | 11 | 1.05 | 12 | | | | | | | 0 | 11 | 12 |
| | T | 433 | | 433 | 1.10 | 476 | 1 | 1 | | -5 | | 7 | -1 | 432 | 475 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 2 | 2 | 0 | -5 | 0 | 3 | | | |

13 Sir Francis Drake Boulevard/Pastori Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 15 | | 15 | 1.05 | 16 | | | | | | | 0 | 15 | 16 |
| | T | 8 | | 8 | 1.05 | 8 | | | | | 2 | | 2 | 10 | 10 |
| | L | 30 | | 30 | 1.05 | 32 | | | | | | | 0 | 30 | 32 |
| WB | R | 52 | | 52 | 1.05 | 55 | | | | | | | 0 | 52 | 55 |
| | T | 797 | | 797 | 1.10 | 877 | 5 | 8 | 7 | -4 | | 4 | 20 | 817 | 897 |
| | L | 118 | | 118 | 1.05 | 124 | | | | | 6 | | 6 | 124 | 130 |
| NB | R | 104 | | 104 | 1.05 | 109 | | | | | 5 | 3 | 8 | 112 | 117 |
| | T | 22 | | 22 | 1.05 | 23 | | | | | 1 | | 1 | 23 | 24 |
| | L | 57 | | 57 | 1.05 | 60 | 1 | 2 | | | | 2 | 5 | 62 | 65 |
| EB | R | 37 | | 37 | 1.05 | 39 | 1 | 1 | | | | 1 | 3 | 40 | 42 |
| | T | 554 | | 554 | 1.10 | 609 | 4 | 5 | 5 | -1 | | 1 | 14 | 568 | 623 |
| | L | 17 | | 17 | 1.05 | 18 | | | | | | | 0 | 17 | 18 |
| | | | | | | | 11 | 16 | 12 | -5 | 14 | 11 | | | |

14 Center Boulevard/Pastori Avenue

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 109 | | 109 | 1.05 | 114 | | 1 | | | 6 | 1 | 8 | 117 | 122 |
| | T | 10 | | 10 | 1.05 | 11 | | | | | | | 0 | 10 | 11 |
| | L | 68 | | 68 | 1.05 | 71 | 1 | | | | | 3 | 4 | 72 | 75 |
| WB | R | 67 | | 67 | 1.05 | 70 | 1 | 1 | | | | 3 | 5 | 72 | 75 |
| | T | 427 | | 427 | 1.05 | 448 | | | | -2 | 3 | | 1 | 428 | 449 |
| | L | 13 | | 13 | 1.05 | 14 | | | | | | | 0 | 13 | 14 |
| NB | R | 12 | | 12 | 1.05 | 13 | | | | | | | 0 | 12 | 13 |
| | T | 12 | | 12 | 1.05 | 13 | | | | | 1 | | 1 | 13 | 14 |
| | L | 17 | | 17 | 1.05 | 18 | | | | | | | 0 | 17 | 18 |
| EB | R | 9 | | 9 | 1.05 | 9 | | | | | | | 0 | 9 | 9 |
| | T | 361 | | 361 | 1.05 | 379 | | | | -1 | 4 | | 3 | 364 | 382 |
| | L | 101 | | 101 | 1.05 | 106 | | 1 | | | 5 | 2 | 8 | 109 | 114 |
| | | | | | | | 2 | 3 | 0 | -3 | 19 | 9 | | | |

15 Sir Francis Drake Boulevard/Olema Road

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | 3 | | 3 | 1.05 | 3 | | 2 | | | | | 2 | 5 | 5 |
| | T | 627 | | 627 | 1.10 | 690 | 7 | | | -5 | | 2 | 4 | 631 | 694 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| WB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| NB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 840 | | 840 | 1.10 | 924 | 8 | | | -4 | | 1 | 5 | 845 | 929 |
| | L | 69 | | 69 | 1.05 | 72 | | 11 | | | | | 11 | 80 | 83 |
| EB | R | 28 | | 28 | 1.05 | 29 | | 7 | | | | | 7 | 35 | 36 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 2 | | 2 | 1.05 | 2 | | 2 | | | | | 2 | 4 | 4 |
| | | | | | | | 15 | 22 | 0 | -9 | 0 | 3 | | | |

16 Sir Francis Drake Boulevard/Oak Manor Drive

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 506 | | 506 | 1.10 | 557 | 7 | 2 | | -3 | | 2 | 8 | 514 | 565 |
| | L | 20 | | 20 | 1.05 | 21 | | | | | | | 0 | 20 | 21 |
| WB | R | 22 | | 22 | 1.05 | 23 | | | | | | | 0 | 22 | 23 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 124 | | 124 | 1.05 | 130 | | | | -2 | | | -2 | 122 | 128 |
| NB | R | 83 | | 83 | 1.05 | 87 | | | | -2 | | | -2 | 81 | 85 |
| | T | 708 | | 708 | 1.10 | 779 | 8 | 2 | | -2 | | 1 | 9 | 717 | 788 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 15 | 4 | 0 | -9 | 0 | 3 | | | |

17 Sir Francis Drake Boulevard/Mitchel Drive/Banchero Way

| Dir | | Existing Traffic | 2011 Factor | 2011 Traffic | 2030 Factor | 2030 Traffic | Project Traffic | | | | | | | Existing + Projects | 2030 + Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lutheran | Olema | Westside | School | Fair Anselm | Eastside | Total | | |
| SB | R | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | T | 467 | | 467 | 1.10 | 514 | | 2 | | -3 | | 2 | 1 | 468 | 515 |
| | L | 5 | | 5 | 1.05 | 5 | 3 | | | | | | 3 | 8 | 8 |
| WB | R | 1 | | 1 | 1.05 | 1 | 2 | | | | | | 2 | 3 | 3 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | 7 | | 7 | 1.05 | 7 | 7 | | | | | | 7 | 14 | 14 |
| NB | R | 6 | | 6 | 1.05 | 6 | 8 | | | | | | 8 | 14 | 14 |
| | T | 701 | | 701 | 1.10 | 771 | | 2 | | -2 | | 1 | 1 | 702 | 772 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| EB | R | 2 | | 2 | 1.05 | 2 | | | | | | | 0 | 2 | 2 |
| | T | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | L | | | 0 | 1.05 | 0 | | | | | | | 0 | 0 | 0 |
| | | | | | | | 20 | 4 | 0 | -5 | 0 | 3 | | | |

**ILLINGWORTH & RODKIN, INC.**
Acoustics • Air Quality
*505 Petaluma Boulevard South*
*Petaluma, California 94952*

*Tel: 707-766-7700*
*www.illingworthrodkin.com*

*Fax: 707-766-7790*
*illro@illingworthrodkin.com*

January 30, 2012

Sean Kennings
Planning Consultant
LAK Associates, LLC
3030 Bridgeway Blvd, Suite 103
Sausalito, CA 94965

VIA E-MAIL: sean@lakassociates.com

**SUBJECT: Fairfax General Plan Update Air Quality and Greenhouse Gas CEQA Evaluation**

Dear Sean:

The purpose of this letter is to address air quality impacts and greenhouse gas emissions associated with the update to the Town of Fairfax General Plan. The General Plan Update mostly involves updates to policies and implementing measures. Growth from General Plan build out was assumed to occur in areas referred to as "Opportunity Sites." Because in-depth traffic and population analyses of the General Plan Update were not conducted, we analyzed impacts a little differently than recommended in the BAAQMD CEQA Air Quality Guidelines. We tried to quantify impacts following project thresholds since we do not know the rate of traffic increases in the town with respect to population increases. In addition, we could not provide an inventory of greenhouse gas emissions from the Town and update that with respect to the General Plan Update effects. However, we are making the assumption that the Draft Climate Action Plan includes build-out conditions that would occur under the General Plan. That is, growth consistent with ABAG and MTC projections. We are assuming that growth in Fairfax under the General Plan Update would not exceed these projections. Our report is as follows:

**Setting**

The Town of Fairfax is located in Marin County, CA, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and Federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter ($PM_{10}$) and fine particulate matter ($PM_{2.5}$). While exceedances of these standards do not occur in Marin County, emissions from the area can contribute to exceedances elsewhere in the Bay Area.

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. Highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

EXHIBIT # E

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less ($PM_{10}$) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of $PM_{10}$ and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and Federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the state's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008 CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles[1]. The regulation requires affected vehicles to meet specific performance requirements between 2011 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The Bay Area Air Quality Management District (BAAQMD) is the regional agency tasked with managing air quality in the region. At the State level, the California Air Resources Board (a part of the California Environmental Protection Agency) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has recently published CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects[2].

**Impact 1:** Conflict with or obstruct implementation of the applicable air quality plan? ***No Impact***

The BAAQMD CEQA Air Quality Guidelines provide methods for determining the consistency of General Plan update projects with the Bay Area's latest clean air plan. The most recent clean air plan is the *Bay Area 2010 Clean Air Plan* that was adopted by BAAQMD in September 2010.

---

[1] http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm
[2] Bay Area Air Quality Management District. 2010. BAAQMD CEQA Air Quality Guidelines. June.

Emissions of non-attainment air pollutants are addressed under Impacts 2 and 3. Exposure of sensitive receptors (proposed new receptors and existing receptors) is addressed under Impact 4. Impact 6 addresses GHG emissions that could occur from new development occurring under the General Plan.

Clean Air Plan Projections

The consistency of the proposed project with this regional plan is primarily a question of the consistency with the population/employment assumptions utilized in developing the 2010 Clean Air Plan (CAP), which were based on ABAG and MTC Projections. The proposed development occurring under the General Plan Update is anticipated to meet regional housing requirements and not exceed ABAG projections. Traffic generated as part of this development would lead to potential air pollutant emissions. BAAQMD CEQA Air Quality Guidelines recommend that plans evaluate the change in vehicle travel in comparison to population growth. However, the General Plan Update does not include a comprehensive traffic study that evaluates vehicle travel. Development under the General Plan Update is anticipated to concentrate on higher density housing in areas with mixed uses that have access to transit and bicycle and pedestrian amenities. For this reason, growth under the General Plan Update is not anticipated to conflict with Clean Air Plan projections of population and vehicle activity growth.

Since much of the growth would be associated with development of the Opportunity Sites, this analysis computed those emissions and compared them to BAAQMD project emission thresholds. Rather than compare projections of vehicle travel with population growth, this analysis computes the emissions of the growth and compares it to project-level significance thresholds to determine if growth in vehicle travel would cause significant emissions and conflict with the latest CAP. That analysis is contained under Impact 2.

Consistency with Clean Air Plan Control Measures

The 2010 CAP includes about 55 control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The control measures are divided in to five categories that include:

- 18 measures to reduce stationary and area sources;
- 10 mobile source measures;
- 17 transportation control measures;
- 6 land use and local impact measures; and
- 4 energy and climate measures

In developing the control strategy, BAAQMD identified the full range of tools and resources available, both regulatory and non-regulatory, to develop each measure. Implementation of each control measure will rely on some combination of the following:

- Adoption and enforcement of rules to reduce emissions from stationary sources, area sources, and indirect sources;
- Revisions to BAAQMD's permitting requirements for stationary sources;
- Enforcement of CARB rules to reduce emissions from heavy - duty diesel engines;
- Allocation of grants and other funding by the Air District and/or partner agencies;
- Promotion of best policies and practices that can be implemented by local agencies through guidance documents, model ordinances, etc.;
- Partnerships with local governments, other public agencies, the business community, non - profits, etc.;
- Public outreach and education;
- Enhanced air quality monitoring;

- Development of land use guidance and CEQA guidelines, and Air District review and comment on Bay Area projects pursuant to CEQA; and
- Leadership and advocacy.

This approach relies upon lead agencies to assist in implementing some of the control measures. A key tool for local agency implementation is the development of land use policies and implementing measures that address new development or redevelopment in local communities. The consistency of the proposed General Plan update is evaluated with respect to each set of control measures.

*Stationary and Area Source Control Measures*
The CAP includes Stationary Source Control measures that BAAQMD adopts as rules or regulations through their authority to control emissions from stationary and area sources. The BAAQMD is the implementing agency, since these control measures are applicable to sources of air pollution that must obtain District permits. Any new stationary sources would be required to obtain proper permits through BAAQMD. In addition, the City uses BAAQMD's CEQA Air Quality Guidelines to evaluate air pollutant emissions from new sources.

*Mobile Source Measures*
The CAP includes Mobile Source Measures that would reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment through programs such as the BAAQMD's Vehicle Buy-Back and Smoking Vehicle Programs, and promoting advanced technology vehicles that reduce emissions. The implementation of these measures rely heavily upon incentive programs, such as the Carl Moyer Program and the Transportation Fund for Clean Air, to achieve voluntary emission reductions in advance of, or in addition to, CARB requirements. CARB has new regulations that require the replacement or retrofit of on-road trucks, construction equipment and other specific equipment that is diesel powered.

*Transportation Control Measures*
The CAP includes transportation control measures (TCMs) that are strategies meant to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. While most of the TCMs are implemented at the regional level (e.g., by MTC or Caltrans), there are measures that the CAP relies upon local communities to assist with implementation. In addition, the CAP includes land use measures and energy and climate measures where implementation is aided by proper land use planning decisions. The City's latest General Plan includes measures to reduce vehicle travel that are generally consistent with the CAP TCMs. In addition to the proposed programs to encourage development of mixed uses at infill sites, the General Plan Updates includes numerous Circulation programs aimed at reducing motor vehicle travel. Many of these programs focus on developing or expanding the Town's comprehensive pedestrian and bicycling amenities that would include new or improved trails and bike lanes (Programs C-5.1.1 through C-5.1.5, C-5.2 and C-5.2.3, C-5.3.2, C-5.4.2, C-5.5.2, C-5.6.2, C-5.6.3, C-5.7.1, C-5.7.2, C-5.8.1). These programs are further supported by the TC programs (e.g., TC-3.2.1 through TC-3.2.5, and TC-3.2.7)

*TAC Exposure*
The project site includes sensitive receptors that would be located near sources of TAC emissions. The CAP includes measures to reduce TAC exposure to sensitive receptors. The City uses the BAAQMD CEQA Air Quality Guidelines to identify community risk impacts and develop appropriate mitigation measures. TAC exposure is addressed under Impact 4.

*Climate Action Plan*
Currently, the Town has developed a draft Climate Action Plan that includes implementing actions to reduce air pollutant and GHG emissions to address climate change through development of a Climate Action Plan. When adopted, these actions or policies would support many of the CAP measures aimed at reducing air pollutant and GHG emissions associated with land use planning. In the meantime, the

General Plan Update incorporates many of the recommendations included in the Climate Action Plan. These are addressed in the Conservation Element as programs contained in CON-1.1, CON-1.2, CON-1.3 and CON-2.1. In addition, CON-7.1 and CON-7.2 address the reduction of solid waste, which indirectly generates GHG emissions.

The proposed General Plan Update would not conflict with the latest Clean Air planning efforts since (1) the project would have emissions well below the BAAQMD thresholds (see Impact 2), (2) the General Plan Update would not interfere with implementation of control measures included in the CAP, and (3) the General Plan Update includes policies and implementing measures that support control measures to reduce air pollutant and GHG emissions, especially those aimed at reducing transportation-related emissions.

**Impact 2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***Less than significant***

The Bay Area is considered a non-attainment area for ground-level ozone and fine particulate matter ($PM_{2.5}$) under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for respirable particulates or particulate matter with a diameter of less than 10 micrometers ($PM_{10}$) under the California Clean Air Act, but not the Federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and $PM_{10}$, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NOx), $PM_{10}$ and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Opportunity sites where much of the growth under the General Plan Update would occur were considered for new air pollutant emissions. The URBEMIS2007 model was used to predict annual and daily emissions associated with new development or redevelopment of the six opportunity sites. Emissions were modeled with URBEMIS2007 default inputs for the San Francisco Bay Area. This includes default trip rates and travel characteristics for the selected land uses. Because model defaults were used, these predictions likely overestimate the actual emissions that would occur. For example, the model did not incorporate any effects of transit, bicycle or pedestrian travel modes. Emissions of both area and operational (i.e., traffic) were predicted assuming complete build out in 2020. Emissions from the build out of the General Plan Update Opportunity sites would be below thresholds used by BAAQMD to evaluate emissions from projects.

**Table 1. Average Daily Emissions for Development/Redevelopment of General Plan Update Opportunity Sites**

| Scenario | Total Exhaust or Evaporative Emissions ROG | NOx | PM10 | PM2.5 |
|---|---|---|---|---|
| **Emissions in tons per year** | | | | |
| Site #1 Lutheran Church | 0.82 | 0.4 | 0.71 | 0.14 |
| Site #2 10 Olema | 0.41 | 0.23 | 0.57 | 0.11 |
| Site #3 Westside Commercial | 0.27 | 0.14 | 0.31 | 0.06 |
| Site #4 School Street Plaza | 0.67 | 0.41 | 1.11 | 0.21 |
| Removal of existing uses | -0.5 | -0.61 | -1.81 | -0.34 |
| Site #5 Fair Anselm Shopping Center | 0.35 | 0.26 | 0.68 | 0.13 |
| Site #6 Eastside Commercial | 0.34 | 0.26 | 0.75 | 0.14 |
| **Total** | **2.36** | **1.09** | **2.32** | **0.45** |
| *BAAQMD Thresholds (tons/year)* | *10* | *10* | *15* | *10* |
| **Emissions in in pounds per day** | | | | |
| Site #1 Lutheran Church | 4.5 | 2.2 | 3.9 | 0.8 |
| Site #2 10 Olema | 2.2 | 1.3 | 3.1 | 0.6 |
| Site #3 Westside Commercial | 1.5 | 0.8 | 1.7 | 0.3 |
| Site #4 School Street Plaza | 3.7 | 2.2 | 6.1 | 1.2 |
| Removal of existing uses | -2.7 | -3.3 | -9.9 | -1.9 |
| Site #5 Fair Anselm Shopping Center | 1.9 | 1.4 | 3.7 | 0.7 |
| Site #6 Eastside Commercial | 1.9 | 1.4 | 4.1 | 0.8 |
| **Total** | **12.9** | **6.0** | **12.7** | **2.5** |
| *BAAQMD Thresholds (pounds/day)* | 54 | 54 | 82 | 54 |

**Impact 3:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Less-than-significant***

As discussed under Impact 2, the project would have emissions less than significant thresholds adopted by BAAQMD for evaluating impacts to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and Federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. There is an ambient air quality monitoring station in San Rafael that measures carbon monoxide concentrations. The highest measured level over any 8-hour averaging period during the last 3 years is less than 2 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections in Fairfax would have traffic volumes that are below screening levels used by BAAQMD to identify potential air quality impacts from local traffic. BAAQMD screening guidance indicates that projects would have a less than significant impact to carbon monoxide levels if project traffic projections indicate traffic levels would not increase at any affected intersection to more than 44,000 vehicles per hour.

**Impact 4:** Expose sensitive receptors to substantial pollutant concentrations? ***Less-than- significant with construction period mitigation measures***

According to the BAAQMD CEQA Air Quality Guidelines, for a General Plan to have a less-than-significant impact with respect to TACs, buffer zones must be established around existing and proposed land uses that would emit these air pollutants. Buffer zones to avoid TAC impacts must be reflected in local plan policies, land use maps, or implementing ordinances.

The BAAQMD CEQA Air Quality Guidelines consider exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard, to be significant. For cancer risk, which is a concern with diesel particulate matter and other mobile-source TACs, the BAAQMD considers an increased risk of contracting cancer that is 10 in one million chances or greater, to be significant risk for a single source. The BAAQMD CEQA Guidelines also consider exposure to annual $PM_{2.5}$ concentrations that exceed 0.3 micrograms per cubic meter (μg/m3) to be significant. Non-cancer risk would be considered significant if the computed Hazard Index is greater than 1.0 .

The General Plan Update would permit and facilitate the development of new sensitive receptors (e.g., new homes) in locations near arterial roadways, and possibly stationary sources of TACs. Screening modeling indicates that sensitive receptors within some areas of Fairfax could be exposed to levels of TACs and or $PM_{2.5}$ that could cause an unacceptable cancer risk or hazard near the following roadways and train lines. Sources of TAC emissions in Fairfax include:

Roadways. Sir Francis Drake Boulevard is the main arterial roadway through town and the only roadway in Fairfax that carries about 20,000 or more average daily traffic trips. BAAQMD considers roadways with this much traffic as having a potential to expose sensitive receptors to TACs. There are no daily traffic projections for Sir Francis Drake Boulevard. Peak-hour projections indicate volumes of 1,300 to almost 1,700 vehicles per hour. Assuming that the peak-hour is equivalent to 7-percent of the average daily traffic volume, then Sir Francis Drake could carry up to almost 24,000 vehicles per day. BAAQMD publishes screening tables to determine community risk from local roadways. Community risk impacts were computed from these tables assuming a traffic volume of 24,000 average daily trips for a east-west roadway in Marin County. Based on the BAAQMD tables, cancer risk, non-cancer risk and $PM_{2.5}$ concentrations would be well below the BAAQMD recommended significance levels.

Stationary Sources. BAAQMD provides a Google Earth tool that was used to identify stationary sources of TACs. According to the BAAQMD records, there are four fueling stations and three dry cleaners that are sources of TAC emissions in Fairfax. There are some other very minor sources that do not affect adjacent land uses.

*Fueling Stations*. According to the California Air Resources Board's (CARB) *Land Use and Air Quality Handbook*, most gas station facilities that incorporate vapor recovery systems meeting current regulations have less-than-significant cancer risk at distances beyond 50 feet. Gasoline dispensing stations with very large throughputs would have higher risks, but the data described by CARB represents the upper limit for 96 percent of the State's gasoline stations. Based on these data, the nearby Arco station is not expected to have a cancer risk greater than 3 in one million at the proposed project (over 500 feet away). The gasoline station is not a source that leads to $PM_{2.5}$ exposure and does not cause acute or chronic non-cancer risk impacts.

*Dry Cleaning Operations*. According to the California Air Resources Board (CARB), dry cleaning operations that use perchlorethylene could pose significant cancer risk at distances out to 300 feet. However, significant impacts would be considerably less, because recent CARB regulations will phase out the use of perchloroethylene by 2023. That will greatly reduce current

impacts and eliminate future exposures for development under the General Plan Update. Dry cleaning operations are not a source of $PM_{2.5}$ emissions.

Future development or redevelopment-facilitated development within Fairfax, could generate short-term temporary emissions of dust, fuel combustion exhaust, and gases from architectural coatings and other building materials. The most substantial air pollutant emissions would be fugitive dust generated from demolition of buildings and other site improvements, loading debris into trucks for disposal, grading and earth-moving, and wind erosion of exposed ground areas. Construction activities could also generate exhaust emissions from vehicles, equipment and worker commute trips, primarily in the form of particulate matter ($PM_{10}$ and $PM_{2.5}$) and nitrogen oxides. Solvents in adhesives, non-water-based paints, thinners, some insulating materials, and caulking materials can evaporate into the atmosphere and participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application. The General Plan Update Conservation Element includes programs in CON-2.1.2 that would reduce construction emissions by controlling dust and exhaust emissions and mitigating TAC emissions from demolition projects.

BAAQMD has adopted emission-based thresholds that would apply to exhaust and evaporative emissions from construction activities. Development in accordance with the General Plan Update would occur over a period of many years, where some years may have more construction and other years may have little or no construction. Exhaust construction emissions would be dependent on the year that construction occurs and the age of the construction fleet used, especially for large construction equipment. Recent State law requires retrofit or replacement of construction equipment, which will result in substantial decreases in future nitrogen oxides ($NO_X$) and particulate matter (including diesel particulate matter) emissions from construction equipment. In addition, State law would also require retrofitting or replacement of large trucks that are typically used in construction. BAAQMD's thresholds apply to emissions from projects and are not applicable to potential emissions resulting from build-out of land use plans.

**Impact 5:** Create objectionable odors affecting a substantial number of people? ***Less-than-significant***

Odors are assessed based on the potential of the Plan to result in odor complaints. This could result from the Plan creating development that produces objectionable odors or places people near sources of objectionable odors.

Sources of odors in Fairfax are localized. These primarily include restaurants. Significant odor sources are not currently located within the Town; therefore, new uses are not likely to be affected by existing odor sources. The Town would include a mix of uses that could place new residences near localized sources of odors. An example would be a mixed-use building that includes both residences and restaurants. While this mix of uses is common in urban areas, odor complaints can occur. Some people find odors from restaurants objectionable, while others find them pleasant. This is considered to be a ***significant*** impact.

**Mitigation Measure 1:** New restaurants located in mixed-use developments, or adjacent to residential developments, shall install kitchen exhaust vents with filtration systems, re-route vents away from residential development, or use other accepted methods of odor control, in accordance with local building and fire codes. New residences proposed in buildings or immediately adjacent to buildings that include restaurant or other odor producing uses shall be designed to reduce exposures to odors. This could be conducted through proper design of ventilations systems either at the residence or the source.

**Impact 6:** Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Less-than-significant***

Scientists have found that human caused emissions of greenhouse gases (GHG) contribute to global warming. The State of California is addressing this issue through legislation, policy guidance, and outreach programs. Carbon dioxide ($CO_2$) is the primary GHG emitted from land use projects, mostly through automobile and energy use.

The Natural Resources Agency conducted formal rulemaking in 2009, as required by SB 97 for issuing criteria to determine the significance of projects or plans. Projects or plans would have a significant impact if they would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs

OPR recommended that each agency develop an approach to addressing GHG emissions that is based on best available information. The approach includes three basic steps: (1) identify and quantify emissions; (2) assess the significance of the emissions; and (3) if emissions are significant, identify mitigation measures or alternatives that will reduce the impact to a less-than-significant level.

**Significance Thresholds**

The BAAQMD released thresholds of significance in their latest CEQA Air Quality Guidelines dated May 2011 to include performance standards for Plans and projects. BAAQMD identifies the two different project thresholds of significance for GHG emissions from plans: (1) compliance with a qualified Climate Action Plan or (2) emissions of 4.6 metric tons of CO2e per service population per year for projects and plans and 6.6 metric tons for General Plans when analyzing all community emissions.[3,4,5] Because global warming is the result of GHG emissions and these emissions are the result of innumerable sources worldwide, global climate change is a cumulative impact and all analyses are, by their nature, cumulative analyses.

---

[3] BAAQMD, 2011. *California Environmental Quality Act. Air Quality Guidelines*, updated May, 2011.
[4] The threshold of 6.6 from the May 2011 BAAQMD guidelines is only applicable to General Plans.
[5] The term Service Population refers to the number of employees + residents in the Plan area.

The Town of Fairfax has developed a draft Climate Action Plan. The discussion below under Criterion b. analyzes the Climate Action Plan and its qualifications according to the BAAQMD criteria, and judges the Specific Plan GHG emissions under the performance-based thresholds.

***GHG Emissions Impact Discussion***

The following provides a discussion of the potential GHG impacts that could occur as a result of implementation of the General Plan Update. As with air pollutant emissions, GHG emissions increases associated with the General Plan Update are anticipated to be mainly due to development or redevelopment of Opportunity Sites. GHG emissions associated with development of these sites were modeled.

Operation-related GHG emissions derive primarily from five sources:

- Mobile source emissions due to additional trips generated by the Plan
- Emissions from electricity generated by fossil-fuel power plants to the Plan Area
- Emissions caused by consumption of natural gas for heating, cooking and water heating within the Plan
- Municipal emissions created by transport and treatment of water supply to the Plan and by electricity used to light streets
- Municipal emissions created by the disposal and decomposition in landfills of solid waste generated from the Plan Area.

GHG emissions were modeled for year 2020 to be consistent with AB 32 targets used by BAAQMD to develop GHG significance thresholds. Emissions would be lower in future years as emissions from vehicles and electricity generation will be reduced as regulations and implementing programs contained in AB 32 become more effective. The GHG emissions associated with the development of the Plan were calculated based primarily on guidance in the BAAQMD CEQA Air Quality Guidelines. Area and mobile source emissions were calculated using the URBEMIS2007 model using the Opportunity Site land uses. The URBEMIS2007 input files were then used with the BAAQMD Greenhouse Gas Model (BGM), to provide annual GHG emissions in terms of metric tons of $CO_2e$.

The URBEMIS2007 modeling used the project size and type to predict area source and operational (traffic-related) emissions. The total square footages for the various Opportunity Site land uses (e.g., residential, school, retail, etc.) were input to the model.

As discussed above, the BGM model uses the URBEMIS2007 input model file. The BGM model provides $CO_2e$ emissions associated with transportation, area sources, natural gas usage, electricity usage, electricity usage associated with water conveyance, and solid waste generation. This model applies adopted Pavley rules and the low carbon fuel standard to URBEMIS2007 predicted vehicle emissions.

Emission of CO2e associated with natural gas combustion and electricity usage were computed using default consumption rates contained in BGM. Since the proposed project would include construction of new buildings that would be compliant with new State Building code, energy efficiency was assumed to be at least 10 percent greater than existing conditions.

Default emissions rates of water and wastewater conveyance were used. The BGM output emissions for CO2e were adjusted based on the PG&E emissions rates for electricity described above. Emissions associated with solid waste were also included in the BGM modeling. For this assessment, a county-wide waste diversion rate of 50% was assumed in the modeling. Although GHG emissions were not included in development of the significance threshold by BAAQMD, they are included in this assessment.

The per capita rate is the total annual GHG emissions expressed in metric tons divided by the estimated number of new residences and employees. Based on U.S. Census data, the average household in Los Altos includes 2.31 residents[6]. An estimate of one employee per 300 square feet of retail-type land use was assumed. In addition, the number of school students was also considered.

The results shown in Table 2 reflect the potential land use growth in the General Plan Update that could produce emissions. As these results do not include the effects of the General Plan policies or Draft Climate Action Plan, the GHG emissions are overestimated.

**Table 2. Annual GHG Emissions Associated with Development/Redevelopment of General Plan Update Opportunity Sites**

| Scenario | Annual Emissions (metric tons) $CO_2$ | |
|---|---|---|
| **Emissions in tons per year** | | |
| Site #1 Lutheran Church | 524 | |
| Site #2 10 Olema | 303 | |
| Site #3 Westside Commercial | 176 | |
| Site #4 School Street Plaza | 544 | |
| Removal of existing uses | -835 | |
| Site #5 Fair Anselm Shopping Center | 337 | |
| Site #6 Eastside Commercial | 364 | |
| **Total** | **1,412** | |
| *BAAQMD Thresholds (tons/year)* | *1,100* | |
| **GHG Emissions Per Capita** | **3.04** | |
| Annual Emissions | 1,412 | metric tons per BGM |
| Population | 88 | = 44 apts* 2 people/unit |
| Students | 400 | = 100 students *300 students |
| Workers | -24 | = -7,046 sf * 1 worker/300 sf |

[6] See *http://quickfacts.census.gov/qfd/states/06/0643280.html*

The General Plan Update includes several features that would reduce the GHG emissions from the numbers shown in Table 2. Most importantly, the General Plan Update would include the Climate Action Plan *Greenhouse Gas Reduction Strategies*. These include 10 different recommended actions that would reduce vehicle travel associated with land use. An approximate 4 percent reduction from overall Town emissions is anticipated with these measures alone. The draft Climate Action Plan also includes 14 recommended actions to reduce energy consumption and use cleaner (i.e., lower GHG emitting) sources of energy to reduce GHG emissions. These *Green Building, Energy Efficiency and Renewable Energy* measures are anticipated to reduce Town GHG emissions by almost 13 percent. Additional

The Town's Climate Action Plan is considered a qualified plan using the BAAQMD criteria, as it contains: a baseline inventory, business-as-usual scenario demonstrating the rise in GHG emissions in the absence of the Climate Action Plan, and an acceptable numerical target for GHG reduction in line with the Governor's Executive Order S-03-5.

The Climate Action Plan analyzed growth in Fairfax assuming ABAG and MTC projections for future population and vehicle activity. The General Plan Update is not anticipated to cause growth that would exceed those projections. GHG emissions at the programmatic level are, therefore, found to be less than significant.

> **Impact 7:** Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***No Impact.***

The proposed General Plan Update would include the Town's Draft Climate Action Plan recommended measures. The Climate Action Plan supports County, regional and State policies and regulations aimed at reducing the emissions of GHGs. As a result, adoption of the General Plan Update would not conflict with efforts to reduce GHG emissions.

* * *

This concludes our assessment of the air quality impacts from this project. If you have any questions or comments, please feel free to contact me at (707) 766-7700 x24. We appreciate the opportunity to assist you.

Sincerely,

James A. Reyff
Project Scientist

*Illingworth & Rodkin*

11-183

# *FAIRFAX GENERAL PLAN UPDATE ENVIRONMENTAL NOISE ASSESSMENT*

*November 16, 2011*

**Prepared for:**

**Sean Kennings**
**LAK Associates, LLC**
**3030 Bridgeway Blvd, Suite 103**
**Sausalito, CA 94965**

**Prepared by:**

**Fred M. Svinth, INCE Assoc. AIA**

***ILLINGWORTH & RODKIN, INC.***
***Acoustics · Air Quality***
**505 Petaluma Boulevard South**
**Petaluma, CA 94952**
**(707) 766-7700**

**Job No.: 11-183**

EXHIBIT # F

## ENVIRONMENTAL SETTING

### BACKGROUND INFORMATION ON NOISE

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable effects of noise can be attributed to either pitch or loudness. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

There are several noise metrics, or scales that are used to describe noise. *A decibel (dB)* is a unit of measurement that indicates the relative amplitude of sound pressure. Zero on the decibel scale is based on the lowest sound level that a healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while an increase of 20 decibels results from 100 times the energy, and a 30 decibel increase results from an energy increase of 1,000 times. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level or dBA.* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called $L_{eq}$. The most common averaging period is hourly, but $L_{eq}$ can describe any series of noise events for a specified duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night and because excessive noise interferes with the ability to sleep, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level, CNEL,* is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level,* $L_{dn}$, is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

## Table 1: Definitions of Acoustical Terms Used in this Report

| Term | Definitions |
|---|---|
| Decibel, dB | A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20. |
| Sound Pressure Level | Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter. |
| Frequency, Hz | The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz. |
| A-Weighted Sound Level, dBA | The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. |
| Equivalent Noise Level, $L_{eq}$ | The average A-weighted noise level during the measurement period. |
| $L_{max}$, $L_{min}$ | The maximum and minimum A-weighted noise level during the measurement period. |
| $L_{01}$, $L_{10}$, $L_{50}$, $L_{90}$ | The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period. |
| Day/Night Noise Level, $L_{dn}$ | The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am. |
| Community Noise Equivalent Level, CNEL | The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am. |
| Ambient Noise Level | The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location. |
| Intrusive | That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level. |

**Table 2: Typical Noise Levels in the Environment**

| Common Outdoor Noise Source | Noise Level (dBA) | Common Indoor Noise Source |
|---|---|---|
| | 120 dBA | |
| Jet fly-over at 300 meters | | Rock concert |
| | 110 dBA | |
| Pile driver at 20 meters | 100 dBA | |
| | | Night club with live music |
| | 90 dBA | |
| Large truck pass by at 15 meters | | |
| | 80 dBA | Noisy restaurant |
| | | Garbage disposal at 1 meter |
| Gas lawn mower at 30 meters | 70 dBA | Vacuum cleaner at 3 meters |
| Commercial/Urban area daytime | | Normal speech at 1 meter |
| Suburban expressway at 90 meters | 60 dBA | |
| Suburban daytime | | Active office environment |
| | 50 dBA | |
| Urban area nighttime | | Quiet office environment |
| | 40 dBA | |
| Suburban nighttime | | |
| Quiet rural areas | 30 dBA | Library |
| | | Quiet bedroom at night |
| Wilderness area | 20 dBA | |
| | 10 dBA | |
| | 0 dBA | Threshold of human hearing |

**Effects of Noise**

*Hearing Loss*

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise, but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard which is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

*Sleep and Speech Interference*

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA $L_{dn}$. Typically, the highest steady traffic noise level during the daytime is about equal to the $L_{dn}$ and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA $L_{dn}$ with open windows and 65-70 dBA $L_{dn}$ if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed; those facing major roadways and freeways typically need special glass windows with Sound Transmission Class ratings greater than 30 STC.

*Annoyance*

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The $L_{dn}$ as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 55 dBA $L_{dn}$. At an $L_{dn}$ of about 60 dBA, approximately 2 percent of the population is highly annoyed. When the $L_{dn}$ increases to 70 dBA, the percentage of the population highly annoyed increases to about 12 percent of the population. Therefore, there is an increase in annoyance due to ground vehicle noise of about 1 percent per dBA between a $L_{dn}$ of 60-70 dBA. Between a $L_{dn}$ of 70-80 dBA, each decibel increase increases the percentage of the population highly annoyed by about 2 percent.

## BACKGROUND INFORMATION ON GROUNDBORNE VIBRATION

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV) and another is the Root Mean Square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. In this section, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous vibration levels produce. The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

**Table 3: Reaction of People and Damage to Buildings for Continuous Vibration Levels**

| Vibration Level, PPV (in/sec) | Human Reaction | Effect on Buildings |
|---|---|---|
| 0.006 to 0.019 | Threshold of perception, Possibility of intrusion | Vibration unlikely to cause damage of any type |
| 0.08 | Vibrations readily perceptible | Recommended upper level of the vibration to which ruins and ancient monuments should be subjected |
| 0.10 | Level at which continuous vibrations begin to annoy people | Virtually no risk of "architectural" damage to normal buildings |
| 0.20 | Vibrations annoying to people in buildings | Threshold at which there is a risk of "architectural" damage to normal dwellings such as plastered walls or ceilings. |
| 0.4 to 0.6 | Vibrations considered unpleasant by people subjected to continuous vibrations | Vibration at this level would cause "architectural" damage and possibly minor structural damage. |

Source: Transportation Related Earthborne Vibrations (Caltrans Experiences), Technical Advisory, Vibration TAV-02-01-R9601, California Department of Transportation, February 20, 2002.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generate the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the peak particle velocity descriptor (PPV) has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels such as people in an urban environment may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

## REGULATORY BACKGROUND

This section describes the relevant guidelines, policies, and standards established by Federal and State Agencies and the City of Fairfax.

### FEDERAL

#### Department of Housing and Urban Development (HUD)

HUD environmental criteria and standards are presented in 24 CFR Part 51. New residential construction qualifying for HUD financing proposed in high noise areas (exceeding 65 dBA DNL) must incorporate noise attenuation features to maintain acceptable interior noise levels. A goal of 45 dBA DNL is set forth for interior noise levels and attenuation requirements are geared toward achieving that goal. It is assumed that with standard construction any building will provide sufficient attenuation to achieve an interior level of 45 dBA DNL or less if the exterior level is 65 dBA DNL or less. Approvals in a "normally unacceptable noise zone" (exceeding 65 decibels but not exceeding 75 decibels) require a minimum of 5 decibels additional noise attenuation for buildings if the day-night average is greater than 65 decibels but does not exceed 70 decibels, or minimum of 10 decibels of additional noise attenuation if the day-night average is greater than 70 decibels but does not exceed 75 decibels.

### STATE OF CALIFORNIA

#### California Noise Insulation Standards

The State of California establishes exterior sound transmission control standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings as set forth in the 2010 California Building Code (Chapter 12, Section 1207.11). Interior noise levels attributable to exterior environmental noise sources shall not exceed 45 dBA DNL in any habitable room. When exterior noise levels (the higher of existing or future) where residential structures are to be located exceed 60 dBA DNL, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit. The General Plan facilitates the implementation of the Building Code noise insulation standards by establishing existing and future noise exposure contours in Fairfax.

**State CEQA Guidelines**

The California Environmental Quality Act (CEQA) guidelines require an evaluation of the significance of potential project noise impacts. Potential noise effects from a project are considered to cause a significant environmental impact if any of the following occur:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
e) For a project located within an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Checklist items (a), (b), (c), and (d) are relevant to the proposed project. The project is not located within two miles of a public airport or in the vicinity of a private airstrip; therefore, checklist items e and f are not carried forward in this analysis.

CEQA does not define what noise level increase would be considered substantial. Typically in high noise environmental (i.e., greater than 60 dBA, $L_{dn}$), an increase by more than 3 dB $L_{dn}$ due to the project would be considered a significant impact. Where the existing noise levels are lower (i.e. less than 60 dBA, $L_{dn}$), a greater than 5 dB, $L_{dn}$ increase would be considered a significant impact.

**TOWN OF FAIRFAX**

**General Plan**

The Current General Plan Noise Element incorporates the following noise and land-use standards, which have guided development in the Town of Fairfax since it was adopted in 1975. These standards are shown in Table 4.

**Table 4: Town of Fairfax Noise Element standards by Land Use**

| | **Outdoor Average Noise Level** | | | **Indoor Average Noise Level** | | |
|---|---|---|---|---|---|---|
| **Land Use** | Daytime, dBA | Nighttime, dBA | *$L_{dn}$[1], dBA* | Daytime, dBA | Nighttime, dBA | *$L_{dn}$[1], dBA* |
| Residential | 65 | 55 | *65* | 45 | 35 | *45* |
| Commercial | 65 | 55 | *65* | 45 | 40 | *48* |
| Office | 65 | 55 | *65* | 45 | 40 | *48* |
| Parks & Open Space | 45 | 45 | *51* | 45 | 40 | *48* |
| Major Roadways: Sir Francis Drake & Bolinas Ave. | Less than 65 dBA at 100 feet from roadway | | | | | |

[1] $L_{dn}$ calculated based on the daytime and nighttime average noise level standards

**Municipal Code**

The Fairfax Noise Control Ordinance is found in Chapter 8.20 of the Health and Safety title of the Town of Fairfax Municipal Code. Section 8.20.050 contains the following exterior noise standards and limits;

(A) *Maximum permissible sound levels by receiving land use.*

(1) The noise standards for the various noise zones as presented in the following table shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

(2) No person shall operate or cause to be operated any source of sound at any location within the incorporated town, or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by the person, which causes the noise level when measured at the complainant's property line to exceed the limits in the table below (see Table 5) for more than seven and one-half minutes in a 15- minute period. Those seven and one-half minutes need not be continuous.

(3) If the measured ambient level differs from that permissible, the allowable noise exposure standard shall be adjusted in five-decibel increments in each category as appropriate to encompass or reflect the ambient noise level.

(4) If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone shall apply.

**Table 5: Exterior Noise Limits (Levels not be exceeded more than 7.5 minutes in any 15-minute period)**

| Noise Zone | Time Period | | Noise Level (dBA) |
|---|---|---|---|
| A (Residential) | Night | 10:00 p.m. - 7:00 a.m. | 40 |
| | Day | 7:00 a.m. - 10:00 p.m. | 50 |
| B (Multiple Dwelling, Residential) | Night | 10:00 p.m. - 7:00 a.m. | 50 |
| | Day | 7:00 a.m. - 10:00 p.m. | 55 |
| C (Commercial) | Night | 10:00 p.m. - 7:00 a.m. | 55 |
| | Day | 7:00 a.m. - 10:00 p.m. | 60 |

(B) *Correction for character of sound.*

(1) In the event the alleged offensive noise, as judged by the Chief of Police or his or her designated representative, contains a steady, audible tone such as a whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech, the standard limits set forth in the table (above) shall be reduced by five decibels.

Section 8.20.060 (C) contains the following noise standards related to Construction/demolition domestic power tools;

(1) The operation of any tools or equipment used in construction or demolition work between weekday hours of 8:00 p.m. and 8:00 a.m. or on weekends or holidays between the hours of 8:00 p.m. and 9:00 a.m., such that the sound there from creates a noise disturbance across a residential or commercial real property line, is prohibited.

(2) Operating or permitting the operation of any mechanically powered saw, sander, drill, grinder, lawn or garden tool or similar tool between 8:00 p.m. and 8:00 a.m. or on weekends or holidays between the hours of 8:00 p.m. and 9:00 a.m., so as to create a noise disturbance across a residential or commercial real property line, is prohibited.

Section 8.20.070 (D) contains the following exemptions for construction or demolition work;

The operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work, mechanically powered saw, sander, drill, grinder, lawn or garden tool, leaf blower, or similar tool between 8:00 a.m. and 8:00 p.m. on weekdays and 9:00 a.m. and 8:00 p.m. on weekends are exempt.

## EXISTING NOISE CONDITIONS

Existing noise levels in the City are summarized below. Additional detail on the noise monitoring survey can be found in I&R's report titled, *Noise Technical Report Supporting the Update of the Town of Fairfax Noise Element* (June 2009).

The primary source of environmental noise within the Town of Fairfax is produced roadway traffic, with commercial activities in the Town Center area also contributing to the noise environment. To assist in the General Plan update process, ambient noise monitoring was conducted at a variety of land uses near noise sources in the Town. Short and long-term (24-hour) noise measurements were taken adjacent to major roadways and commercial noise sources. Additional long-term (24-hour) noise measurements were taken near rail activity where other major noise sources could be excluded to the extent possible. Monitored noise data were used to identify noise levels at varying distances from the Town's major noise sources. Noise exposure contours were calculated using a traffic noise model developed by the Federal Highway Administration and the California Department of Transportation that is incorporated into SoundPLAN, a three-dimensional ray-tracing computer model. The traffic noise model was calibrated using the actual measured noise levels in Fairfax. Noise exposure is presented in terms of the $L_{dn}$ noise metric. The results of the traffic noise modeling are shown on the noise exposure contour map in Figure 1.

### *Vehicular Traffic*

Roadway traffic is one of the more prevalent sources of noise in the City. Traffic noise at a particular location depends on the traffic volume on the roadway, the average vehicle speed, the distance between the receptor and the roadway, the presence of intervening barriers or structures between source and receiver, and the ratio of trucks (particularly heavy trucks) and buses to automobiles. Table 6 summarizes existing $L_{dn}$ traffic noise levels along major City roadways at a distance of 50 feet from the centerline of the roadways.

A number of factors control how traffic noise levels affect nearby sensitive land uses. These include roadway elevation compared to the surrounding grade; any structures or terrain intervening between the roadway and the sensitive receptors; and the distance between the roadway and receptors. Because of the higher traffic volumes on arterial roadways in the area, Sir Francis Drake Boulevard, Broadway Boulevard, Center Boulevard, and Bolinas Road constitute the loudest roadway noise sources in the City. Commercial uses are primarily located along these roadways in the Town Center area, however there are residences located along them outside of the Town Center area.

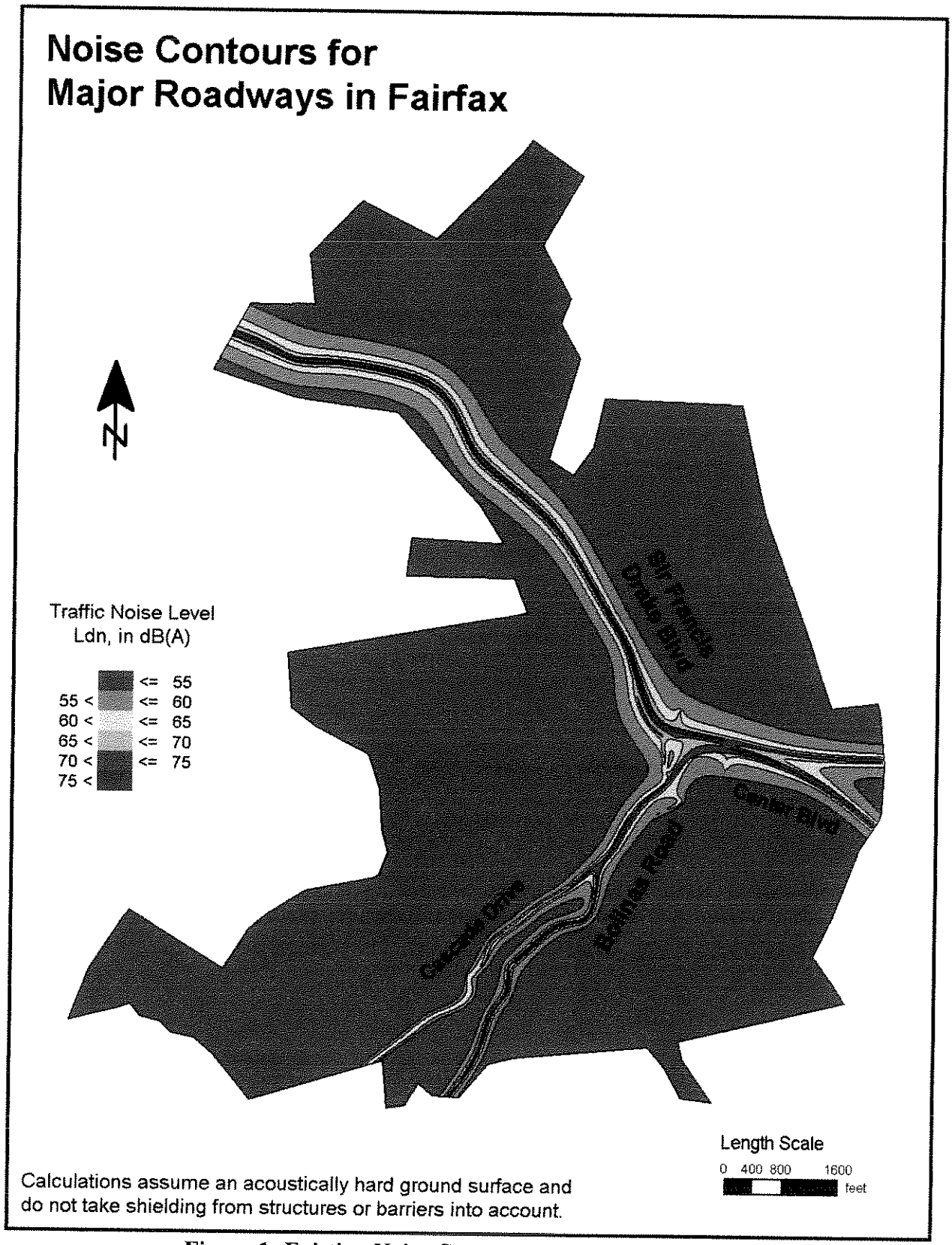



**Figure 1: Existing Noise Contours for Major Roadways**

**Table 6: Existing Ldn Levels at 50ft from Major Roadways**

| Roadway - Segment | Ldn @ 50 feet (dBA) |
|---|---|
| Sir Francis Drake Blvd. near Oak Manor Drive | 68 |
| Sir Francis Drake Blvd. near Oak Tree Lane | 66 |
| Sir Francis Drake Blvd. west of Clause Drive | 69 |
| Sir Francis Drake Blvd. east of Clause Drive | 67 |
| Sir Francis Drake Blvd. east of Pacheco Avenue | 64 |
| Broadway Blvd. west of Bolinas Road | 64 |
| Broadway Blvd. east of Bolinas Road | 65 |
| Center Blvd. east of Pacheco | 64 |
| Bolinas Road south of Broadway | 64 |
| Bolinas Road north of Cascade Drive | 64 |
| Bolinas Road south of Cascade Drive | 60 |
| Cascade Drive south of Bolinas Road | 60 |
| Cascade Drive south of Laurel Drive | 56 |

***Construction Noise***

Construction can be another significant, although typically short-term, source of noise. Construction is typically of most concern when it takes place near sensitive land uses, or occurs at night or in early morning hours. The dominant construction equipment noise source is usually diesel engines of heavy construction equipment. In a few cases, however, such as impact pile driving or pavement breaking, "process noise" related to specific activities dominates. Stationary equipment operates in one location for one or more days at a time, with either a continuous operation (e.g., pumps, generators, compressors) or a variable operation (pile drivers, pavement breakers). Mobile equipment moves around the construction site with power applied in cyclic fashion (e.g., bulldozers, loaders) or to and from the site (i.e., trucks). Construction-related noise levels generally fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of barriers between the noise source and receptor.

***Other Noise Sources***

Other existing sources of noise include noise from commercial, recreational, and school uses. Noise sources associated with commercial uses include mechanical equipment, as well as activities associated with parking lots and loading docks. Mechanical equipment is used extensively in buildings to provide heating, cooling, air circulation and water supply. Mechanical equipment that produces noise includes motors, pumps and fans. Although noise levels are generally low from these sources at nearby properties, such sources may operate continuously and may include pure tones that make them audible and sources of annoyance at a substantial distance.

Noise generating activities associated with schools include children at play, bells, and public address systems. High schools may include stadiums for day and evening athletic events, and public address/loudspeaker systems.

Intermittent or temporary noise sources include portable power equipment such as leaf blowers, lawn mowers, portable generators, electric saws and drills, and other similar equipment. Although these noise sources are typically short in duration, they are often loud and can be major sources of annoyance.

## NOISE IMPACTS AND MITIGATION MEASURES

### *Significance Criteria*

As discussed in the Regulatory Background section of this report Appendix G of the CEQA Guidelines states that a project would normally be considered to have a significant impact with respect to noise if implementation of the Plan would result in:

1) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
3) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. A substantial increase would occur if noise levels with the project would be 3 dBA $L_{dn}$ or greater above existing conditions;
4) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

As previously noted, the project is not located within two miles of a public airport or in the vicinity of a private airstrip; therefore, checklist items related to aircraft noise are not considered in this analysis.

## IMPACT DISCUSSIONS

**Impact 1a:** **Noise and Land Use Compatibility.** Existing and future noise levels at the locations of proposed noise sensitive developments allowed for under the General Plan could exceed the Town's noise thresholds of acceptability. **This is a less-than-significant impact with the implementation of the Proposed General Plan Noise Element Goals and Policies.**

Under the General Plan, new noise-sensitive uses may be developed in noisy areas such as major roadway corridors (e.g., Sir Francis Drake Boulevard, Broadway Boulevard, Center Boulevard, and Bolinas Road). Single-family residential development, schools, libraries, hospitals, convalescent homes, and places of worship are considered the most noise-sensitive land uses. Residential development is sensitive to community noise both outdoors and indoors during the daytime and nighttime. High-density/mixed-use residential, commercial, and industrial development is less noise sensitive because uses are primarily indoors, and noise levels are mitigated with building design and construction. Noise exposures along major roadways could exceed "normally acceptable" levels for these uses.

Where exterior noise levels exceed 60 dBA $L_{dn}$ in new residential development areas, interior levels may exceed 45 dBA $L_{dn}$. Interior noise levels are about 15 dBA lower than exterior levels within residential units with the windows partially open and approximately 20-25 decibels lower than exterior noise levels with the windows closed, assuming typical California construction methods. Where exterior day-night average noise levels are 60 to 70 dBA $L_{dn}$, interior noise levels can typically be maintained below 45 dBA $L_{dn}$ with the incorporation of an adequate forced air mechanical ventilation system in the residential units to allow residents the option of controlling noise by keeping the windows closed. In areas exceeding 70 dBA $L_{dn}$, the inclusion of windows and doors with high Sound Transmission Class (STC) ratings, and the incorporation of forced-air mechanical ventilation systems, may be necessary to meet 45 dBA $L_{dn}$.

General Plan Policies N-1.1.1 through N-1.1.6 would require;

- That all new development to an analysis of potential noise impacts (N-1.1.1),
- That the Town to maintain a feasible pattern of land uses separating noise sensitive land uses from major traffic noises (N-1.1.2),
- The incorporation of effective mitigation measures into the project design to reduce noise levels in outdoor activity areas at new noise-sensitive developments to 60 dBA $L_{dn}$ or less (N-1.1.3),
- Interior noise levels to be limited to 45 $L_{dn}$ within all new residential units (N-1.1.4), and
- That new development of noise-sensitive land uses shall either not be allowed in areas where noise due to non-transportation noise sources will exceed noise ordinance standards (N-1.1.5), or noise mitigation per an acoustical analysis will be included in the design to reduce noise levels to within noise ordinance standards (N-1.1.6).

The implementation of these Noise Element policies would reduce potential impacts associated with noise and land use compatibility to a ***less-than-significant*** level.

**Mitigation 1a: No Additional Measures Required**

**Impact 1b:** **New Noise-Producing Land Uses.** New noise-producing land uses could generate noise levels that would exceed the City's noise thresholds of acceptability or Municipal Code noise limits at sensitive receivers in the vicinity. **This is a less-than-significant impact with the implementation of the Proposed General Plan Noise Element Goals and Policies.**

Mixed-use development projects often include residential uses located above or in proximity to commercial uses, and are located in areas served by rail and bus transit along major roadways and the railroad corridor. Under the General Plan, mixed-use residential development is proposed would be encouraged in the Town Center and along major roadway corridors. Also, new office, commercial, retail, or other noise-generating uses developed under the General Plan could substantially increase noise levels at noise-sensitive land uses or could expose receivers to noise levels that exceed the City's Municipal Code noise limits.

Future operations at existing and proposed noise-producing land uses are dependent on many variables and information is unavailable to allow meaningful projections of noise. Noise conflicts may be caused by noise sources such as outdoor dining areas or bars, mechanical equipment, outdoor maintenance areas, truck loading docks and delivery activities, public address systems, and parking lots. Development under the proposed General Plan would introduce new noise-generating sources adjacent to existing noise-sensitive areas and new noise-sensitive uses adjacent to existing noise sources.

Draft General Plan Policies N-1.1.6 and N-3.1.2 require acoustical analyses as a part of project review or as part of the environmental review process so that noise mitigation may be included in the project design where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior non-transportation noise levels exceeding the Noise Ordinance limits (N-1.1.6) and where noise created by new non-transportation noise sources are likely to produce noise levels exceeding the standards (N-3.1.2). With the implementation of these policies, the impact resulting from the generation of noise in excess of standards due to new noise-producing land uses would be considered ***less than significant***.

**Mitigation 1b: No Additional Measures Required**

**Impact 2:** **Exposure to Groundborne Noise and Vibration.** Structures in the vicinity of new development allowed in the General Plan Area could be exposed to construction-related vibration during the excavation and foundation work associated with these projects. Depending on the project design and conditions these structures may be exposed to perceptible or damaging vibration levels from construction activities. **This is a less-than-significant impact with the incorporation of mitigation.**

Construction of projects under the General Plan may be located adjacent to existing structures. Construction activities may include demolition of existing structures, site preparation work, excavation of below grade levels, foundation work, and framing. Demolition for an individual site may last several weeks to months and at times may produce substantial vibration. Excavation for underground levels may also occur on some project sites and vibratory pile driving could be used to stabilize the walls of the excavated area. Piles or drilled caissons may also be used to support building foundations.

Pile driving has the potential to generate the highest ground vibration levels and is of primary concern to structural damage, particularly when it occurs within 100 feet of structures. Vibration levels generated by pile driving activities would vary depending on project conditions such as soil conditions, construction methods, and equipment used. Other project construction activities, such as caisson drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may also potentially generate substantial vibration in the immediate vicinity. Erection of building structures themselves is not anticipated to be a source of substantial vibration.

Past studies have established a peak vertical particle velocity of 0.20 inches/sec, ppv as the limit where vibration would begin to annoy people in buildings and at which there is a risk of cosmetic damage to normal dwellings (see Table 3). Vibration levels generated by construction activities would vary depending on project conditions, such as soil types, construction methods, and equipment used. As with any type of construction, vibration levels may at times be perceptible. However, construction phases that have the highest potential of producing vibration (pile driving, jackhammers and other high power tools) would typically be intermittent and would be expected to occur for short periods of time for any individual project site. With incorporation of mitigation, this impact may be reduced to a ***less-than-significant*** level.

**Mitigation 2:**

a) Avoid impact pile driving where possible. Drilled piles cause lower vibration levels where geological conditions permit their use.

b) Avoid using vibratory rollers and tampers near sensitive areas.

c) In areas where project construction is anticipated to include vibration-generating activities, such as pile driving, in close proximity to existing structures, site-specific vibration studies shall be conducted to determine the area of impact and to present appropriate mitigation measures that may include the following:

1. Identification of sites that would include vibration compaction activities such as pile driving and have the potential to generate groundborne vibration, and the sensitivity of nearby structures to groundborne vibration. Vibration limits should be applied to all vibration-sensitive structures located within 200 feet of the project. This task should be conducted by a qualified structural engineer.
2. Development of a vibration monitoring and construction contingency plan to identify structures where monitoring would be conducted, set up a vibration monitoring schedule, define structure-specific vibration limits, and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions. Construction contingencies would be identified for when vibration levels approached the limits.
3. At a minimum, vibration monitoring should be conducted during initial demolition activities and during pile driving activities. Monitoring results may indicate the need for more or less intensive measurements.
4. When vibration levels approach limits, suspend construction and implement contingencies to either lower vibration levels or secure the affected structures.
5. Conduct post-survey on structures where either monitoring has indicated high levels or complaints of damage has been made. Make appropriate repairs or compensation where damage has occurred as a result of construction activities.

**Impact 3:** **Traffic Noise Increases.** The anticipated increase in vehicular traffic due to General Plan implementation would not substantially increase traffic noise levels along area roadways. **This is a less-than-significant impact.**

Traffic noise modeling based on approved project trips and a growth rate factor on Town roadways using future land use and development patterns consistent with the Draft General Plan indicates that traffic noise levels are projected to increase by less than one dBA $L_{dn}$ along all roadways within the Town with the exception of Sir Francis Drake Boulevard, where noise levels could increase by less than three dBA $L_{dn}$. Under CEQA a noise increase by more than 3 dB $L_{dn}$ due a project in a noise environment greater than 60 dBA, $L_{dn}$ is typically considered a significant impact. Draft General Plan Policy N-1.1, Program N-3.1.1.1 contains a provision that noise-generating projects which cause the $L_{dn}$ at noise-sensitive uses to increase by 3 dBA or more and exceed the "normally acceptable" level, would require an acoustical analysis. Draft General Plan Program N-2.1.1.1 also calls for the use of quiet pavement techniques when resurfacing roadways. With the implementation of these policies, and considering that the expected noise level increases under expected General Plan development would be less than the CEQA significance standard, the impact resulting from increased vehicular traffic on Town roadways would be considered ***less than significant***.

**Mitigation 3: No Additional Measures Required**

**Impact 4:** **Substantial temporary or periodic noise increases.** Noise produced during the construction of the new development allowed in the General Plan Area could cause a temporary or periodic increase in noise exposure above ambient levels. **This is a less-than-significant impact with the implementation of the Proposed General Plan Noise Element Goals and Policies.**

The proposed General Plan would facilitate the construction of new projects within the Planning Area. Residences and businesses located adjacent to the proposed development sites would be affected at times by construction noise. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction durations last over extended periods of time.

Major noise-generating construction activities associated with new projects could include removal of existing pavement and structures, site grading and excavation, the installation of utilities, the construction of building cores and shells, paving, and landscaping. The highest construction noise levels would be generated during grading and excavation because of the use of heavy equipment, with lower noise levels occurring during building construction activities when activities move indoors and less heavy equipment is required. Construction equipment would typically include, but would not be limited to, earth-moving equipment and trucks, pile driving rigs, mobile cranes, compressors, pumps, generators, paving equipment, and pneumatic, hydraulic, and electric tools. Table 7 presents the typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet.

**Table 7 Typical Ranges of Noise Levels at 50 Feet from Construction Sites (dBA $L_{eq}$)**

| | Domestic Housing | | Office Building, Hotel, Hospital, School, Public Works | | Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station | | Public Works Roads & Highways, Sewers, and Trenches | |
|---|---|---|---|---|---|---|---|---|
| | I | II | I | II | I | II | I | II |
| Ground Clearing | 83 | 83 | 84 | 84 | 84 | 83 | 84 | 84 |
| Excavation | 88 | 75 | 89 | 79 | 89 | 71 | 88 | 78 |
| Foundations | 81 | 81 | 78 | 78 | 77 | 77 | 88 | 88 |
| Erection | 81 | 65 | 87 | 75 | 84 | 72 | 79 | 78 |
| Finishing | 88 | 72 | 89 | 75 | 89 | 74 | 84 | 84 |

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.
*Source: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.*

Hourly average noise levels generated by demolition and construction are about 77 dBA to 89 dBA $L_{eq}$ measured at a distance of 50 feet from the center of a busy construction site. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA $L_{max}$ at a distance of 50 feet. Typical hourly average construction-generated noise levels are about 81 to 89 dBA $L_{eq}$ measured at a distance of 50 feet from the site during busy construction periods. During each stage of development, there would be a different mix of equipment operating and noise levels would vary based on the amount of equipment in operation and the location of the activity. These noise levels drop off at a rate of about 6 dBA

per doubling of distance between the noise source and receptor. Intervening structures or terrain would result in lower noise levels.

General Plan Goal N-3 concludes that if project construction is expected to take less than 18 months and work would be done following standard construction controls as given in Goal N-3.a-h (see below), then the project would be found to cause a less-than significant impact. Goal N-3 also finds that if project is construction activities last beyond 18 months, or occur outside of allowable time periods per Goal N-3.a, then the project would be found to cause a potentially significant impact and would be subject to environmental review under CEQA. The implementation of General Plan Goal N-3 and included standard controls would reduce potential impacts associated with noise and land use compatibility to a ***less-than-significant*** level.

Noise Element Goal N-3 standard construction controls:

a. Limit construction to the hours of 8:00 a.m. to 5:00 p.m. on weekdays, and 9:00 a.m. to 5:00 p.m. on Saturdays, with no noise-generating construction on Sundays or holidays.

b. Control noise from construction workers' radios to the point where they are not audible at existing residences that border the Project site.

c. Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment.

d. Utilize quiet models of air compressors and other stationary noise sources where technology exists.

e. Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.

f. Prohibit unnecessary idling of internal combustion engines.

g. Notify residents adjacent to the Project site of the construction schedule in writing.

h. Designate a noise disturbance coordinator who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaints (e.g., starting too early, bad muffler) and institute reasonable measures warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site.

**Mitigation 4: No Additional Measures Required**

# Comment Letters and Responses

EXHIBIT # G

COUNTY OF MARIN

# DEPARTMENT OF PUBLIC WORKS

People serving people.

Robert Beaumont
DIRECTOR

Administration
PO Box 4186
San Rafael, CA 94913-4186
415 473 6528 T
415 473 3799 F
415 473 3232 TTY
CRS Dial 711
www.marincounty.org/pw

Accounting

Airport

Building Maintenance

Capital Projects

Certified Unified Program Agency (CUPA)

Communications Maintenance

County Garage

Disability Access

Engineering & Survey

Flood Control & Water Resources

Land Development

Purchasing

Real Estate

Reprographic Services

Road Maintenance

Stormwater Program

Transportation & Traffic Operations

Waste Management

March 28, 2012

Town of Fairfax
Department of Planning and Building Services
Attention: Linda Neal
142 Bolinas Road
Fairfax, CA 94930
lneal@townoffairfax.org

**Subject: Review of Final Draft of the 2010 General Plan and Mitigated Negative Declaration (IS/MND)**

Dear Sirs,

We would like to thank you for the opportunity to review and comment on the Final Draft of the 2010 General Plan and Mitigated Negative Declaration (IS/MND) for the Town of Fairfax. We recognize that the General Plan is within Town of Fairfax jurisdiction, however as requested please find Marin County Department of Public Works' comments below:

Comments from Traffic Division:

1. The San Rafael-Fairfax Corridor Study was completed in March 2010 and we recommend noting this under Circulation Element Section, Page C-27, Program C-1.5.1
2. The Circulation Element makes reference to the future preparation of a circulation implementation strategy as part of a future town center plan. We request that the City coordinate with the County during the preparation of the future circulation implementation strategy so as to minimize any potential impacts to Sir Francis Drake Boulevard.

Comments from Marin County Flood Control and Water Conservation Division:

3. In general, the proper name of flood control division is Marin County Flood Control and Water Conservation District Flood Zone 9.

4. Under Safety Element Section, Page S-22, Program S-2.1.8.1 "Develop a project plan to enlarge the Sherman Avenue culvert. If proven feasible, and cost effective, seek funds for implementation. Responsibility: Public Works Department, Ross Valley Watershed Program. Schedule: Year Two."

*COMMENT*: We do not envision this project happening in the first 10 years of our program, i.e., only after 2022-2023 will this be considered by the watershed program.

5. Under Safety Element Section, Page S-22, Program S-2.1.1.2 "Complete the hydrologic study of Fairfax Creek as identified by the Ross Valley Watershed Project following the December 31, 2005 floods. Responsibility: Public Works Department, Ross Valley Watershed Program Schedule: Year One"

   *COMMENT*: We have completed the H&H study for Ross Valley and do not envision doing another hydrologic study of Fairfax Creek.

6. Under Conservation Element Section, Page CON-18, Program CON-3.1.1.1: Work with the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) to develop maintenance guidelines for creek and wetland areas to reduce flooding, sedimentation, and erosion while maintaining and enhancing riparian vegetation and wildlife."

   *COMMENT*: This is not the purview of MCSTOPPP.

7. Under Conservation Element Section, Page CON-18, Program CON-3.1.1.5: "Participate in Flood Zone 9 programs."

   *COMMENT*: Should read "Participate in Marin County Flood Control and Water Conservation District Flood Zone 9 programs"

8. Under Safety Element Section, Page S-17 states "Following the December 31, 2005 flood, Fairfax rejoined Flood Control District 9. Jointly with the Ross Valley Watershed Program, the Town of Fairfax is coordinating with other communities…"

   *COMMENT*: The above should read "Marin County Flood Control and Water Conservation District Flood Zone 9".

9. Under Safety Element Section, Page S-21, Program S-2.1.7.1: "Continue to participate in Flood Control District 9."

   *COMMENT*: The above should read "Marin County Flood Control and Water Conservation District Flood Zone 9".

10. Under Safety Element Section, Page S-22, Program S-2.1.8.2: "Analyze potential upstream flood retention basins that could reduce or delay flooding in Fairfax Creek."

    *COMMENT*: "retention" should be "detention"

Comments from Marin County Stormwater Pollution Prevent Program.

11. Page GL-7: This page provides a definition of MCSTOPPP. MCSTOPPP assists the Town of Fairfax with compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit containing Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (Phase II General Permit). The Phase II General Permit requires the Town of Fairfax to report annually on Phase II General Permit compliance. MCSTOPPP assists with this task by compiling a countywide annual report that is submitted on behalf of all Marin municipalities to the Regional Water Quality Control Board. MCSTOPPP also provides compliance training opportunities and prepares and updates required stormwater management plans on behalf of Marin's municipalities.

12. Under Conservation Element Section, Page CON-23, Program CON-4.2.2.3: "Modify existing ordinances to require no net increase in storm water runoff with new development and remodels of 50 percent or greater."

    *COMMENT*: consider adding "and according to requirements of current National Pollutant Discharge Elimination System (NPDES) Phase II General Permit issued by the State Water Resources Control Board or applicable NPDES municipal stormwater permit in effect."

13. Under Safety Element Section, Page S-19, Policy S-2.1.3.

    COMMENT Consider adding a Program that indicates that the Town will update the existing urban runoff pollution prevention ordinance in order to comply with changes expected in the re-issued Phase II General Permit in 2012. Also, consider adding the following language to the Program under this Policy as <u>suggested by undelining</u> below:

    Page S-20, Program S-2.1.5.1: Repair damaged culverts, drains, and bridges to withstand future flooding <u>and obtain and comply with required regulatory agency permits</u> and incorporate streambank erosion <u>protection</u> and fish passage solutions.

14. Under Safety Element Section, Page S-21, Program S-2.1.5.6.

    COMMENT: Consider adding the following language:

    Keep storm drains and creeks free of obstructions to allow for free flow of water, while retaining vegetation in the channel (as appropriate for habitat preservation <u>and stormwater pollution prevention and</u> in compliance with State and Federal requirements).

15. Under Conservation Element Section, Page CON-23, Policy CON-4.2.2.

    *COMMENT*: Since this Policy is under the Objective "Protect Natural Water Quality", consider adding text about the Phase II General Permit. This permit will be re-issued in 2012 and will include substantial changes. MCSTOPPP will work with Marin's municipalities to update their Stormwater Management Plans (the plans are currently compiled together into "MCSTOPPP Action Plan 2010"). The Stomwater Management Plan update will be required by the updated NPDES Phase II General Permit.

16. Under Conservation Element Section, Page CON-24, Policy CON-4.2.3.

    *COMMENT*: Consider referring to a program implemented by MCSTOPPP throughout Marin known as the Our Water Our World program. Two businesses in Fairfax participate in this program (http://ourwaterourworld.org/QuickLinks/StoreLocator.aspx) and MCSTOPPP uses staff and consultants to provide employee trainings and keep these stores stocked with point-of-sale information on least toxic alternatives to pesticides.

    Comments from MCSTOPPP on Final Draft of the Fairfax 2010 General Plan – Appendices

17. Page 2 – Under Regional Water Quality Control Board, consider stating that the Town is covered by the National Pollutant Discharge Elimination System General Permit containing Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (Phase II General Permit). This permit is actually issued by the State Water Resources Control Board and RWQCB staff provide oversight and work with Marin's municipalities to ensure that they are in compliance.

Feel free to contact me at (415) 473-4398 if you have any questions.

Sincerely,

Michel Jeremias

Michel Jeremias, PE
Interim Senior Civil Engineer

c: Terri Fashing, Stormwater Program Administrator, MCSTOPPP
Jack Curley, Capital Planning and Project Manager, MCFCWCD
Eric Steger, Assistant Director
Rachel Warner, Interim Environmental Coordinator, CDA

LAK ASSOCIATES, LLC
3030 Bridgeway, Ste 103, Sausalito, CA 94965
tel: (415) 331 - 4551 fax: (415) 331-4573 info@lakassoc.com

March 30, 2012

Michele Jeremias, PE
Interim Senior Civil Engineer
County of Marin
Department of Public Works
3501 Civic Center Drive, Room 304
San Rafael, CA 94913-4186

Subject: **Fairfax General Plan and Mitigated Negative Declaration**

Dear Michele,

Thanks you for your comments regarding the Final Draft 2010 Fairfax General Plan and Mitigated Negative Declaration. Your thoroughness and attention to details is greatly appreciated.

The comments from the Traffic Division, Marin County Flood Control and Water Conservation Division, and the Marin County Stormwater Pollution Prevention Program have been incorporated into the Final Draft General Plan by way of Errata Sheet 2.

The Town looks forward to working with the County to implement the programs listed in the 2010 General Plan.

Sincerely,

Larry Kennings
Planning Consultant

FEDERATED INDIANS OF GRATON RANCHERIA

**Sacred Sites Protection Committee**
**6400 Redwood Drive, Suite 300**
**Rohnert Park, CA 94928**
**707- 566-2288**

March 22, 2012

RECEIVED
MAR 23 2012
TOWN OF FAIRFAX

James M. Moore
Director of Planning & Building Services
Town of Fairfax
142 Bolinas Road
Fairfax, CA 94930

Dear Jim:

The Federated Indians of Graton Rancheria, a federally recognized Tribe and sovereign government, has received your request for comments under SB 18 during the 30 day CEQA public review period, pursuant to Public Resources Code (CEQA) Section 21091 (B), regarding the Town of Fairfax 2010-2030 General Plan. We appreciate your desire to provide a mechanism in the General Plan to protect the cultural resources of the Tribe.

We have reviewed the proposed language in the Cultural Resources Section of the Initial Study and the Conservation Element of the General Plan. It captures the procedures you have used for current projects in Fairfax and we believe it will work well for your Town and for the Tribe in the future.

We concur with the Initial Study and Mitigated Negative Declaration for your General Plan.

Respectfully,

Nick Tipon
Sacred Sites Protection Committee

## Jim Moore

**From:** Jim Moore
**Sent:** Thursday, March 22, 2012 9:09 AM
**To:** 'ntipon@comcast.net'
**Subject:** FW: General Plan
**Attachments:** Fairfax GP.doc

Hi Nick,

Thank you very much for the timely response.

Looking forward to having lunch soon; please let me know when!

Best Regards,

Jim

James M. Moore
Director of Planning & Building Services
Town of Fairfax
142 Bolinas Road
Fairfax, CA 94930
Phone: (415) 453-1584
Fax: (415) 453-1618

***"The Life of the Land is Perpetuated in Righteousness"***
(*Ua mau ke ea o ka aina i ka pono* has been the motto of Hawaii for over 160 years)

**From:** Nick Tipon [mailto:ntipon@comcast.net]
**Sent:** Thursday, March 22, 2012 7:48 AM
**To:** Jim Moore
**Subject:** General Plan

Jim:
A hard copy is in the mail to you.
Best,
Nick

**RESOLUTION NO. 12-22**

**A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF FAIRFAX APPROVING THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION, ADOPTING FINDINGS REGARDING ENVIRONMENTAL EFFECTS AND A MITIGATION MONITORING AND REPORTING PROGRAM, FOR THE FAIRFAX 2010-30 GENERAL PLAN, and ADOPTING THE FAIRFAX 2010-30 GENERAL PLAN**

WHEREAS, the Town of Fairfax has prepared an Initial Study and Mitigated Negative Declaration for the Fairfax 2010-30 General Plan (the "Project"), in compliance with the California Environmental Quality Act ("CEQA") (Pub. Resources Code Section 21000 *et seq.*), the CEQA Guidelines (14 CCR Section 15000 *et seq.*, the "Guidelines"), and the local procedures adopted by the Town pursuant thereto;

WHEREAS, the Town is required, pursuant to CEQA, to adopt all feasible mitigation measures or feasible project alternatives that can substantially lessen or avoid any significant effects on the environment associated with a project to be approved; and

WHEREAS, the Fairfax 2010-30 General Plan was drafted with the intent that it contain policies and actions that, as development occurs under the Plan, will minimize to the greatest extent possible the impacts of such development; and

WHEREAS, the Town provided for review of the Initial Study and the Mitigated Negative Declaration by the public and other public agencies as required by the Guidelines by publishing the Draft Initial Study, Mitigated Negative Declaration and Mitigation Monitoring Plan on February 23, 2012, which public review period ended March 23, 2012; and

WHEREAS, the Town Council held a public hearing on the Initial Study, Mitigated negative Declaration and Mitigation Monitoring Plan on April 4, 2012; and

WHEREAS, the Town Council has reviewed and considered the information and analysis contained in the Initial Study and Mitigated Negative Declaration and exercised its independent judgment in evaluating the effects on the environment that would be caused by the Project; and

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF FAIRFAX AS FOLLOWS:

**SECTION 1.** The Town Council hereby finds and determines, in its independent judgment after considering all relevant evidence in the record of proceedings for the Project, including without limitation the information set forth in the Initial Study, Mitigated Negative Declaration, the Initial Study, the staff report, and the comments submitted and testimony heard at the hearing on April 4, that there is no substantial evidence supporting a fair argument that the Project may actually produce any significant environmental impacts that cannot be mitigated to a less than significant level through implementation of those mitigation measures identified in the Mitigated Negative Declaration and Mitigation and Monitoring Plan, and therefore, the Town Council finds and determines that the Project will not have a significant environmental effect; and

SECTION 2. The Town Council hereby adopts the Fairfax General Plan 2010-30 referenced in Exhibits A and B of the staff report for this item, the Initial Study, Mitigated Negative Declaration and Mitigation and Monitoring Plan referenced in Exhibit C; and

EXHIBIT # H

SECTION 3. The Town hereby also adopts the Additional Findings of Fact attached as Attachment 1 to this Resolution; and

SECTION 4. The Town Council hereby directs the Town Manager to prepare a Notice of Determination, to file that Notice with the County Clerk in accordance with the Guidelines within five (5) days of the adoption of this Resolution; and

SECTION 5. The Town Manager is hereby authorized and directed to do any and all things, and to execute and deliver any and all documents which he may deem necessary or advisable, in order to effectuate the purposes of this Resolution.

The foregoing Resolution was duly passed and adopted at a Regular Meeting of the Town Council of the Town of Fairfax held in said Town on the 4th day of April, 2012 by the following vote, to wit:

AYES:

NOES:

ABSENT:

MAYOR Pam Hartwell-Herrero

Attest:

## Attachment 1: Additional Findings of Fact

In accordance with the Town of Fairfax' policies regarding implementation of the California Environmental Quality Act (Public Resources Code §21000 et seq.) and the CEQA Guidelines, the Town of Fairfax has conducted an Initial Study to determine whether implementation of the above described 2010-2030 Town of Fairfax General Plan may have a significant effect on the environment. On the basis of that study, the Town hereby finds:

The project will not have significant environmental impacts for the following reasons:

1. Implementation of the General Plan will have no adverse effect on the Town's scenic resources.

2. Implementation of the General Plan will have no adverse effect on agricultural resources.

3. Implementation of the General Plan with recommended mitigations will not result in a significant adverse impact. Implementation of the General Plan will be compatible with the Bay Area Air Quality Management District plan.

4. Implementation of the General Plan will have no substantial adverse effect on sensitive biological resources.

5. Implementation of the General Plan will not cause a substantial adverse effect on cultural or historical resources.

6. Implementation of the General Plan with the recommended mitigation measures will not expose people to substantial adverse geological events or affect the Town's soils.

7. Implementation of the General Plan will not create a significant hazard to the public or the environment as may be caused by hazardous materials or hazardous conditions or facilities.

8. Implementation of the General Plan will not degrade or deplete water resources.

9. Implementation of the General Plan will not cause a substantial adverse effect on land use planning or land use policies.

10. Implementation of the General Plan will not cause a substantial adverse effect on the Town's mineral resources.

11. Implementation of the General Plan with the recommended mitigation measures will not result in any substantial noise impacts.

12. Implementation of the General Plan will not cause a substantial adverse effect on population or housing.

13. Implementation of the General Plan will not cause a substantial adverse effect on public services.

14. Implementation of the General Plan will not cause a substantial adverse effect on the Town's recreation resources.

15. Implementation of the General Plan with recommended mitigations will not result in a significant adverse impact to the Town's transportation services or traffic load. The existing roadways and intersections have adequate capacity to meet the standards established by the Town.

16. Implementation of the General Plan will not cause a substantial adverse effect on the Town's utilities or services.