



**Draft for Planning Commission review
on August 22, 2011**

Council Date: September 13, 2011

Subject: **2011-7170: Major Moffett Park Design Review** for modification of Building 'D' at the Moffett Towers campus (net increase of about 125,000 s.f.). Project includes Green Building LEED Gold incentive resulting in 80% Floor Area Ratio, and requires modification to the existing development agreement (Planning Application 2011-7507).

Location: **1100-1180 Enterprise Way** (APN: 110-57-001 through 006).

**Applicant/
Owner:** Jay Paul Company / Moffett Towers Lot 3 LLC.

REPORT IN BRIEF:

**Existing Site
Conditions** Moffett Towers Campus (Lot 3): three, 8-story office buildings, parking structure, and a 43,565 sf. amenity building.

Surrounding Land Uses

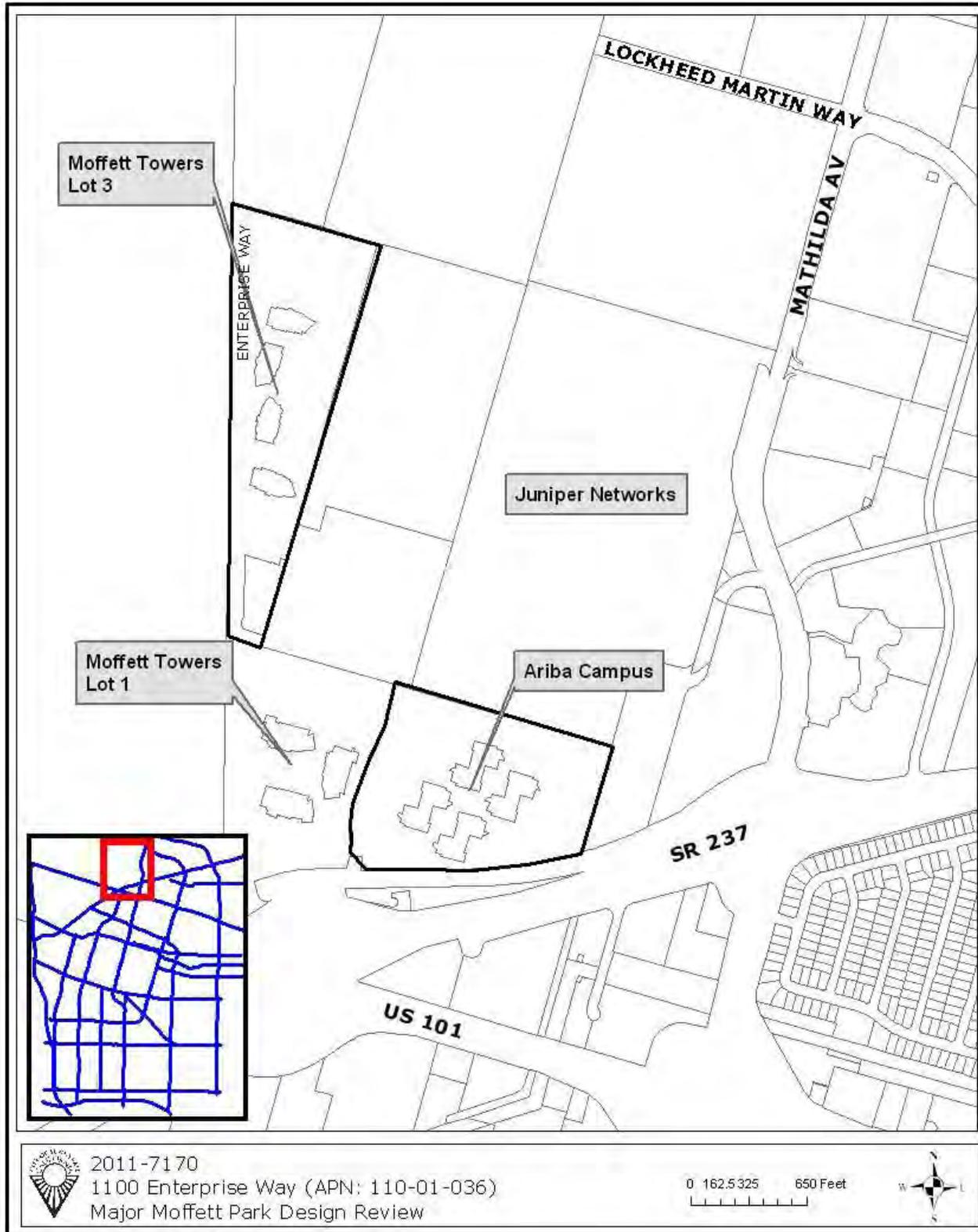
North	Industrial (Lockheed Martin Missiles and Space)
South	Moffett Towers Lot 1 and Technology Corners Campus
East	Industrial (Lockheed Martin Missiles and Space)
West	Moffett Federal Airfield

Issues Floor Area, Building Height, Traffic, Air Quality

**Environmental
Status** A Mitigated Negative Declaration has been prepared in compliance with California Environmental Quality Act provisions and City Guidelines.

**Staff
Recommendation** Recommend to City Council: adoption of the Mitigated Negative Declaration and approval of the Major Moffett Park Design Review Permit with conditions.

VICINITY MAP



BACKGROUND:

Moffett Park Specific Plan

The subject site is within the boundaries of the Moffett Park Specific Plan (MPSP). The City of Sunnyvale adopted the 1,100-acre Moffett Park Specific Plan in the spring of 2004 to replace the former M-S (Manufacturing and Service) and M-3 (General Industrial) zoning districts. The MPSP's timeframe for buildout is over 20-years. The sub-districts of the MPSP were designed to encourage corporate office and Class "A" office redevelopment to diversify the City's industrial base. The MPSP includes a provision for a Development Reserve to allow exemplary projects the benefit of additional floor area beyond the standard FAR restrictions of the sub-districts. The Development Reserve square footage was not applied to individual parcels or general areas, but rather to the entire MPSP area. In addition to supporting Class "A" office development, the plan addresses transportation improvements, supports use of public transit, and encourages sustainable design and green building techniques.

Previous Action on the Site

In 2006, Lockheed Martin Missiles and Space Company (Lockheed Martin) subdivided a 304 acre property into four new lots and a remainder lot. Lockheed sold two of the four new properties (referred to as Lot 1 and Lot 3) to the current owner/applicant Jay Paul Company.

Also in 2006, the City Council approved redevelopment of Lot 1 and Lot 3 into an office campus called Moffett Towers (Jay Paul Company was the applicant). Development of Lot 1 included the adjacent "Technology Corners" campus (formerly known as "Ariba") in the FAR calculation. Lot 1 and Lot 3 redevelopment resulted in the removal of existing office buildings and construction of approximately 1.7 million square feet of new Class A, R&D office. The new development consisted of seven 8-story office buildings, three 4½ level parking structures, surface parking area, and one 43,565 square foot amenities building that would house a cafeteria and recreation/fitness uses for employees. The approved FAR is 70%. Utilization of the development reserve was required for 798,258 square feet (square footage above the MP-TOD base 50% FAR). The Moffett Towers project is located on two separate lots, Lot 1 and Lot 3. Lot 1 is 23 acres and Lot 3 is 29 acres. The existing Technology Corners campus is located on a 27 acre parcel adjacent to and east of Lot 1.

As part of the 2006 Jay Paul project, a Specific Plan Amendment was approved to change the land use designation of Lot 3 from MP-I (Moffett Park-General Industrial) to MP-TOD (Moffett Park-Transit Oriented Development). The Specific Plan Amendment also changed the text of the MPSP to allow parcels which are a greater distance than 2,000 feet from the light rail station to be zoned MP-TOD under certain circumstances.

Two Development Agreements were approved: one for Lot 1 and one for Lot 3. The Development Agreements, adopted by ordinance, specify the maximum allowed

development for each lot and outline the traffic impact and housing mitigation fees for the projects. There is a provision requiring accelerated payment of the housing mitigation fees.

Current Applications

Jay Paul Company is currently proposing two separate projects, located in close proximity, but on separate parcels and in separate office campuses. There are two Major Moffett Park Design Review (Major MPDR) permit applications and a third application to modify the Development Agreements (discussion below). All three related applications will be heard concurrently by Planning Commission and then by the City Council. The two projects have a combined environmental review and combined technical studies. The applications will be heard by the City Council since there are Development Agreements with the projects.

The first project (2011-7119) is located at 807 11th Ave. (APN: 110-45-002) and is for a Major MPDR for the addition of a new 200,000 sf. Building 5 and new parking structure at the Technology Corners/Ariba campus.

The subject application and second project (2011-7170) is located at 1100 Enterprise Way (APN: 110-57-001) and is for a Major MPDR for modification of Building D at the Moffett Towers-Lot 3 campus (net increase of 125,000 sf.) and new parking structure. Both projects include a Green Building LEED Gold incentive resulting in 80% Floor Area Ratio, and require modification to the existing Development Agreement approved by Council.

The third application (2011-7507), amends the two Development Agreements between the City and property owners addresses the total square footage allowed on each campus.

Lot 3 Current Status

In 2007, four of the approved five buildings were constructed (three office buildings and the amenity building). The final building, Building D, was not built and is the subject of the current Major MPDR.

Previous Actions on the Site

The following table summarizes previous planning applications related to the subject site:

File Number	Brief Description	Hearing/Decision	Date
2005-1198	Amendment to MPSP, Rezoning to MP-TOD, Moffett Towers Major MPDR and TM for 7 buildings and Certified Environmental Impact Report	City Council approved	11/14/06
2004-0023 2005-0324	Lockheed Martin Variance and TM	Planning Commission approved	10/24/05

File Number	Brief Description	Hearing/Decision	Date
2000-0523	Moffett Park Specific Plan	City Council approved	11/11/03
1991-0241	Lockheed Site & Master Use Permit (SMUP) And Certified Environmental Impact Report	Approved (Development Agreement executed 1/10/95) (Ordinance No. 2496-95) Certified	12/20/94

DISCUSSION:

Requested Permits

Major Moffett Park Design Review: This project proposes to expand Building D by an additional 125,000 sf., for a total building size of 325,000 sf. Building D is not currently constructed and was approved in 2006 to be an 8-story office building with 200,000 sf. With this addition, the total development area at Moffett Towers Lot 3 will be at 1,000,058 sf. with an FAR of 80%. See Attachment C, Data Table for more details.

The expanded Building D will be at the same location as the previously approved project. Both the site and building will have some adjustments to the original design due to the larger footprint, however the building characteristics (style, finishes and materials) and connectivity to the campus remains intact. Re-designed entry plaza and walkways will connect to the existing campus circulation and green space. This building will have sustainable design features and energy-efficient building/mechanical systems. Additionally, the expanded building will be LEED Gold certified.

A new 3½ level parking garage will also be constructed to provide parking. The new parking structure (Garage 4) is located at the northeast corner of the campus, which is currently a surface parking lot. It will share the same architectural style, scale and finishes to the existing Garage 3, such as integral color pre-cast concrete panel. A total of 655 parking spaces will be provided to accommodate the additional development area, as well as, lost surface parking stalls due to the project.

The project meets all of the applicable City Municipal Code requirements and the applicant is not seeking any deviations from City code.

Development Reserve

The primary land use tool available for implementing the vision of the MPSP of redeveloping as a high technology office and R&D area with smart growth principles is the Development Reserve. The Development Reserve is set aside square footage for which individual projects within the MP-I and MP-TOD zones may request access. Approved access to the reserve permits a project to exceed the standard FAR limitation of the site up to the maximum level of the underlying zone. The additional square footage and corresponding level of project level intensity is

intended to act as an incentive for the redevelopment of underutilized sites with targeted growth. Access to the Development Reserve is based on compliance with the MPSP green building incentive program (subject to Planning Commission approval of site plan and architecture). The original Development Reserve total in 2003 was 5,443,565 square feet. The allocation of the Development Reserve is on a first-come first-serve basis and is currently at 3,344,738 sf., due to previously approved projects (Juniper Networks, Network Appliance, Moffett Towers, Java Metro Center, etc). The two applications combine to assign 325,000 sf. of the remaining reserve. The remaining Development Reserve would then be 3,019,738 sf. to cover all other sites in the MPSP.

Green Building Incentive

The project proposes to utilize the City's incentives for Green Building program. Incentives are offered for projects that exceed the minimum green building threshold which became effective January 1, 2010. The incentives are designed to encourage project applicants and developers to provide additional green building features. Non-residential projects are subject to LEED standards. LEED provides a complete framework for assessing building performance and meeting sustainability goals. LEED emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED is a performance-based program that provides the project design team the ability to select which credits they would achieve and how it would be designed. An update to the green building program will be considered by the City Council on September 13, 2011.

The Green Building Program brings together the MPSP and citywide green building requirements and incentives. Use of the MPSP Development reserve is allowed through a two tier incentive program. Under the City's Green Building program (as anticipated in the update), new construction of 5,000 sf. or greater in the MP-TOD district qualifies for a 20% increase in FAR if the improvements meet the design intent of LEED Gold (LEED Checklist). An additional 10% FAR would be allowed if the project is certified LEED Gold through the US Green Building Council (USGBC).

After determining if a project meets the minimum zoning requirements and the required levels in the Green Building Program, a project is subject to discretionary review through a Major MPDR permit. A Major MPDR is for the review of off-site plans and architecture along with environmental review.

In order to meet the City's LEED incentive requirements, the applicant is proposing the following as part of the project:

New Building D: The new Building D will be constructed to meet LEED Gold certified level. Applicant will obtain LEED CS Gold (core/shell) certification for Building D once warm shell improvements are complete.

Existing Buildings: The existing building shells (Buildings E, F & G) at Lot 3 have been designed to meet a LEED CS Gold certification standards. The

applicant will obtain LEED CS Gold certification once the existing shells have been improved enough to be certified by LEED (these buildings are similar to Moffett Towers Lot 1 buildings, which have already been certified LEED CS Gold). The amenities building on Lot 3 has been certified LEED NC (new construction) Gold.

New Tenant Improvements: The applicant has agreed to require all future tenants to obtain LEED CI Gold (commercial interior) certification for new tenant improvements. The Green Building Agreement between the City of Sunnyvale and Moffett Towers Lot 3 LLC currently mandates that all Lot 3 buildings obtain LEED Silver certification by the USGBC.

Existing Tenant Improvements: Although the existing tenants and/or tenants with existing leases (prior to new project submittal by applicant) are required by their leases to obtain LEED CI Silver certification under the existing Green Building Agreement, all of them are currently pursuing a LEED Gold certification. The applicant has agreed that, as a condition of approval, all new leases will require LEED CI Gold certification.

ANALYSIS:

Surrounding Uses and Setting

The project site is located at 1000-1100 Enterprise Way. It is located close to the intersection of US Freeway 101 and South Bay Freeway 237 and east of The Moffett Airfield. The site is located within the MPSP area and is generally bounded by Lockheed-Martin to the north and east. Enterprise Way and Moffett Federal Airfield are located to the west. To the south lies Moffett Towers Lot 1 as well as the Valley Transit Authority (VTA) light rail line. The Moffett Park area is currently developed with corporate headquarters, office, light industrial, and R&D uses.

Since the 1960s, the MPSP area has had a large defense industry presence (US Air Force, US Navy, Lockheed-Martin Corporation, and the National Aeronautics and Space Administration (NASA)). The MPSP area also contains numerous low-rise warehouses and industrial/business park buildings, as well as cafes, restaurants, hotels, and a private college (Cogswell College). Beginning in the late 1990s several high-tech businesses opened corporate campuses in the area, including Juniper Networks, Yahoo Inc., Interwoven, NetApp, and others. Moffett Federal Airfield (located west of the Project site, across Enterprise Way) is where NASA continues to conduct federal aeronautical and aviation operations. Manufacturing, research and development, aircraft hangars, and office buildings currently occupy the site. A VTA light rail station is located in the southern portion of the Lot 1 site along West Moffett Park Drive. The surrounding MPSP area is developed with office, technology, research and development, and corporate headquarters space.

Architecture

Moffett Towers (Lot 3) is a collection of three distinctly different buildings of varying materials, but similar in their plan geometry. These buildings were designed as tall,

slender rectilinear forms, intersected by curving, segmented forms. The basic building masses are more solid with a larger proportion of opaque material. The solid materials used are stone, metal and GFRC (glass fiber reinforced cement). The curved and segmented forms are a lighter, more transparent skin of energy efficient glass and aluminum framing that provides contrast. The glass surfaces are interrupted by vertical bands of solar shading devices and deeper profile mullions. The metal elements on each of the three building types are detailed to read as a light texture, layered onto the glassy surfaces.

The new Building D has similar characteristics (style, finishes and materials) and will work to complete a campus environment, promoting the idea of a collective relationship, while maintaining individual building identity. The proposed architecture works with the existing collection of similar, yet individual buildings in this gateway campus. The proposed exterior will provide subtle differences in color, texture, scale and surface sheen. Each of the three solid materials (stone, metal, GFRC) was selected to provide a rich and diverse palette and to give these buildings an elegant character. See Attachment E for more details.

All of the existing and proposed office buildings would be approximately 130-feet high, eight-story structures with similar floor plans. The floor plan of each building is flexible and can be utilized by single or multi-tenants.

The design of the parking structure has been modified based on comments from the Planning Commission (at their study session) as well as from staff. The elevations have additional green screens and glass curtain walls added to help break-up the potentially monotonous elevation of the structure. The ramp for the structure has been designed to be located in the center of the structure to avoid the angled look of a structure with the ramp on the exterior elevation. The half-story, containing the angled ramp is exposed only to the east elevation, which is the least visible side.

Development Standards

- **Site Layout**

The existing project contains four buildings: three office buildings and one amenity building. The office buildings are approximately 208,794 sf. each. The proposed Building D is 325,000 sf. and will be located in the previously approved location. Existing drive aisles and other site features will not be modified by this project.

Lot 3 includes a central pedestrian network that connects the entire campus to the Moffett Towers Lot 1 and Moffett Park Light Rail Station, which is located in the southwest portion of the Technology Corners parcel, along West Moffett Park Drive. The pedestrian network connects the new and existing office buildings to each other, to the amenities building, and to the parking structures. Sidewalks are located along Enterprise Way next to a double row of trees.

Currently there is one existing parking structure (garage 3) on the east site of Lot 3. The new structure (garage 4) is 3½ levels and is proposed on the north, adjacent to 5th Avenue and the existing structure. This location will provide convenient access to the campus and Enterprise Way.

- **On-Site Parking and Circulation**

The Moffett Towers Lot 3 campus between 11th Avenue and 5th Avenue has six driveways on Enterprise Way. Full access driveways are provided toward the southern and northern borders of the site, with the northern driveway providing full access to the proposed parking garage. All other driveways are restricted to right-in/right-out movements only by a raised median on Enterprise Way.

Circulation was evaluated by Fehr & Peers (July 2011) at the Enterprise Way full access driveways to determine if sufficient storage lengths are provided for vehicles on-site. The estimated queues for the exit driveways onto Enterprise Way are eight vehicles for the north driveway and ten vehicles for the south driveway, requiring a storage capacity of 200 feet and 250 feet, respectively. The proposed driveway lengths are 350 feet at the northern driveway and 250 feet at the southern driveway; thus the site has sufficient storage capacity to accommodate project traffic.

The proposed new garage will be constructed at the north-eastern edge of the campus, while Building D will actually be constructed towards the southern border of the site. Based on the current layout of the entire campus, most employees for Building D will likely use the existing parking garage that is closer to the building, while Buildings E, F, and G are closer to the proposed garage.

- **Landscaping**

Arborist's Reports were completed by Robert Booty, dated April 6 and 9, 2011. The reports reviewed the existing trees on-site and conclude that as part of the project, a number of trees will need to be removed to allow the construction of the new buildings. Protected under Sunnyvale Municipal Code (SMC) is defined as any tree greater than 38" in circumference, measured at 4.5' from the adjacent grade.

At the 1100 Enterprise Way site, 19 trees are proposed for removal in the area where Building D will be expanded. In the area where the new parking structure is proposed, 93 will need to be removed. None of these 112 trees in either location are considered protected under SMC. Additional trees and landscaping will be planted in the area surrounding Building D. The tree replanting ratio will be 1:1 replacement, to the extent that new trees can be accommodated on-site.

Environmental Review

- **Background 2003**

In 2003, the Sunnyvale City Council certified the program-level MPSP Environmental Impact Report. As part of the EIR, it was found that there were

significant unavoidable environmental impacts resulting from the proposed MPSP. The Council at that time opted to make statements of overriding consideration for these unavoidable impacts, and deemed them to be acceptable in view of the significant economic and social benefits which the approval of the MPSP would make possible.

The statements of overriding consideration were made for the following unavoidable impacts, as stated in the 2003 EIR:

Air Quality - Future area source and vehicular emissions under the proposed Moffett Park Specific Plan may result in operational air quality impacts.

Traffic and Circulation – Freeway Operations: Implementation and subsequent build-out of the proposed General Plan Amendment would not impact any additional study freeway segments beyond those impacted under General Plan 2020 Conditions. However, the implementation and subsequent build-out of the proposed General Plan Amendment would increase the severity and level of significance of impacts along several freeway segments that would be significantly impacted under General Plan 2020 conditions.

Expressway Conditions: There are no feasible mitigations measures to reduce the level of service impacts at the Central Expressway and Oakmead Parkway (City of Santa Clara) intersection, and the Central Expressway and Bowers Avenue (City of Santa Clara) intersection.

Mathilda Avenue Corridor: The Mathilda Avenue corridor will be impacted under the proposed Project in the A.M. peak hour and the P.M. peak hour.

Housing and Population - The proposed General Plan Amendment would not allow for the future construction of residential units in the MPSP area. However, the intensity of future industrial and commercial development that could be facilitated under the proposed MPSP would generate a substantial number of jobs and would indirectly induce population and housing growth throughout the region.

Cumulative Growth Impacts - Full build-out of the MPSP, along with other foreseeable development in the area will have an overall cumulative impact on the region, affecting air quality, transportation and the jobs/housing ratio.

- **Background 2006**

In 2006 Jay Paul Company's Moffett Towers (Lot 1 and Lot 3) was approved for a rezoning of a portion of the Lockheed-Martin campus. This project required a Subsequent Environmental Impact Report (SEIR) since the Lot 3 portion of the site was proposed at a higher intensity than what is permitted under the 2004 MPSP or other SMC provisions, resulting in the need for an amendment to the MPSP and the Lot 3 rezoning. The zoning of the balance of the site (Lot 1) was unaffected. It was determined that the increased development intensity could result in major revisions to the previously certified EIR. Similar to the 2003

MPSP EIR, the Council at that time opted to make statements of overriding consideration for these unavoidable environmental impacts.

- **Current Application**

The current applications do not require a subsequent EIR since they are implementing a project that was anticipated as part of the MPSP and expected under the approved Development Reserve. The project would draw the proposed square footage from the approved Development Reserve and does not propose to create a higher intensity development than was contemplated by the MPSP or other SMC provision. However, an environmental review is required to determine if there are any site-specific or local impacts, if mitigation measures are required, and to properly disclose those impacts. Site-specific impacts are the result of the Development Reserve square footage being applied to specific parcels, which could not have been anticipated under the MPSP.

The current applications are projects that are tiering from the 2003 MPSP programmatic EIR and do not require a subsequent EIR under CEQA section 21166 (Subsequent Studies) and Guidelines section 15162 (Subsequent EIRs). Based on the Initial Study below, the projects do not trigger the events listed in CEQA section 21166 and Guidelines section 15162.

The Initial Study and Mitigated Negative Declaration reviews two separate projects located in close proximity, but on separate parcels in separate campuses. The projects are two different buildings under separate applications. The two projects have a combined environmental review and combined technical studies, to study the maximum potential impact of both projects.

A Mitigated Negative Declaration (Attachment D) has been prepared in compliance with California Environmental Quality Act provisions and City Guidelines. An initial study has determined that the combined projects would not create any significant environmental impacts with implementation of the recommended mitigation measures.

The Initial Study and Mitigated Negative Declaration include discussion about air quality, transportation/traffic, and population/housing. See Attachment D for more details. Mitigation measures have been incorporated in the attached conditions of approval at the appropriate states of construction (Attachment B). The following is a summary of the main issues not already discussed in the report above:

Air Quality

The Bay Area Air Quality Management District (BAAQMD) 2011 CEQA Guidelines thresholds of significance provide that a development project would have a significant cumulative impact unless: 1) the project can be shown to be in compliance with a qualified Climate Action Plan, 2) project emissions of CO₂ equivalent greenhouse gases (CO₂ e) are less than 1,100 metric tons per year, or 3) project emissions of CO₂ equivalent greenhouse

gases are less than 4.6 metric tons per year per service population (residents plus employees). The City of Sunnyvale does not have a Climate Action Plan at the time of the writing of this Initial Study.

The applicant provided an Air Quality and Greenhouse Gas Analysis for the two projects. The study was completed by Environ on May 18, 2011. The report concludes that the combined projects will result in both one-time (construction related) and annual (operational-related) emissions. Environ's analysis indicates that the project does not exceed the thresholds of significance according to the current BAAQMD CEQA guidelines.

Transportation and Traffic

A Traffic Impact Analysis (TIA) has been prepared by Fehr & Peers, dated July 14, 2011. The study is attached to the Initial Study (Attachment D).

The Fehr & Peers report presents the results of the TIA and concludes there are no new significant impacts resulting from the combined projects, which cannot be mitigated to be less than significant. Although the project would not result in any significant traffic impacts, the project would be required to construct a number of improvements and to pay Traffic Impact Mitigation (TIF) fees. Improvements included new bike lane, left turn lanes, signal activation, and further study of intersection signalization. The anticipated TIF is approximately \$910,264 for 807 11th and \$568,915 for 1100 Enterprise. These TIFs will be used by the City as part of the ongoing study and upgrade of the City's transportation systems to offset the contribution of project-generated traffic on local roadways. The project would result in a less than significant traffic impact with mitigation measures.

Population and Housing

The total 325,000 sf. of office is consistent with the allowable 70% FAR of the existing zoning (Moffett Park Transit Oriented Development - MPT) and General Plan designation (Moffett Park Specific Plan) of the site. The project is also consistent with the additional 10% FAR for the City's Green Building Incentive program (total FAR of 80%). The new office square footage would create opportunities for new jobs and would cause a slight increase in the City's Jobs/Housing balance. The project would be required to pay Housing Mitigation fees (currently at \$9.08/sf.) for the net new square footage proposed. Based on a preliminary calculation, the fee for the net new square footage for 1100 Enterprise Way is \$1,135,000. The Housing Mitigation fees are intended to mitigate the impacts of potential new jobs on housing by providing dedicated funds for the expansion of workforce housing. Therefore, the project would not induce substantial population growth.

Stormwater Management

A preliminary Stormwater Management Plan has been submitted as required, which shows proposed drainage patterns and conceptual treatment techniques to

minimize surface runoff and pollution. A more detailed Stormwater Management Plan will be submitted during the building permit phase.

Art in Private Development

Non-residential sites two acres and larger are required to provide art in publicly viewable areas equal to 1% of the construction valuation of the project. Separate approval of the art is required by the Arts Commission.

Development Agreement

In 2006 the applicant entered into two Development Agreements with the City to allow for development entitlements of Lot 1 and Lot 3 and reservation of certain areas of the Moffett Towers-Lot 1/Technology Corners campus as they relate to the Mary Avenue extension. The current project includes a modification to these Development Agreements for Moffett Towers and the Technology Corners campus. The Agreements are being reviewed under a separate application (2011-7507) that will be heard at the same City Council meeting. They include modifications to the projects descriptions and clean-up of outdated sections.

FISCAL IMPACT

Transportation Impact Fee

Projects resulting in net new peak hour automobile trips are subject to a transportation impact fee. The TIF is estimated to be \$568,915, and must be paid prior to issuance of a building permit. The amount is subject to the fee schedule in place at the time of payment.

Housing Impact Fee

The City of Sunnyvale requires a payment of Housing Mitigation fees for high intensity development greater than the standard FAR levels adopted in the 1997 General Plan. The Housing Mitigation fee is \$9.08/sf. for all new square footage. The estimated housing impact fee for the subject site (Lot 3) is \$1,135,000 (net additional square footage). Fees must be paid for each phase prior to issuance of building permits for the associated building.

PUBLIC CONTACT

Planning Commission Study Session

A Planning Commission study session was held on May 9, 2011. The Commission was generally supportive of the proposed building design. There were some concerns about the parking structure, additional traffic, and parking (motorcycle parking, assigned spaces). The applicant has made project modifications in response to the Commission's comments. The largest change is to modify the parking structure to add green screens and glass wall features.

Notice of Negative Declaration and Public Hearing	Staff Report	Agenda
<ul style="list-style-type: none"> • Published in the <i>Sun</i> newspaper • Posted on the site • 12 notices mailed to the property owners and residents within 300 ft. of the project site 	<ul style="list-style-type: none"> • Posted on the City of Sunnyvale's Website • Provided at the Reference Section of the City of Sunnyvale's Public Library 	<ul style="list-style-type: none"> • Posted on the City's official notice bulletin board • City of Sunnyvale's Website

CONCLUSION

Findings and General Plan Goals: Staff was able to make the required Findings based on the justifications for the Major Moffett Park Design Review that were provided by the applicant as well as based on staff analysis. Recommended Findings and General Plan Goals are located in Attachment A.

Conditions of Approval: Recommended Conditions of Approval are located in Attachment B.

ALTERNATIVES

1. Recommend the City Council adopt the Mitigated Negative Declaration and approve the Major Moffett Park Design Review with attached conditions.
2. Recommend the City Council adopt the Mitigated Negative Declaration and approve the Major Moffett Park Design Review with modified conditions.
3. Recommend the City Council adopt the Mitigated Negative Declaration and deny the Major Moffett Park Design Review.
4. Recommend the City Council does not adopt the Mitigated Negative Declaration and direct staff as to where additional environmental analysis is required.

RECOMMENDATION

Alternative 1: Recommend the City Council adopt the Mitigated Negative Declaration and approve the Major Moffett Park Design Review with attached conditions.

Prepared by:

Steve Lynch
Project Planner

Reviewed by:

Trudi Ryan
Planning Officer

Approved by:

Gary Luebbers
City Manager

Attachments:

- A. Recommended Findings
- B. Recommended Conditions of Approval
- C. Project Data Table
- D. Mitigated Negative Declaration
- E. Site and Architectural Plans

RECOMMENDED FINDINGS

Major Moffett Park Design Review

Moffett Park Specific Plan Goals and Policies:

The City Council may approve any Major Moffett Park Design Review permit upon such conditions, in addition to those expressly provided in other applicable provisions of this code, as it finds desirable in the public interest, upon finding that the permit will both:

(A) Attain the objectives and purposes of the MPSP:

The project attains the primary purpose of the MPSP objectives based on the following:

Guiding Principals

Guiding Principle 1.0: Positively influence the Sunnyvale business climate and enhance economic vitality by providing comprehensive land use policies and permitting processes that encourage development of additional needed Class A office space to diversify the industrial base of Sunnyvale.

Guiding Principle 4.0: Provide opportunity for strategic retention and attraction of business and private investment.

Guiding Principle 5.0: Focus areas of higher intensity development in areas adjacent to public transportation facilities.

Guiding Principle 6.0: Streamline the land use permit and environmental review approval process.

Guiding Principle 8.0: Increase utilization of public transit through coordinated land use, transportation, and infrastructure planning.

Guiding Principle 9.0: Incorporate the principles of “smart growth: into all planning decisions.

Guiding Principle 10.0: Incorporate sustainable design and green building concepts into private and public projects.

Land Use Objectives

Specific Plan Objective LU-1: Establish development regulations that provide a framework to allow for higher intensity development.

Specific Plan Objective LU-2: Coordinate land use planning within Moffett Park with transportation planning.

Specific Plan Objective LU-3: Allow for balance development that minimizes environmental and fiscal impacts to the City.

Specific Plan Objective LU-4: Establish land use districts that encourage high quality corporate headquarter and Class A office development.

Specific Plan Objective LU-5: Provide for higher intensity development along transportation corridors and within close proximity to rail and transit stations.

Specific Plan Objective LU-6: Provide a development reserve of additional square footage for sites adjacent to public transit facilities as an incentive to developers and to provide flexibility of use for the future needs of the City's residents and businesses.

Circulation and Transportation Objectives

Specific Plan Objective CIR-5: Require a correlation between higher intensity land uses in the Specific Plan project area and direct access to alternative modes of transportation.

Implementation and Administration Objectives

Specific Plan Objective IMP-4: Allow for flexibility with the Specific Plan so that it is responsive to changes in the marketplace.

(B) Substantially conform with the Moffett Park Design Guidelines set forth in Chapter Six of the MPSP:

The project has attained the primary design objectives of the Specific Plan through site planning and architectural design, as well as green building design. The project has coordinated the site layout to emphasize campus connectivity and the primary landscape promenade through the site. Connectivity is provided throughout the site. The building architecture utilizes both building forms and materials to distinguish the design while at the same time providing consistency with contemporary neighboring R&D facilities within Moffett Park. The following are specific policy and the project achieved related to the Community Design in Chapter 6 of the MPSP:

Site Plan

1. Buildings should generally be placed at or near the front setback line without parking between.
2. Buildings located on corner parcels should be placed at or near the setback lines of each street. A strong pedestrian connection to the street should be established through the use of open plaza area and enhanced landscaping, lighting, artwork, and pedestrian amenities.
4. When multiple buildings are proposed for a site, they should be grouped to provide functional open spaces, plazas, and courtyards. Strong pedestrian connections should link buildings and open spaces. Consider daylighting opportunities through building orientation and separation of buildings.
5. Loading areas and service yards should be located to the rear of the site and completely screened from view.
6. Service areas for trash bins, utility cabinets, transformers, etc. should be planned and designed as an integral part of the site.

Architecture

1. Large scaled elements of undifferentiated mass make buildings appear bulky and monotonous. Differentiate the three traditional parts of the building; base, mid section, and top. Vary the planes of exterior walls and provide articulation through use of color, change of materials, and arrangement of façade elements. Create buildings of varying heights and roof lines.
3. Architectural design and detailing should be consistent on all elevations of the building and between different buildings within the same complex.
5. The use of varied materials and colors is generally encouraged. Materials should be of high quality and should relate to each other in logical ways.
6. Roof forms shall be consistent with the design theme of the building and should continue all the way around the building to complete the design.
7. Parapet walls and equipment screen walls shall be treated as an integral part of the building design.
9. Art in private development requirement may allow for integration of art objects into building design, features, and materials.

Landscaping

1. Landscaping serves a variety of purposes and shall be designed to serve multiple needs.
7. Exterior lighting for all types of uses shall be designed to shine downward to prevent light pollution affecting efforts to preserve a “dark sky” and to avoid light trespass and glare onto adjoining properties. Creative fixture design is encouraged as an accent to the site.

Sustainable Design and Green Building Techniques

2. Impervious surfaces, including parking areas, shall be kept to the minimum amount necessary to adequately serve the use.

3. Roof design shall consider the heat island effects of roof materials. Roofs should incorporate high albedo (reflective, light colored) or "green" roof designs into the building to address energy efficiency of building cooling and stormwater runoff requirements.
5. Parking lot design shall allow for phased implementation as necessitated by on-site demand. Overflow parking or underutilized periphery spaces shall emphasize ecological design techniques.
6. Window design shall, in addition to considering such issues as energy efficiency and aesthetic appeal, strive to provide for high levels of day lighting for office type uses.
7. Indoor and outdoor materials should contain a high percentage of recycled content or rapidly renewable resources and produced in the region, when available to satisfy the required utility or aesthetic.
8. Interior design is encouraged to provide for high levels of indoor environmental quality that provides for long term benefits to employees' health and productivity through the use of low-emitting materials and efficient ventilation methods.

ATTACHMENT B

RECOMMENDED CONDITIONS OF APPROVAL AND STANDARD DEVELOPMENT REQUIREMENTS AUGUST 22, 2011

Planning Application 2011-7170
1100 Enterprise Way

Major Moffett Park Design Review Permit for modification of Building “D” at the Moffett Towers campus (net increase of 125,000 square feet). Project includes Green Building LEED Gold incentive resulting in 80% Floor Area Ratio and requires modification to the existing development agreement (Planning Application 2011-7507).

The following Conditions of Approval [COA] and Standard Development Requirements [SDR] apply to the project referenced above. The COAs are specific conditions applicable to the proposed project. The SDRs are items which are codified or adopted by resolution and have been included for ease of reference, they may not be appealed or changed. The COAs and SDRs are grouped under specific headings that relate to the timing of required compliance. Additional language within a condition may further define the timing of required compliance. Applicable mitigation measures are noted with “Mitigation Measure” and placed in the applicable phase of the project.

In addition to complying with all applicable City, County, State and Federal Statutes, Codes, Ordinances, Resolutions and Regulations, Permittee expressly accepts and agrees to comply with the following Conditions of Approval and Standard Development Requirements of this Permit:

GC: THE FOLLOWING GENERAL CONDITIONS AND STANDARD DEVELOPMENT REQUIREMENTS SHALL APPLY TO THE APPROVED PROJECT.

GC-1. CONFORMANCE WITH APPROVED PLANNING APPLICATION:

All building permit drawings and subsequent construction and operation shall substantially conform with the approved planning application, including: drawings/plans, materials samples, building colors, and other items submitted as part of the approved application. Any proposed amendments to the approved plans or Conditions of Approval are subject to review and approval by the City. The Director of Community Development shall determine whether revisions are considered major or minor. Minor changes are subject to review and approval by the Director of Community Development. Major changes are subject to review at a public hearing. [COA] [PLANNING]

- GC-2. CONFORMANCE WITH PREVIOUS APPLICATION (2005-1198)
This application shall be in conformance with the previously approved 2005-1198 permit.
- GC-3. DEVELOPMENT AGREEMENT:
If a Development Agreement is approved for this project, the terms and conditions of that Agreement supersede these conditions of approval. [SDR] (PLANNING)
- GC-4. PERMIT EXPIRATION:
The permit shall be null and void two years from the date of approval by the final review authority at a public hearing if the approval is not exercised, unless a written request for an extension is received prior to expiration date and is approved by the Director of Community Development. The Development Agreement supersedes and/or extends this permit expiration timeline. [SDR] [PLANNING]
- GC-5. TITLE 25:
Provisions of Title 25 of the California Administrative Code shall be satisfied with dependence on mechanical ventilation. [SDR] [BUILDING]
- GC-6. STORMWATER MANAGEMENT PLAN:
Project is subject to Provision C3, of the Municipal Regional Stormwater Permit Order No. R2-2009-0074, as determined by a completed "Stormwater Management Plan Data Form", and therefore must submit a Final Stormwater Management Plan as per SMC 12.60.140 prior to issuance of the building permit. [SDR] [PLANNING]
- GC-7. ENCROACHMENT PERMIT:
Obtain an encroachment permit from the Department of Public Works for all off-site improvements. [SDR] [PUBLIC WORKS]
- GC-8. GREEN BUILDING REQUIREMENTS:
- a) **New Building D:** The new Building D shall be constructed to meet LEED Gold level and shall be submitted to USGBC for formal certification.
 - b) **Existing Buildings:** The applicant shall obtain LEED Gold certification for all existing office buildings and shall be submitted to USGBC for formal certification.
 - c) **Tenant Improvements:** The applicant shall require or facilitate all tenants to obtain LEED Gold certification for new tenant improvements. [COA] [PLANNING]
 - d) **Existing Tenant Improvements:** The tenants existing leases signed (prior to new project submittal by applicant) shall obtain a LEED CI Gold (commercial interior) certification standard when the tenant leases expire, and/or renewed/extended under terms other than those provided for by the existing leases. [COA] [PLANNING]

PS: THE FOLLOWING CONDITIONS SHALL BE MET PRIOR TO SUBMITTAL OF BUILDING PERMIT, AND/OR GRADING PERMIT.

PS-1. LOT LINE ADJUSTMENT:

The developer shall submit to staff, for review and approval, a lot line adjustment package to adjust the existing property lines associated with Building D to the new location to accommodate the new building footprint. The lot line adjustment shall be recorded with the County of Santa Clara prior to any building permit issuance. [COA] [PLANNING/PUBLIC WORKS]

BP: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS SUBMITTED FOR ANY DEMOLITION PERMIT, BUILDING PERMIT, GRADING PERMIT, AND/OR ENCROACHMENT PERMIT AND SHALL BE MET PRIOR TO THE ISSUANCE OF SAID PERMIT(S).

BP-2. CONDITIONS OF APPROVAL:

Final plans shall include all Conditions of Approval included as part of the approved application starting on sheet 2 of the plans. [COA] [PLANNING]

BP-3. RESPONSE TO CONDITIONS OF APPROVAL:

A written response indicating how each condition has or will be addressed shall accompany the building permit set of plans. [COA] [PLANNING]

BP-4. BLUEPRINT FOR A CLEAN BAY:

The building permit plans shall include a “Blueprint for a Clean Bay” on one full sized sheet of the plans. [SDR] [PLANNING]

BP-5. FEES AND BONDS:

The following fees and bonds shall be paid in full prior to issuance of building permit.

- a) TRANSPORTATION IMPACT FEE - Pay Traffic Impact fee for the net new trips resulting from the proposed project that will be calculated prior to issuance of a Building Permit. (SMC 3.50). [SDR] [PLANNING]
- b) HOUSING IMPACT MITIGATION FEE - Housing Mitigation fee is required for all new square footage and is based on the fee in place at the time of payment. The estimated housing impact fee is \$1,135,000. (SMC 19.29). [SDR] [PLANNING]

BP-6. LANDSCAPE PLAN:

Landscape and irrigation plans shall be prepared by a certified professional, and shall comply with Sunnyvale Municipal Code Chapter 19.37 requirements. Landscape and irrigation plans are subject to review and approval by the Director of Community Development through a Miscellaneous Plan Permit at the time of Building Permit submittal. The landscape plan shall include the following elements:

- a) All areas not required for parking, driveways or structures shall be landscaped.
- b) Ten percent (10%) of trees shall be 24-inch box size or larger and no tree shall be less than 15-gallon size.
- c) Ground cover shall be planted so as to ensure full coverage eighteen months after installation.
- d) Backflow devices and other appurtenances are to include screening and covers as approved by the Director of Community Development. This includes all devices (irrigation, DCDA, etc.) located in the front or side yard landscape areas. Covers should be black, metal mesh with rounded top covers (e.g. – “mailbox style”).
[COA] [PLANNING]

BP-7. STORMWATER MANAGEMENT CALCULATIONS:

Submit two copies of the City of Sunnyvale Impervious Surface Calculation worksheet prior to issuance of a Building Permit. [COA] [PLANNING]

BP-8. STORMWATER MANAGEMENT PLAN:

Submit two copies of a Stormwater Management Plan subject to review and approval by Director of Community Development and third party certification, pursuant to SMC 12.60, prior to issuance of building permit. [COA] [PLANNING/PUBLIC WORKS]

BP-9. STORM WATER MANAGEMENT PLAN THIRD PARTY CERTIFICATION:

Third party certification of the Storm Water Management Plan is required per the following guidance: City of Sunnyvale – Storm Water Quality BMP Applicant Guidance Manual for New and Redevelopment Projects - Addendum: Section 3.1.2 Certification of Design Criteria Third-Party Certification of Storm Water Management Plan Requirements. The third party certification shall be provided prior to building permit issuance. [SDR] [PLANNING/PUBLIC WORKS]

BP-10. STORM WATER BEST MANAGEMENT PRACTICES:

The project shall comply with the following source control measures as outlined in the BMP Guidance Manual and SMC 12.60.220. Best management practices shall be identified on the building permit set of plans and shall be subject to review and approval by the Director of Public Works:

- a) Storm drain stenciling. The stencil is available from the City's Environmental Division Public Outreach Program, which may be reached by calling (408) 730-7738.
- b) Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping.
- c) Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
- d) Covered trash, food waste, and compactor enclosures.
- e) Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:
 - i) Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
 - ii) Dumpster drips from covered trash and food compactor enclosures.
 - iii) Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
 - iv) Swimming pool water, spa/hot tub, water feature and fountain discharges if discharge to onsite vegetated areas is not a feasible option.
 - v) Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option. [SDR] [PLANNING]

BP-11. HISTORICAL AND CULTURAL REMAINS:

The project shall comply with all necessary requirements regarding Historic and Cultural Remains. [COA][PLANNING]

Mitigation Measures

WHAT: 1) For projects involving substantial ground disturbance, the individual project sponsor shall be required to contact the California Historical Resources Information System (CHRIS) to determine whether the particular project is located in a sensitive area. Future development projects that the CHRIS determines may be located in a sensitive area--i.e., on or adjoining an identified archaeological site--shall proceed only after the project sponsor contracts with a qualified archaeologist to conduct a determination in regard to cultural values remaining on the site and warranted mitigation measures.

2) If a significant archaeological resource is identified during grading, the City and project proponent shall seek to avoid damaging effects to the resource. Preservation in place to maintain the relationship between the artifact(s) and the archaeological context is the preferred manner of mitigating

impacts to an archaeological site. Preservation may be accomplished by:

- Planning construction to avoid the archaeological site;
- Incorporating the site within a park, green space, or other open space element;
- Covering the site with a layer of chemically stable soil; or
- Deeding the site into a permanent conservation easement.

3) When in-place mitigation is determined by the City to be infeasible, a data recovery plan, which makes provisions for adequate recovery of the scientifically consequential information about the site, shall be prepared and adopted prior to any additional excavation being undertaken. Such studies must be submitted to the California Historical Resources Regional Information Center. If Native American artifacts are indicated, the studies must also be submitted to the Native American Heritage Commission. Identified cultural resources should be recorded on form DPR 422 (archaeological sites). Mitigation measures recommended by these two groups and required by the City shall be undertaken, if necessary, prior to resumption of construction activities.

A data recovery plan and data recovery shall not be required if the City determines that testing or studies already completed have adequately recovered the necessary data, provided that the data have already been documented in another EIR or are available for review at the California Historical Resource Regional Information Center [CEQA Guidelines section 15126.4(b)].

In the event that subsurface cultural resources are otherwise encountered during approved ground-disturbing activities for a project area construction activity, work in the immediate vicinity shall be stopped and a qualified archaeologist retained to evaluate the finds following the procedures described above.

If human remains are found, special rules set forth in State Health and Safety Code section 7050.5 and CEQA Guidelines section 15126.4(b) shall apply.

WHEN: These conditions shall apply during construction of the project.

WHO: The property owner will be solely responsible for implementation and maintenance of these conditions.

HOW: These conditions shall apply during construction of the project and shall be incorporated into the construction plans.

BP-12. AIR QUALITY:

The project shall comply with all necessary requirements regarding Air Quality. [COA][PLANNING]

Mitigation Measures

WHAT: Permits must be obtained from the City of Sunnyvale (grading permit and Storm Water Pollution Prevention Plan) and BAAQMD (J-Permit) prior to demolition or new construction. The City of Sunnyvale permit shall, amongst others, specifically include the following mitigation measures:

1. Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences shall be kept damp at all times.
2. Cover all hauling trucks or maintain at least two feet of freeboard.
3. Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.
4. Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads.
5. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., previously-graded areas that are inactive for 10 days or more).
6. Replant vegetation in disturbed areas as quickly as possible.
7. Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles.
8. Limit traffic speeds on the construction sites to 15 mph.
9. Suspend construction activities that cause visible dust plumes to extend beyond the construction site.
10. During site demolition activities, removal or disturbance of any materials containing asbestos, lead paint or other hazardous pollutants will be conducted in accordance with BAAQMD rules and regulations (refer to Section 2.9, Hazards and Hazardous Materials).
11. A Disturbance Coordinator will be assigned to the project for the full duration of asbestos abatement, demolition activities, grading, excavation, and building construction. This coordinator will ensure that all air quality mitigation measures are enforced. In addition, the Disturbance Coordinator will respond to complaints from the public regarding air quality issues in a timely manner. The

contact information for this Coordinator will be posted in plain view at the project site. The Coordinator will also be responsible for notifying adjacent properties of the demolition schedules.

12. Opacity is an indicator of exhaust particulate emissions from off-road diesel powered equipment. The Disturbance Coordinator shall ensure that emissions from all construction diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Any equipment emitting dark smoke three minutes after start up is in violation of this measure.
13. Diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite.
14. Properly tune and maintain equipment for low emissions.

WHEN: These conditions shall apply during construction of the project.

WHO: The property owner will be solely responsible for implementation and maintenance of these conditions.

HOW: The conditions shall be incorporated into the construction plans.

BP-13. TRANSPORTATION AND TRAFFIC:

The project shall comply with all necessary requirements regarding Transportation and Traffic. [COA][PLANNING]

Intersections Mitigation Measures:

- WHAT:
- 1) Intersection #2. Enterprise Way/Building D Site Access (South): Monitoring of MUTCD and California Supplement traffic signal warrants. Should signal warrants be met, installation of a City standard traffic signal, or alternatively, the provision of an approximately two-car refuge lane for the westbound left-turn movements including median improvements.
 - 2) Intersection #3. Enterprise Way/11th Avenue: Monitoring of MUTCD + California Supplement traffic signal warrants and full activation of the existing traffic signal at such time that warrants are met
 - 3) Intersection #8. Enterprise Way/Manila Drive/Moffett Park Drive: Payment of Traffic Impact Fee (TIF), some of

which is for the construction of the Mary Avenue Overcrossing. Should the Mary Avenue overcrossing project not be approved for construction by occupancy of Building D or Building 5 (whichever is later), then the project proponent shall implement interim improvements of the eastbound through lane on Manila Drive shall be converted to a shared through/left-turn lane. The intent is to enable two lanes of traffic to turn left onto Enterprise Way. The signal phasing on Manila Drive-Moffett Park Drive shall be converted from protected left-turn phasing to split phasing to accommodate the shared through/left-turn lane.

- 4) Intersection #21. Ellis Street/Manila Drive: There shall be a westbound left-turn lane added. The developer shall pay for the completion of this project to the City of Mountain View or Sunnyvale for the completing this improvement. The cost of the mitigation is estimated to be approximately \$31,000 (based on the Fehr & Peers 2011 estimate). The mitigation fee is valid for two (2) years from the date of the approval for the Major MPDR permit. After two (2) years, the developer shall pay the full cost of the mitigation, as determined by an engineer's estimate.

WHEN: The conditions will become valid when the Major Moffett Park Design Review is approved. Conditions shall be applicable during the construction of the project.

WHO: The property owner/developer shall be solely responsible for implementation and maintenance of these mitigation measures.

HOW: The conditions shall be incorporated into the construction plans.

WHAT: 5) Intersection #11. Mathilda Avenue/Moffett Park Drive: Payments of the City's TIF will constitute the project's fair share contribution for the construction of the Mary Avenue Overcrossing.

6) Intersection #12. Mathilda Avenue/SR 237 Westbound Ramps: Payments of the City's TIF will constitute the project's fair share contribution for the construction of the Mary Avenue Overcrossing.

7) Intersection #13. Mathilda Avenue/SR 237 Eastbound Ramps: Payments of the City's TIF will constitute the project's fair share contribution for the construction of the Mary Avenue Overcrossing.

WHEN: These improvements are programmed in both the City's Transportation Strategic Program and the VTP 2035 list of constrained projects.

WHO: The City is responsible for implementation of these mitigation measures.

HOW: The Mary Avenue Extension project is programmed in the VTA's VTP 2035 list of constrained projects and is included in the City's TIF program with the City's contribution funded through the payment of TIF fees by new development projects.

WHAT: **Bicycle Facility Mitigation Measures:** "Sharrows" and signage shall be installed to alert vehicles to the potential presence of bicyclists in the Moffett Park Drive segment between Mathilda Avenue and Innovation and the City will continue to study the possibility of adding a bike lane in this segment. Bicycle lanes shall be added in the Moffett Park Drive segment between Enterprise Way and Innovation Way.

WHEN: The conditions will become valid when the Major MPDR is approved. Conditions will be applicable during the construction of the project.

WHO: The developer shall be required to provide funding for the improvements and the City shall implement the mitigation through the City's Capital Improvement Program.

HOW: The fees shall be paid to the City and the City shall implement the mitigation through City sponsored projects and programs.

WHAT: **Pedestrian Facility Mitigation Measures:** Pedestrian connections shall be provided between the proposed buildings, parking lots, and parking garages. A pedestrian pathway shall link the light rail station located at the south side of the Ariba campus and the new building at the Ariba Campus and to the 11th Avenue/Enterprise Way sidewalks that continue to Building D at Moffett Towers.

WHEN: These conditions shall apply during construction of the project.

WHO: The property owner will be solely responsible for implementation and maintenance of these conditions.

HOW: The conditions shall be incorporated into the construction plans.

WHAT: **Moffett Towers Campus On-Site Circulation Mitigation Measures:**

- 1) The project applicant shall consider adding a parking management program. Such a program could either assign parking based on building (i.e. Buildings D, E, and H shall park in the existing garage and buildings F and G

park in the proposed garage). Parking garage access can be re-assessed as the tenants begin to fill the buildings.

- 2) To better facilitate vehicle circulation the garage exits onto the main drive aisles shall be signed as stop controlled.

WHEN: These conditions shall apply during construction of the project.

WHO: The property owner will be solely responsible for implementation and maintenance of these conditions.

HOW: The conditions shall be incorporated into the construction plans.

BP-13: FIRE PREVENTION REQUIREMENTS:

The following requirements and upgrades are required, for review and approval by the Department of Public Safety: [COA] [PLANNING/PUBLIC SAFETY]

- a) As applicable, comply with the current requirements contained in Sunnyvale Municipal Code Chapter, California Fire Code, and Title 19 California Code of Regulations:
- b) The water supply for fire protection and fire fighting shall be approved by the Department of Public Safety.
- c) A fully automatic fire sprinkler system, fire alarm system, standpipes, and smoke control system are required.
- d) Provide required number of approved fire extinguishers.
- e) Adhere to Sunnyvale Fire Prevention fire access road requirements. www.fireprevention.insunnyvale.com. Roadway leading around proposed parking garage has dead-end fire apparatus access road in excess of 150 feet, so approved turnaround provisions would apply.
- f) Onsite fire hydrants shall be required along the fire access road(s) and/or parking lots.
- g) Trash enclosures, within 5 feet of building exterior walls or overhangs require fire sprinkler protection.
- h) A Knox box (key box) will be required in accordance with Fire Prevention guidelines. www.FirePrevention.inSunnyvale.com
- i) Firefighter's air system required.
- j) Radio retransmission equipment required.
- k) Fire Equipment Rooms required.
- l) Prior to any combustibile construction or materials on site, provide fire access drives and operational on-site fire protection systems.
- m) Provide a written Fire Protection Construction Plan.
- n) Provide electronic version of plans to assist with Fire Department "Pre-Fire Survey" maps.

EP: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED AS PART OF AN ENCROACHMENT PERMIT APPLICATION.

EP-1 PUBLIC WORKS FEES:

Public Works fees associated with the lot line adjustment, including but not limited to utility frontage and/or connection fees, off-site improvement plan check and inspection fees (subject to adjustment to the current fiscal year fee schedule), shall be paid prior to recordation of the lot line adjustment or encroachment permit issuance, whichever occurs first. [COA] [PUBLIC WORKS]

PF: THE FOLLOWING CONDITIONS SHALL BE ADDRESSED ON THE CONSTRUCTION PLANS AND/OR SHALL BE MET PRIOR TO RELEASE OF UTILITIES OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

PF-1. LANDSCAPING AND IRRIGATION:

All landscaping and irrigation as contained in the approved building permit plan shall be installed prior to occupancy. [COA] [PLANNING]

PF-2. COMPLETION OF PUBLIC IMPROVEMENTS:

All public improvements shown on the approved Major MPDR plans and discussed in the Initial Study/Mitigated Negative Declaration shall be completed prior to first building occupancy. [COA] [PUBLIC WORKS]

PF-2. TRASH AND RECYCLING ENCLOSURE:

The developer shall submit to staff, for review and approval, a site plan with details and path of trash truck travel showing the location and number of trash and recycling bins or compactors that meet the trash and recycling needs of the entire building based on the city's sizing criteria and requirement guidelines. The enclosure shall be constructed prior to the issuance of the first tenant certificate of occupancy. [COA] [PUBLIC WORKS]

DC: THE FOLLOWING CONDITIONS SHALL BE COMPLIED WITH AT ALL TIMES DURING THE CONSTRUCTION PHASE OF THE PROJECT.

DC-1. BLUEPRINT FOR A CLEAN BAY:

The project shall be in compliance with stormwater best management practices for general construction activity until the project is completed and either final occupancy has been granted. [SDR] [PLANNING]

AT: THE FOLLOWING CONDITIONS SHALL BE COMPLIED WITH AT ALL TIMES THAT THE MAJOR MOFFETT PARK DESIGN PERMITTED BY THIS PLANNING APPLICATION OCCUPIES THE PREMISES.

AT-1. LANDSCAPE MAINTENANCE:

All landscaping shall be installed in accordance with the approved landscape plan and shall thereafter be maintained in a neat, clean, and healthful condition. Trees shall be allowed to grow to the full genetic height and habit (trees shall not be topped). Trees shall be maintained using standard arboriculture practices. [COA] [PLANNING]

AT-2. BMP MAINTENANCE:

The project applicant, owner, landlord, or Maintenance Agreement parties, must properly maintain any structural or treatment control best management practices to be implemented in the project, as described in the approved Stormwater Management Plan and indicated on the approved building permit plans. [SDR] [PLANNING]

AT-3. BMP RIGHT OF ENTRY:

The project applicant, owner, landlord, or Maintenance Agreement parties,, shall provide access to the extent allowable by law for representatives of city, the local vector control district, and the Regional Water Quality Control Board, strictly for the purposes of verification of proper operation and maintenance for the storm water treatment best management practices contained in the approved Storm Water Management Plan. [SDR] [PLANNING]

PROJECT DATA TABLE

	EXISTING	PROPOSED	REQUIRED/ PERMITTED
General Plan	Moffett Park Specific Plan	Same	Moffett Park Specific Plan
Zoning District	MP-TOD	Same	MP-TOD
Lot Size (s.f.)	28.698 acres 1,250,085 sf.	Same	22,500 sf. min.
Gross Floor Area (s.f.)	Approved – 875,058 Built – 667,102	1,000,058	1,000,068 max.
Lot Coverage (%)	18.7%	25%	45% max.
Floor Area Ratio (FAR)	70%	80%	80% max. w/Green Building incentives
No. of Buildings On-Site	4	5	N/A
Distance Between Buildings	N/A	70'	32' min.
Building Height (ft.)	130'	130'	130' max.
No. of Stories	8-story	8-story	N/A
Setbacks			
North	5 th - 456'	5 th - 20'	15' min.
West	Enterprise - 45'	Enterprise - 35'	15' min.
East	Adjacent lot - 20'	Adjacent lot - 10'	None
South	11 th - 120'	11 th - 120'	15' min.
Landscaping (sq. ft.)			
Total Landscaping	387,734 sf. (38% based on developed site area)	357,004 sf.	250,017 sf. (20% min.)
Frontage Width (ft.)	Enterprise Way = 45' 11 th = 15'	Same	15 ft. min.
Landscaping Buffer (ft.)	Enterprise Way = 45' 11 th = 15'	Same	10 ft. min.

	EXISTING	PROPOSED	REQUIRED/ PERMITTED
% Based on Floor Area	28%	Same	10% min.
% Based on Parking Lot	33.5%	Same	20% min.
Parking Lot Area Shading (%)	50% in 15 years	Same	50% min. in 15 years
Water Conserving Plants (%)	70% min.	Same	70% min.
Parking			
Total Spaces	2,805 spaces (1/300sf.)	3,217 spaces (1/300sf.)	3,200 min. (1/300sf.)
Standard Spaces	1,407	1,615	1,600
Compact Spaces/ % of Total	1,333 (48%)	1,602 (50%)	1,600 50% max.
Accessible Spaces	39	48	48 min.
Aisle Width (ft.)	26'	26'	26' min.
Bicycle Parking	145	187	187 min.
Stormwater			
Impervious Surface Area (s.f.)	1,000,876 sf.	1,031,606 sf.	---
Impervious Surface (%)	80.06%	82.5%	---

Starred items indicate deviations from Sunnyvale Municipal Code requirements.

Santa Clara County Clerk-Recorder's Office
State of California

County of Santa Clara
Office of the County Clerk-Recorder
Business Division



County Government Center
70 West Hedding Street, E. Wing, 1st Floor
San Jose, California 95110 (408) 299-5665



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REGINA ALCOMENDRAS, County Clerk-Recorder
by Vanessa Ortiz, Deputy Clerk-Recorder, *[Signature]*

CEQA DOCUMENT DECLARATION

ENVIRONMENTAL FILING FEE RECEIPT

PLEASE COMPLETE THE FOLLOWING:

- 1. LEAD AGENCY: City of Sunnyvale
- 2. PROJECT TITLE: Application for a Major Moffett Park Design Review and Development Agreement Modifications.
- 3. APPLICANT NAME: Jay Paul Company PHONE: 408-730-2723
- 4. APPLICANT ADDRESS: 807 Eleventh Avenue and 1100 Enterprise Way, Sunnyvale, CA 94089
- 5. PROJECT APPLICANT IS A: Local Public Agency School District Other Special District State Agency Private Entity
- 6. NOTICE TO BE POSTED FOR 30 DAYS.

7. CLASSIFICATION OF ENVIRONMENTAL DOCUMENT

a. PROJECTS THAT ARE SUBJECT TO DFG FEES

- 1. ENVIRONMENTAL IMPACT REPORT (PUBLIC RESOURCES CODE §21152) \$ 2,839.25 \$ 0.00
- 2. NEGATIVE DECLARATION (PUBLIC RESOURCES CODE §21080(C)) \$ 2,044.00 \$ 0.00
- 3. APPLICATION FEE WATER DIVERSION (STATE WATER RESOURCES CONTROL BOARD ONLY) \$ 965.50 \$ 0.00
- 4. PROJECTS SUBJECT TO CERTIFIED REGULATORY PROGRAMS \$ 949.50 \$ 0.00
- 5. COUNTY ADMINISTRATIVE FEE (REQUIRED FOR a-1 THROUGH a-4 ABOVE) \$ 50.00 \$ 0.00
Fish & Game Code §711.4(e)

b. PROJECTS THAT ARE EXEMPT FROM DFG FEES

- 1. NOTICE OF EXEMPTION (\$50.00 COUNTY ADMINISTRATIVE FEE REQUIRED) \$ 50.00 \$ 0.00
 - 2. A COMPLETED "CEQA FILING FEE NO EFFECT DETERMINATION FORM" FROM THE DEPARTMENT OF FISH & GAME, DOCUMENTING THE DFG'S DETERMINATION THAT THE PROJECT WILL HAVE NO EFFECT ON FISH, WILDLIFE AND HABITAT, OR AN OFFICIAL, DATED RECEIPT / PROOF OF PAYMENT SHOWING PREVIOUS PAYMENT OF THE DFG FILING FEE FOR THE *SAME PROJECT IS ATTACHED (\$50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)
- DOCUMENT TYPE: ENVIRONMENTAL IMPACT REPORT NEGATIVE DECLARATION \$ 50.00 \$ 0.00

c. NOTICES THAT ARE NOT SUBJECT TO DFG FEES OR COUNTY ADMINISTRATIVE FEES

- NOTICE OF PREPARATION NOTICE OF INTENT NO FEE \$ NO FEE

8. OTHER: _____ FEE (IF APPLICABLE): \$ _____

9. TOTAL RECEIVED..... \$ 0.00

*NOTE: "SAME PROJECT" MEANS NO CHANGES. IF THE DOCUMENT SUBMITTED IS NOT THE SAME (OTHER THAN DATES), A "NO EFFECT DETERMINATION" LETTER FROM THE DEPARTMENT OF FISH AND GAME FOR THE SUBSEQUENT FILING OR THE APPROPRIATE FEES ARE REQUIRED.

THIS FORM MUST BE COMPLETED AND ATTACHED TO THE FRONT OF ALL CEQA DOCUMENTS LISTED ABOVE (INCLUDING COPIES) SUBMITTED FOR FILING. WE WILL NEED AN ORIGINAL (WET SIGNATURE) AND THREE COPIES. (YOUR ORIGINAL WILL BE RETURNED TO YOU AT THE TIME OF FILING.)

CHECKS FOR ALL FEES SHOULD BE MADE PAYABLE TO: SANTA CLARA COUNTY CLERK-RECORDER

PLEASE NOTE: FEES ARE ANNUALLY ADJUSTED (Fish & Game Code §711.4(b)); PLEASE CHECK WITH THIS OFFICE AND THE DEPARTMENT OF FISH AND GAME FOR THE LATEST FEE INFORMATION.

"... NO PROJECT SHALL BE OPERATIVE, VESTED, OR FINAL, NOR SHALL LOCAL GOVERNMENT PERMITS FOR THE PROJECT BE VALID, UNTIL THE FILING FEES REQUIRED PURSUANT TO THIS SECTION ARE PAID." Fish & Game Code §711.4(c)(3)



PLANNING DIVISION
CITY OF SUNNYVALE
P.O. BOX 3707
SUNNYVALE, CALIFORNIA 94088-3707

File Number: 2011-7170
2011-7119
No. 11-15

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

This form is provided as a notification of an intent to adopt a Mitigated Negative Declaration which has been prepared in compliance with the provisions of the California Environmental Quality Act of 1970, as amended, and Resolution #118-04.

PROJECT TITLE:

Application for a **Major Moffett Park Design Review and Development Agreement Modifications** filed by **Jay Paul Company**.

PROJECT DESCRIPTION AND LOCATION (APN):

2011-7170: Major Moffett Park Design Review for modification of Building 'D' at the Moffett Towers campus (net increase of 125,000 sf.) located at **1100 Enterprise Way**, and

2011-7119: Major Moffett Park Design Review for a new 200,000 sf. Building 5 at the Ariba/Moffett Towers Campuses located at **807 Eleventh Avenue**.

2011-7507: Modification to the Development Agreements between the City of Sunnyvale and Moffett Towers, LLC.

Both projects include a Green Building Leed Gold incentive resulting in 80% Floor Area Ratio, and require modification to the existing development agreement.

WHERE TO VIEW THIS DOCUMENT:

The **Mitigated Negative Declaration**, its supporting documentation and details relating to the project are on file and available for review and comment in the Office of the Secretary of the Planning Commission, City Hall, 456 West Olive Avenue, Sunnyvale.

This **Mitigated Negative Declaration** may be protested in writing by any person prior to 5:00 p.m. on **Tuesday, September 13, 2011**. Protest shall be filed in the Department of Community Development, 456 W. Olive Avenue, Sunnyvale and shall include a written statement specifying anticipated environmental effects which may be significant. A protest of a **Mitigated Negative Declaration** will be considered by the adopting authority, whose action on the protest may be appealed.

HEARING INFORMATION:

A public hearing on the project is scheduled for:

Monday, August 22, 2011 at 8:00 p.m. and **Tuesday, September 13, 2011** at 7:00 p.m. in the Council Chambers, City Hall, 456 West Olive Avenue, Sunnyvale.

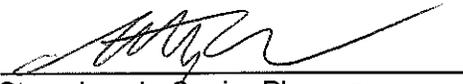
TOXIC SITE INFORMATION:

(No) listed toxic sites are present at the project location.

File#: 449

8/10/2011

Circulated On August 9, 2011

Signed: 
Steve Lynch, Senior Planner

Project Title	2011-7170 - Major Moffett Park Design Review for modification of Building 'D' at the Moffett Towers campus (net increase of 125,000 sf.), and 2011-7119 - Major Moffett Park Design Review for a new 200,000 sf. Building 5 at the Ariba/Moffett Towers campuses, and 2011-7507 - Modification to the Development Agreements between the City of Sunnyvale and Moffett Towers, LLC. Both projects include a Green Building LEED Gold incentive resulting in 80% Floor Area Ratio,.
Lead Agency Name and Address	City of Sunnyvale P.O. Box 3707, Sunnyvale, CA 94088-3707
Contact Person	Steve Lynch, Senior Planner
Phone Number	408-730-2723
Project Location	807 Eleventh Avenue and 1100 Enterprise Way
Applicant's Name	Jay Paul Company
Project Address	807 Eleventh Ave. (APN: 110-45-002), and 1100 Enterprise Way (APN: 110-01-036) Sunnyvale, CA 94089
Zoning	Moffett Park Transit Oriented Development (MPT)
General Plan	Moffett Park Specific Plan
Other Public Agencies whose approval is required	None

MOFFETT PARK SPECIFIC PLAN AND PROJECT BACKGROUND

The subject site is within the boundaries of the Moffett Park Specific Plan (MPSP). The City of Sunnyvale adopted the 1,100-acre MPSP in the spring of 2004. The MPSP contemplates build-out of high-tech corporate campus style of projects over a 20-year timeframe. The MPSP also includes a provision for a Development Reserve to allow exemplary projects the benefit of additional floor area beyond the standard FAR restrictions of the sub-districts. The Development Reserve square footage was not applied to individual parcels or general areas, but rather to the entire MPSP area.

In 2003, the Sunnyvale City Council certified the program-level MPSP Environmental Impact Report. As part of the EIR, it was found that there were significant unavoidable environmental impacts resulting from the proposed MPSP. The Council at that time opted to make statements of overriding consideration for these unavoidable impacts, and deemed them to be acceptable in view of the significant economic and social benefits which the approval of the MPSP would make possible.

The statements of overriding consideration were made for the following unavoidable impacts:

Air Quality - Future area source and vehicular emissions under the proposed Moffett Park Specific Plan may result in operational air quality impacts.

Traffic and Circulation – Freeway Operations: Implementation and subsequent build-out of the proposed General Plan Amendment would not impact any additional study freeway segments beyond those impacted under General Plan 2020 Conditions. However, the implementation and subsequent build-out of the proposed General Plan Amendment would increase the severity and level of significance of impacts along several freeway segments that would be significantly impacted under General Plan 2020 conditions.

Expressway Conditions: There are no feasible mitigations measures to reduce the level of service impacts at the Central Expressway and Oakmead Parkway (City of Santa Clara) intersection, and the Central Expressway and Bowers Avenue (City of Santa Clara) intersection.

Mathilda Avenue Corridor: The Mathilda Avenue corridor will be impacted under the proposed Project in the A.M. peak hour and the P.M. peak hour.

Housing and Population - The proposed General Plan Amendment would not allow for the future construction of residential units in the MPSP area. However, the intensity of future industrial and commercial development that could be facilitated under the proposed MPSP would generate a substantial number of jobs and would indirectly induce population and housing growth throughout the region.

Cumulative Growth Impacts - Full build-out of the MPSP, along with other foreseeable development in the area will have an overall cumulative impact on the region, affecting air quality, transportation and the jobs/housing ratio.

In 2006, a project (Jay Paul Company's Moffett Towers Lot 1 and Lot 3) was approved for a rezoning of a portion of the Lockheed-Martin campus. This project required a Subsequent Environmental Impact Report (SEIR) since the Lot 3 portion of the was proposed at a higher intensity than what is permitted under the 2004 MPSP or other Sunnyvale Municipal Code requirement, resulting in the need for an amendment to the MPSP and Lot 3's zoning. The zoning of the balance of the site (Lot 1) was unaffected. It was determined that the increased development intensity proposed has the potential to result in major revisions to the previously certified program-level MPSP EIR. Similar to the 2003 MPSP EIR, the Council at that time opted to make statements of overriding consideration for these unavoidable environmental impacts.

The current application (2011 Jay Paul Co.) does not require a subsequent EIR since it is implementing the type of project that was approved as part the MPSP and Development Reserve. The project will draw the proposed square footage from the approved Development Reserve and does not propose to create a higher intensity development than was contemplated by the MPSP or other Sunnyvale Municipal Code provision. However, an environmental review is required to determine if there are any site-specific or local impacts, if mitigation measures are required, and to properly disclose those impacts. Site-specific impacts are the result of the Development Reserve square footage being applied to specific parcels, which could not have been anticipated under the MPSP.

The current applications are projects that are tiering from the 2003 MPSP programmatic EIR and do not require a subsequent EIR under CEQA section 21166 and Guidelines section 15162. Based on the Initial Study below, the projects do not trigger the events listed in CEQA section 21166 and Guidelines section 15162.

PROJECT AND INITIAL STUDY OVERVIEW

This Initial Study and Mitigated Negative Declaration reviews two separate projects located in close proximity, but on separate parcels in separate campuses, and the Development Agreements between the City and developer. The projects are two different buildings under separate applications and have a combined environmental review and combined technical studies. The intent of combining all reports was to study the maximum potential impact rather than separating the reports that may minimize potential impacts and to simplify understanding of the impacts of the project proposals.

The first project (2011-7119) is located at 807 Eleventh Ave. (APN: 110-45-002) and is for a Major Moffett Park Design Review (MMPDR) for the addition of a new 200,000 sf. Building 5 at the Ariba/Moffett Towers campuses.

The second project (2011-7170) is located at 1100 Enterprise Way (APN: 110-01-036) and is for a Major Moffett Park Design Review for modification of Building 'D' at the Moffett Towers campus (net increase of 125,000 sf.) Both projects include Green Building LEED Gold incentive resulting in 80% Floor Area Ratio, and require modification to the existing Development Agreement approved by Council.

The third application (2011-7507) addressed the modification to the Development Agreements between the City of Sunnyvale and Moffett Towers, LLC.

DETAILED PROJECT DESCRIPTIONS

807 Eleventh Avenue: The project site is located at 801-811 11th Avenue within a 26.56 acre area. The base project address 807 Eleventh Ave. is used as a reference only for purposes of this report and the final address number will be determined at the time of Building Permit issuance for the new building. The project is located close to the intersection of US Freeway 101 and South Bay Freeway 237 and east of The Moffett Airfield. The immediate neighborhood is generally campus office use and consists of mostly low-to-mid-rise office and R&D campus/buildings.

The site is currently used as a corporate office campus (Ariba) and consists of four office buildings (4-stories each), one fitness center, and a parking structure. This project proposes to construct a new 5-story office building at the surface parking area at the north-east corner of the site. It will add 200,000 sf. of office space to the campus, bringing to a total office square footage to 851,560 sf. (including the existing 15,000 sf. Fitness Center). The new building will have a similar plan configuration and exterior architecture to the existing office buildings. With this new building, the total Ariba campus will have a Floor Area Ratio (FAR) of 74% and a combined total of 80% FAR with the adjacent Moffett Towers Lot 1 campus (86% FAR).

New parking will be provided by a new 3.5-story parking structure (with a basement) and a basement garage under the new office building. The structure is proposed to be located at the south-east corner of the site – close to the intersection of Innovation Way and West Moffett Drive. A total of 1,217 cars will be provided at 1/300 (or 3.3/1,000) ratio for the new office building. Lost surface parking stalls due to the new construction will also be replaced and provided for in this structure. New landscaped plaza and walkways will connect this structure and the new office building to the existing campus circulation and green space.

The new office building and parking structure are sited to respect the pattern/clusters of buildings at the existing campus. They will have the same architectural style and scale to these buildings and will be finished with similar building materials such as curtain walls, metal panels and GFRC panels. Additionally, the new office building will be LEED-Gold certified.

1100 Enterprise Way: The project site is located at 1000-1100 Enterprise Way. It is located close to the intersection of US Freeway 101 and South Bay Freeway 237 and east of The Moffett Airfield. The immediate neighborhood is generally for office use and consists of mostly low-to-mid-rise office and R&D campus/buildings.

The Lot 3 portion of the Moffett Towers campus was previously approved for office and R&D uses and three, 8-story office towers have been constructed, together with a 2-story Amenities building and parking garage (Garage 3), which is a surface parking lot, plus 3-level garage. The approved FAR is 70%. This project proposes to construct an expanded Building D, which is an 8-story office building with an additional floor area of 125,000 sf. With this new addition, the total development area at Moffett Towers Lot 3 will be at 1,000,058 sf. with and a FAR of 80%.

The expanded Building D will be at the same location as the previously approved project. Both the site and building will have some adjustments to the original design due to the larger footprint, however the building characteristics (style, finishes and materials) and connectivity to the campus remains intact. Re-designed entry plaza and walkways will connect to the existing campus circulation and green space. Additionally, this building will have sustainable design features and energy-efficient building/mechanical systems. Additionally, the expanded building will be LEED Gold certified

A new surface, plus 2.5 level parking garage will also be constructed to provide the added parking needs. The new parking structure (Garage 4) is located at the north-east corner of the campus, which is currently a surface parking lot. It will share the same architectural style, scale and finishes to the existing Garage 3 such as integral color pre-cast concrete panel. A total of 655 parking spaces will be provided to accommodate the additional development area, as well as, lost surface parking stalls due to the project.

The project meets all of the applicable City Municipal Code requirements and the applicant is not seeking any deviations from code at this time.

Surrounding Uses and Setting: The sites are located within the MPSP area which is generally bounded by Lockheed-Martin Corporation to the north and east, Innovation Way and Onizuka Air Force Station to the east, as well as a variety of other office, light industrial, and research and development uses to the east. The Valley Transportation Authority (VTA) Tasman West light rail lines and West Moffett Park Drive to the south. H Street and Moffett Federal Airfield are located to the west. The Moffett Park area is currently developed with corporate headquarters, office, and research and development uses.

Since the 1960s, the MPSP area has had a large defense industry presence (the Air Force, the Navy, Lockheed-Martin Corporation, and the National Aeronautics and Space Administration [NASA]). The MPSP area also contains numerous low-rise warehouses and industrial/business park buildings, as well as cafes, restaurants, hotels, and a private college (Cogswell College). Beginning in the late 1990s several high-tech businesses developed corporate campuses in the area, including Juniper Networks, Yahoo Inc., Interwoven, Net App, and Ariba. The Moffett Federal Airfield (located west of the Project site, across H Street) is where NASA continues to conduct federal aeronautical and aviation operations. Manufacturing, research and development, aircraft hangers, and office buildings currently occupy the site. A VTA light rail station is located in the southern portion of the site along West Moffett Park Drive. The surrounding MPSP area is developed with office, technology, research and development, and corporate headquarters space.

Development Agreements: The third application (2011-7507) addressed the modification to the Development Agreements between the City of Sunnyvale and Moffett Towers, LLC. In 2006 the applicant entered into two Development Agreements with the City to allow for development entitlements of Lot 1 and Lot 3 and reservation of certain areas of the Ariba campus as they relate to the Mary Avenue

extension. The Development Agreements consider benefits to the City which included: accelerated payment of the required Housing Mitigation fees; refinement of the reservation area on the Ariba parcel at no cost to the City; construction of replacement parking on the Ariba parcel at no cost to the City; formal certification of the campus under the LEED program (at the Certified level); additional parking spaces on the Ariba parcel in exchange for an increase in their TDM program goals; and, an extended entitlement period.

The current project includes a modification to these Development Agreements for Moffett Towers and the Ariba campus. The Agreements are being reviewed under a separate application that will be heard at the same City Council meeting. They include modifications to the projects descriptions, clean-up of outdated sections, agreement to accelerated payment of the required Housing Mitigation fees, updated TDM program goals; and an extended entitlement period.

EVALUATION OF ENVIRONMENTAL IMPACTS:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 17, "Earlier Analysis," may be cross-referenced).
5. Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c) (3) (d). In this case, a brief discussion should identify the following:
6. Earlier Analysis Used. Identify and state where they are available for review.
7. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
8. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project
9. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Utilities/Service Systems |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Mandatory Findings of Significance |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Population/Housing | |

MANDATORY FINDINGS OF SIGNIFICANCE (see checklist for further information):

Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? Yes
 No

Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects)? Yes
 No

Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Yes
 No

DETERMINATION: On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the proposed project MAY have a "potential significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Checklist Preparer: Steve Lynch

Date: August 8, 2011

Title: Senior Planner

City of Sunnyvale

Signature: 

Planning	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
1. Aesthetics -Substantially damage scenic resources, including, but not limited to trees, historic buildings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale General Plan Map, Open Space Sub-element City Guidelines www.sunnyvaleplanning.com Project Description
2. Aesthetics -Substantially degrade the existing visual character or quality of the site and its surroundings including significant adverse visual changes to neighborhood character?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale General Plan Map, Open Space Sub-element City Guidelines www.sunnyvaleplanning.com Project Description
3. Aesthetics -Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale General Plan Map, Open Space Sub-element City Guidelines www.sunnyvaleplanning.com Project Description
4. Population and Housing - Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) in a way that is inconsistent with the Sunnyvale General Plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sunnyvale Land Use and Transportation Element of the General Plan, General Plan Map www.sunnyvaleplanning.com Project Description
5. Population and Housing -Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Housing Sub-Element, Land Use and Transportation Element and General Plan Map www.sunnyvaleplanning.com Project Description
6. Population and Housing -Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Housing Sub-Element www.sunnyvaleplanning.com Project Description
7. Land Use Planning - Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale General Plan Map www.sunnyvaleplanning.com Project Description

Planning	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
8. Land Use Planning conflict - With the Sunnyvale General Plan, Zoning Ordinance, San Francisco Bay Conservation and Development Commission (BCDC) area or related specific plan adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Land Use and Transportation Element, Sunnyvale General Plan, Title 19 (Zoning) of the Sunnyvale Municipal Code http://qcode.us/codes/sunnyvale/view.php?topic=19&frames=off
9. Transportation and Traffic - Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Parking Requirements (Section 19.46) in the Sunnyvale Municipal Code. http://qcode.us/codes/sunnyvale/view.php?topic=19-4-19_46&frames=off Traffic Study by Fehr & Peers, dated July 14, 2011.
10. Hazards and Hazardous Materials - For a project located the Moffett Field AICUZ or 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 result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Moffett Field AICUZ, Sunnyvale Zoning Map, Sunnyvale General Plan Map. www.sunnyvaleplanning.com
11. Hazards and Hazardous Materials - For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	There are no private airstrips in or in the vicinity of Sunnyvale
12. Hazards and Hazardous Materials - For a project within the vicinity of Moffett Federal Airfield, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Moffett Field AICUZ, Sunnyvale Zoning Map, Sunnyvale General Plan Map www.sunnyvaleplanning.com
13. Agricultural Resources - Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Zoning Map www.sunnyvaleplanning.com

Planning	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
14. Noise - Exposure of persons to or generation of noise levels in excess of standards established in the Noise Sub-Element, Noise limits in the Sunnyvale Municipal Code, or applicable standards of the California Building Code?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Noise Sub-Element, SMC www.sunnyvaleplanning.com 19.42 Noise Ordinance http://qcode.us/codes/sunnyvale/view.php?topic=19&frames=off .
15. Noise -Exposure of persons to or generation of excessive ground borne vibration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Noise Sub-Element www.sunnyvaleplanning.com Project Description
16. Noise - A substantial permanent or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Noise Sub-Element www.sunnyvaleplanning.com
17. Biological Resources - Have a substantially adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	General Plan Map Project Description
18. Biological Resources -Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	General Plan Map Project Description
19. Biological Resources -Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	General Plan Map Project Description
20. Biological Resources -Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SMC 19.90 Tree Preservation Ordinance Sunnyvale Inventory of Heritage Trees Robert Booty Arborist's Reports, April, 6 2011.

Planning	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
21. Biological Resources - Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description
22. Historic and Cultural Resources - Cause a substantial adverse change in the significance of a historical resource or a substantial adverse change in an archeological resource?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Heritage Preservation Sub-Element, Sunnyvale Inventory or Heritage Resources
23. Historic and Cultural Resources - Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Project Description. Planned grading will disturb the site and may affect sub-surface resources if they exist.
24. Public Services - Would the project result in substantial adverse physical impacts associated with the provision of new or expanded public schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The following public school districts are located in the City of Sunnyvale: Fremont Union High School District, Sunnyvale Elementary School District, Cupertino Union School District and Santa Clara Unified School District. Project Description
25. Air Quality - Conflict with or obstruct implementation of the BAAQMD air quality plan? How close is the use to a major road, hwy. or freeway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BAAQMD CEQA Guidelines Sunnyvale General Plan Map Sunnyvale Air Quality Sub-Element www.sunnyvaleplanning.com Environ Report, May 2011
26. Air Quality - Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BAAQMD CEQA Guidelines Project Description Environ Report, May 2011
27. Air Quality - Would the project conflict with any applicable plan, policy or regulation of any agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BAAQMD CEQA Guidelines Project Description
28. Air Quality - Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BAAQMD CEQA Guidelines Sunnyvale Air Quality Sub-Element Project Description

Planning	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
29. Air Quality -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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BAAQMD CEQA Guidelines Sunnyvale Air Quality Sub-Element www.sunnyvaleplanning.com Project Description
30. Air Quality -Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BAAQMD CEQA Guidelines Sunnyvale Air Quality Sub-Element www.sunnyvaleplanning.com Project Description Environ Report, May 2011
31. Seismic Safety -Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Safety and Safety Sub-Element of the Sunnyvale General Plan www.sunnyvaleplanning.com
32. Seismic Safety - Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Safety and Safety Sub-Element of the Sunnyvale General Plan www.sunnyvaleplanning.com
33. Seismic Safety-Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Safety and Safety Sub-Element of the Sunnyvale General Plan www.sunnyvaleplanning.com
34. Seismic Safety-Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Safety and Safety Sub-Element of the Sunnyvale General Plan www.sunnyvaleplanning.com

Further Discussion if "Less than Significant" with or without mitigation:

4. Population and Housing (Less than Significant with Mitigation): The 325,000 sf. of office is consistent with the allowable 70% FAR of the existing zoning (Moffett Park Transit Oriented Development - MPT) and General Plan designation (Moffett Park Specific Plan) of the site. The project is also consistent with the additional 10% FAR for the City's Green Building Incentive (previously discussed in the Detailed Project Description). The new office square footage would create opportunities for new jobs and would cause a slight increase in the City's Jobs/Housing balance. The project would be required to pay Housing Mitigation fees (\$9.08/sf.) for the new square footage proposed. Based on a preliminary

calculation, the current fee for 807 Eleventh would be \$1,816,000. The preliminary fee for 1100 Enterprise Way is \$1,135,000. The Housing Mitigation fees are intended to mitigate potential new jobs by providing housing funds for the creation of new housing units. Therefore, the project would not induce substantial population growth and will mitigate potential job growth, therefore will not be inconsistent with the Sunnyvale General Plan.

The following mitigation measure shall apply to the projects:

- WHAT: The project would be required to pay Housing Mitigation fees (\$9.08/sf.) for the new square footage proposed.
- WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid when the MMPDR is approved. Conditions will be applicable during the construction of the project.
- WHO: The developer shall be required to pay the mitigation fees and the City shall implement the mitigation through City sponsored housing creation programs.
- HOW: The fees shall be paid to the City and the City shall implement the mitigation through City sponsored housing creation programs.

20. Biological Resources (Less than Significant): An Arborist's Report was completed by Robert Booty Arborist's Reports, dated April 6 and 9, 2011. This study is available for review at the City of Sunnyvale's One-Stop Counter. The reports reviewed the existing trees on-site and conclude that as part of the project, a number of trees will need to be removed to allow the construction of the new buildings. Protected under SMC is defined as any tree greater than 38" in circumference, measured at 4.5' from the adjacent grade.

At the 1100 Enterprise Way site, 19 trees are proposed for removal in the area where Building D will be expanded. In the area where the new parking structure is proposed, 93 will need to be removed. None of these 112 trees in either location are considered protected under SMC.

At the 807 Eleventh site there are 99 trees proposed for removal. In the area of the new parking structure there are 104 trees proposed for removal. None of these 203 trees in either location are considered protected under SMC.

Since none of the trees are considered of a protected size under SMC, this impact is less than significant.

23. Historic and Cultural Remains (Less than Significant with Mitigation): The proposed project includes grading and land disturbance for the new buildings and parking structures. Although there are no recorded archeological sites in the immediate area of the proposed building locations, there still remains the possibility of discovery of Native American remains during grading since there are archeological sites in the greater vicinity. In the event of a discovery, project grading could result in potential disturbance of subsurface cultural resources which would result in a significant impact unless mitigated. There are no surface historic resources currently known to be on the project sites. Although the discovery of cultural resources on these sites are not anticipated and the following mitigation measure has been included in the project to reduce the potential impact to a less than significant level:

- WHAT: 1) For projects involving substantial ground disturbance, the individual project sponsor shall be required to contact the California Historical Resources Information System (CHRIS) to determine whether the particular project is located in a sensitive area. Future development projects that the CHRIS determines may be located in a sensitive

area--i.e., on or adjoining an identified archaeological site--shall proceed only after the project sponsor contracts with a qualified archaeologist to conduct a determination in regard to cultural values remaining on the site and warranted mitigation measures.

- 2) If a significant archaeological resource is identified during grading, the City and project proponent shall seek to avoid damaging effects to the resource. Preservation in place to maintain the relationship between the artifact(s) and the archaeological context is the preferred manner of mitigating impacts to an archaeological site. Preservation may be accomplished by:
 - Planning construction to avoid the archaeological site;
 - Incorporating the site within a park, green space, or other open space element;
 - Covering the site with a layer of chemically stable soil; or
 - Deeding the site into a permanent conservation easement.

- 3) When in-place mitigation is determined by the City to be infeasible, a data recovery plan, which makes provisions for adequate recovery of the scientifically consequential information about the site, shall be prepared and adopted prior to any additional excavation being undertaken. Such studies must be submitted to the California Historical Resources Regional Information Center. If Native American artifacts are indicated, the studies must also be submitted to the Native American Heritage Commission. Identified cultural resources shall be recorded on form DPR 422 (archaeological sites). Mitigation measures recommended by these two groups and required by the City shall be undertaken, if necessary, prior to resumption of construction activities.

A data recovery plan and data recovery shall not be required if the City determines that testing or studies already completed have adequately recovered the necessary data, provided that the data have already been documented in another EIR or are available for review at the California Historical Resource Regional Information Center [CEQA Guidelines section 15126.4(b)].

In the event that subsurface cultural resources are otherwise encountered during approved ground-disturbing activities for a project area construction activity, work in the immediate vicinity shall be stopped and a qualified archaeologist retained to evaluate the finds following the procedures described above.

If human remains are found, special rules set forth in State Health and Safety Code section 7050.5 and CEQA Guidelines section 15126.4(b) shall apply.

WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid when the MMPDR is approved. Conditions will be applicable during the construction of the project.

WHO: The property owner will be solely responsible for implementation and maintenance of these mitigation measures.

HOW: The conditions of approval require these mitigation measures to be incorporated into the construction plans.

25. and 26. Air Quality (Less than Significant with Mitigation): The Bay Area Air Quality Management District (BAAQMD) 2011 CEQA Guidelines thresholds of significance provide that a development project would have a significant cumulative impact unless: 1) the project can be shown to be in compliance with

a qualified Climate Action Plan, 2) project emissions of CO₂ equivalent greenhouse gases (CO₂ e) are less than 1,100 metric tons per year, or 3) project emissions of CO₂ equivalent greenhouse gases are less than 4.6 metric tons per year per service population (residents plus employees). The City of Sunnyvale does not have a Climate Action Plan at the time of the writing of this Initial Study.

The applicant provided an Air Quality and Greenhouse Gas Analysis for the two projects. The study was completed by Environ on May 18, 2011 and is available for review at the City of Sunnyvale's One-Stop Counter. The report concludes that the project will result in both one-time (construction related) and annual (operational-related) emissions. Environ's analysis indicates that the project does not exceed the thresholds of significance according to the current BAAQMD CEQA guidelines.

With respect to the one-time construction-related air quality impacts, the project requires grading of the sites, demolition, and significant hauling of construction materials into the sites. Project grading and construction may introduce temporary and short-term dust into the air and pollution from construction equipment, therefore temporarily affect air quality. While this impact does not exceed the BAAQMD levels of significance, standard City mitigation measures are required to minimize any potential impacts to the surrounding population (non-residential).

The following mitigation measures shall apply to the projects:

WHAT: Permits must be obtained from the City of Sunnyvale (grading permit and Storm Water Pollution Prevention Plan) and BAAQMD (J-Permit) prior to demolition or new construction. The City of Sunnyvale permit shall, amongst others, specifically include the following mitigation measures:

1. Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences shall be kept damp at all times.
2. Cover all hauling trucks or maintain at least two feet of freeboard.
3. Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.
4. Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads.
5. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., previously-graded areas that are inactive for 10 days or more).
6. Replant vegetation in disturbed areas as quickly as possible.
7. Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles.
8. Limit traffic speeds on the construction sites to 15 mph.
9. Suspend construction activities that cause visible dust plumes to extend beyond the construction site.
10. During site demolition activities, removal or disturbance of any materials containing asbestos, lead paint or other hazardous pollutants will be conducted in accordance with BAAQMD rules and regulations (refer to Section 2.9, Hazards and Hazardous Materials).
11. A Disturbance Coordinator will be assigned to the project for the full duration of asbestos abatement, demolition activities, grading, excavation, and building construction. This coordinator will ensure that all air quality mitigation measures are enforced. In addition, the Disturbance Coordinator will respond to complaints from the public regarding air quality issues in a timely manner. The contact information for this Coordinator will be posted in plain view at the project site. The Coordinator will also be responsible for notifying adjacent properties of the demolition schedules.

12. Opacity is an indicator of exhaust particulate emissions from off-road diesel powered equipment. The Disturbance Coordinator shall ensure that emissions from all construction diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Any equipment emitting dark smoke three minutes after start up is in violation of this measure.
13. Diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite.
14. Properly tune and maintain equipment for low emissions.

WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid when the MMPDR is approved. Conditions will be applicable during the construction of the project.

WHO: The property owner will be solely responsible for implementation and maintenance of these mitigation measures.

HOW: The conditions of approval will require these mitigation measures to be incorporated into the construction plans.

Responsible Division: Planning Division

Completed by: Steve Lynch

Date: August 8, 2011

Transportation	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
35. Exceeds the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all modes of transportation including nonmotorized travel and all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian walkways, bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	City's Land Use and Transportation Element, Santa Clara County Transportation Plan. Traffic Study by Fehr & Peers, dated July 14, 2011.
36. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measurements, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Santa Clara County Congestion Management Program and Technical Guidelines (for conducting TIA and LOS thresholds).
37. Results in a change in air traffic patterns, including either an increase in air traffic levels or a change in flight patterns or location that results in substantial safety risks to vehicles, bicycles, or pedestrians?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale General Plan including the Land Use and Transportation Element.
38. Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	City and CA Standard Plans & Standard Specifications. Traffic Study by Fehr & Peers, dated July 14, 2011.
39. Conflict with adopted policies, plans, or programs regarding public transit or nonmotorized transportation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sunnyvale Bicycle Plan, VTA Bicycle Technical Guidelines, and VTA Short Range Transit Plan. Traffic Study by Fehr & Peers, dated July 14, 2011.

Transportation	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
40. Affect the multi-modal performance of the highway and/or street and/or rail and/or off road nonmotorized trail transportation facilities, in terms of structural, operational, or perception-based measures of effectiveness (e.g. quality of service for nonmotorized and transit modes)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	VTA Community Design and Transportation Manual.
41. Reduce, sever, or eliminate pedestrian or bicycle circulation or access, or preclude future planned and approved bicycle or pedestrian circulation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sunnyvale Bicycle Plan, Pedestrian and Bicycle Opportunities Studies and associated capital projects. Traffic Study by Fehr & Peers, dated July 14, 2011.
42. Cause a degradation of the performance or availability of all transit including buses, light or heavy rail for people or goods movement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	VTA Transit Operations Performance Report, VTA Short Range Transit Plan, and Valley Transportation Plan for 2035.

Further Discussion if "Less Than Significant" with or without mitigation:

35., 38. and 39. Transportation (Less than Significant with Mitigation) – A Traffic Impact Analysis (TIA) has been prepared by Fehr & Peers, dated July 14, 2011. This study is attached to this Initial Study and is available for review at the City of Sunnyvale's One-Stop Counter.

The Fehr & Peers report presents the results of the TIA and concludes there are no new significant impacts resulting from the projects, which cannot be mitigated to be less than significant. Although the project would not result in any significant traffic impacts, the project would be required construct a number of improvements and to pay an impact mitigation fee. The anticipated Traffic Impact Fee (TIF) is approximately \$910,264 for 807 Eleventh and \$568,915 for 1100 Enterprise. These TIFs will be used by the City as part of the ongoing study and upgrade of the City's transportation systems to offset the contribution of project-generated traffic on local roadways. The project would result in a less than significant traffic impact.

The following is the executive summary from the TIA:

PROJECT TRAFFIC ESTIMATES

The amount of traffic anticipated to be added to the surrounding roadway system by the proposed projects were estimated based data published in Institute of Transportation Engineers' (ITE) *Trip Generation* 8th Edition (2008). Trip generation estimates for the Ariba campus were developed by incorporating the campus size both with and without the expansion into the trip generation equations for "General Office" (Land Use 710) to account for the economies of scale that would result. Similarly, trip estimates for the Moffett Towers expansion were developed by incorporating the building size both with and without the expansion into the trip generation equation for "Corporate Headquarters" land use.

Although the approved Moffett Towers Building D is not currently constructed, only the trips generated by the additional 125,000 sf. of Building D building and the new 200,000 sf. Ariba building were used to assess Project impacts. Traffic for the approved 207,956 sf. Moffett Towers Building D was included under Background No Project and Cumulative No Project Conditions analysis.

Trip reductions of 15 to 30 percent are required as part of the Transportation Demand Management (TDM) program for the campuses; however, the VTA guidelines only allow credit for a maximum 9.5 percent reduction on vehicle trips for projects near a light rail station that have an effective TDM program. A 9.5 percent reduction was applied to the project trip estimates to determine the number of net new trips generated by the project. The proposed project is estimated to generate 2,064 net new daily trips, 339 net new AM peak-hour trips, and 334 net new PM peak-hour trips.

The City Council policy to promote a range of transportation options in the City, one of which is the TDM program. The intent of the TDM programs is to reduce trips coming to and leaving from employment centers or multi-family residential projects. The programs are generally found to be successful at reducing peak hour trips in Sunnyvale. TDM programs are reviewed annually by City staff and include penalty clause for non-compliance. The penalties are calculated by making an assumption on the cost per employee for a successful TDM program, and the value of the resources required to achieve a percent of reduction in trip generation. The logic behind the penalty fee structure is that the fees increase if the company does not achieve its TDM goals. Therefore, there is a built-in incentive for a company to maintain a program that achieves its goal

INTERSECTION IMPACTS AND MITIGATION MEASURES

Existing Plus Project Conditions

Measured against the City of Sunnyvale's, the City of Mountain View, and VTA's level of service standards, the project is not expected to have significant impacts at any of the study intersections under Existing plus Project conditions; therefore, no mitigation is required.

Background Plus Project Conditions

Based on the City of Sunnyvale's, the City of Mountain View's, and VTA's impact criteria the project is expected to have a significant impact at the following seven intersections:

- Int. 2. Enterprise Way/Building D Site Access (South) –Private streets
- Int. 3. Enterprise Way/11th Avenue - Private streets
- Int. 8. Enterprise Way/Manila Drive/Moffett Park Drive
- Int. 11. Mathilda Avenue/Moffett Park Drive
- Int. 12. Mathilda Avenue/SR 237 Westbound Ramps
- Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps
- Int. 21. Ellis Street/Manila Drive

The following mitigation measures are required to mitigate project impacts:

Int. 2. Enterprise Way/Building D Site Access (South)

The intersection is projected to operate at unacceptable levels and meet the MUTCD and California Supplement peak hour volume warrant during the PM peak hour. Because Enterprise Way is a private roadway, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for signalization. The project's impact will be less-than-significant based on City

standards with the installation of a traffic signal if additional MTUCD and California Supplement warrants are met after the addition of project traffic.

Alternatively, the project's impact at the Enterprise Way/Building D Site Access (South) can be mitigated to less-than-significant levels with the provision of an approximately two-car refuge lane for the westbound left-turn movements. This mitigation would require some modifications to the existing raised median to accommodate the alternative mitigation measure.

Additionally, although VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips, the Moffett Towers TDM program is required to reduce peak hour trips by 30 percent, based on the guidelines from the MPSP. With a 30 percent reduction in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be less-than-significant; however, the peak hour volume warrant would still be met.

Int. 3. Enterprise Way/11th Avenue

The Enterprise Way/11th Avenue intersection is projected to operate unacceptably if not signalized. Because Enterprise Way and 11th Avenue are private roadways, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for activation of the traffic signal. The project's impact will be less-than-significant based on City standards with the traffic signal already built at this location and currently not in full operation.

Additionally, although VTA guidelines only allow credit for a maximum 9.5 percent reduction on vehicle trips, the Ariba Campus TDM program is required to reduce peak hour trips by 15 percent and the Moffett Towers TDM program requires a 30% reduction. With the reduction of 15 percent in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be less-than-significant.

Int. 8. Enterprise Way/Manila Drive/Moffett Park Drive

The proposed Mary Avenue Extension project would reduce traffic on 11th Avenue and Enterprise Way; thus reducing the impact at the Enterprise Way/Manila Drive/Moffett Park Drive. The Mary Avenue Extension project is programmed in the VTA's VTP 2035 list of constrained projects (the VTP 2035 is the VTA's long-range transportation improvement planning document) and is included in the City's TIF program with the City's contribution funded through the payment of TIF fees by new development projects. Thus, payment of the City's TIF would mitigate the project impact to less-than significant levels. The Mary Avenue Overcrossing is in the preliminary engineering/environmental phase of project development."

As an alternative to the Mary Avenue Overcrossing, the eastbound through lane on Manila Drive could be converted to a shared through/left-turn lane, thus enabling two lanes of traffic to turn left onto Enterprise Way. This improvement would also require the signal phasing on Manila Drive-Moffett Park Drive to be converted from protected left-turn phasing to split phasing to accommodate the shared through/left-turn lane. With this improvement the intersection is projected to operate at acceptable levels during both peak hours and the impact would become less-than-significant. This improvement can be considered a feasible interim improvement should the Mary Avenue Overcrossing not move forward."

Int. 11. Mathilda Avenue/Moffett Park Drive

As estimated in the *Mary Avenue Overcrossing Final Traffic Operations Report*, the Mary Avenue Overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the AM peak hour and 23 percent in the PM peak hour. Construction of the Mary Avenue

Overcrossing, along with reconfiguration of the SR 237/Mathilda Avenue ramp intersections, would reduce the impact to a less-than-significant level. Payment of the City's TIF would constitute the project's fair share contribution. These improvements consist of:

Re-aligning Moffett Park, east of Mathilda Avenue, to connect to 5th Avenue via Bordeaux Avenue;

Shifting the SR 237 Westbound Off-ramp 150 feet to the north to align with Moffett Park/Mathilda Avenue;

Removing SR 237 westbound on-ramp and constructing a direct southbound right-turn on-ramp from Mathilda Avenue to US 101 north ;

These improvements are programmed in both the City's Transportation Strategic Program and the VTP 2035 list of constrained projects.

Int. 12. Mathilda Avenue/SR 237 Westbound Ramps

The identified improvements for the Mathilda Avenue/Moffett Park Drive intersection would also mitigate the impacts identified for the Mathilda Avenue/SR 237 Westbound Ramp intersection, since they include the elimination of this intersection. Payment of the City's TIF would constitute the project's fair share contribution.

Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps

The identified improvements for the Mathilda Avenue/Moffett Park Drive intersection would also mitigate the impacts identified for the Mathilda Avenue/SR 237 Westbound Ramp intersection, since they include modifications to this intersection. Additionally, the Mary Avenue overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the AM peak hour and 23 percent in the PM peak hour; the intersection would operate acceptably with these volume reductions. Payment of the City's TIF would constitute the project's fair share contribution.

Int. #21. Ellis Street/Manila Drive

The addition of a westbound left-turn lane at this un-signalized intersection would reduce the PM impact to a less-than-significant level and the project would operate at acceptable service levels during both peak periods. The project contributes approximately 14 percent of the total growth to the intersection. Payment of a fair share contribution or comparable mechanism as identified by the City of Mountain View to provide the left turn lane constitutes mitigation for this impact.

Cumulative Plus Project Conditions

Based on the City of Sunnyvale's, the City of Mountain View's, and VTA's impact criteria the project is expected to have a significant impact at the seven impacted intersections identified under Background Conditions. The same mitigation measures identified under Background Conditions would mitigate the intersection impacts to less-than-significant levels.

FREEWAY SEGMENT IMPACTS AND MITIGATION MEASURES

Existing Plus Project Conditions

The proposed project will not have a significant impact on any of the study freeway segments, as the addition of project traffic will not degrade operations on any segment to unacceptable LOS F or exacerbate unacceptable LOS F operations by adding traffic equal to the threshold of

significance of at least one percent of a freeway segment's capacity; therefore, no mitigation is required.

Background Plus Project Conditions

Measured against VTA's level of service standards and impact criteria, the project is not expected to have significant impacts at any of the study freeway segments under Background plus Project conditions; therefore, no mitigation is required.

Cumulative Plus Project Conditions

Similar to Background Conditions, the project is not expected to have significant impacts at any of the study freeway segments under Cumulative plus Project conditions; therefore, no mitigation is required.

TRANSIT SERVICE

The proposed project will generate demand for existing transit services in the area, which can be accommodated by the existing supply. Transit impacts are considered significant if the proposed project conflicts with existing or planned transit facilities or generates potential transit trips and does not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops. Based on these criteria, the project would not have a potentially significant impact on transit service.

BICYCLE AND PEDESTRIAN FACILITIES

The proposed Project would generate bicycle demand on-site and on the adjacent roadways, which generally have adequate bicycle facilities, as demonstrated below. The project sites have bicycle access via the bicycle lanes on 11th Avenue and Enterprise Way; however, no bicycle lanes are provided on Moffett Park Drive, which provides access to 11th Avenue and Enterprise Way. The City has identified the construction of bike lanes on Moffett Park Drive as a future bicycle improvement. In one segment, due to the lack of available right-of-way between the light-rail tracks and the SR-237 westbound on-ramp, bike lane construction is potentially infeasible between Innovation Way and Mathilda Avenue. Sharrows (shared bike lanes and roadways) and signage will be used to alert vehicles to the potential presence of bicyclists in the Moffett Park Drive segment between Mathilda Avenue and Innovation Way and the City will continue to study the possibility of adding a bike lane in this segment. Bike lane construction is feasible between Innovation Way and Enterprise Way along the Ariba and Moffett Towers frontages. The project will pay provide funding for these improvements.

Sidewalks would be provided on Enterprise Way, 11th Avenue, and 5th Avenue along the project frontages. Pedestrian connections would be provided between the proposed buildings, parking lots, and parking garages. A pedestrian pathway would link the light rail station located south of the Ariba campus, to the new building at the Ariba Campus and to the 11th Avenue/Enterprise Way sidewalks that continue to Building D at Moffett Towers. Sidewalks are also included in the City's TIF program.

Overall, because the project is an addition to recent construction, bike improvements will be provided, most of the existing infrastructure appropriately accommodates bicyclists and pedestrians such that the project has a less-than-significant impact.

VEHICLE AND BICYCLE PARKING

The proposed parking supply in the Ariba and Moffett Towers' site will each provide sufficient parking to accommodate the new office developments, as well as, replace any parking that is lost due to construction of the project and construction of the Mary Avenue Extension.

Both the Ariba and Moffett Towers projects will provide Class I and Class II bicycle parking facilities. Due to the configuration of the Moffett Towers site, the bicycle parking cannot be located closer to the building than in the proposed parking garage. The Ariba project will provide its bicycle parking at the building entrance.

SITE ACCESS AND ON-SITE CIRCULATION

Ariba Campus Expansion

The following site-access and on-site circulation improvements are recommended to improve access to the Ariba Campus Site:

The current northbound left-turn pocket on Innovation Way is approximately 75 feet long and thus should ideally be extended up to 50 feet more to the extent feasible within the existing right-of-way.

To better facilitate vehicle circulation at this intersection, entrance approaches should be signed and stop controlled. This will mitigate traffic capacity and design feature hazards. The project will be required to provide this improvement.”

MOFFETT TOWERS CAMPUS EXPANSION

The following site-access and on-site circulation improvements are recommended to improve access to the Moffett Towers Site:

The project applicant should consider adding a parking management program. Such a program could either assign parking based on building (i.e. Buildings D, E, and H park in the existing garage and buildings F and G park in the proposed garage). Parking garage access can be re-assessed as the tenants begin to fill the buildings.

To better facilitate vehicle circulation the garage exits onto the main drive aisles should be signed as stop controlled.

CONSTRUCTION IMPACTS

The Moffett Towers project will have minimal construction impacts due to traffic and use of parking lots for construction related activity. The Ariba site will need to coordinate with the surrounding properties to provide for employee parking during construction of the office building and garage.

Note on Intersections 2 and 3: Both intersections are private street intersections. The City's transportation analysis document analyzes the private streets utilizing the City impact criteria because the VTA TIA guidelines require an analysis of site circulation, and because the City has an interest in assuring that the private street system functions well enough not to impact traffic on City streets. However, the City does not have an explicit LOS policy for private streets and the applicant is responsible for designing and constructing streets that meet Federal and State criteria. City standards are utilized for reference only rather than to determine compliance with a CEQA threshold or lack thereof.

Mitigation Measures:

Based on the Fehr & Peers TIA, the following mitigation measures shall apply to the projects in addition to the required TIF payments intended for the construction of the Mary Avenue overcrossing:

Intersections:

WHAT: 1) Intersection #2. Enterprise Way/Building D Site Access (South): Monitoring of MUTCD and California Supplement traffic signal warrants. Should signal warrants be met, installation of a City standard traffic signal, the provision of an approximately

two-car refuge lane for the westbound left-turn movements including median improvements.

- 2) Intersection #3. Enterprise Way/11th Avenue: Monitoring of MUTCD + California Supplement traffic signal warrants and full activation of the existing traffic signal at such time that warrants are met
- 3) Intersection #8. Enterprise Way/Manila Drive/Moffett Park Drive: Payment of TIF's for the construction of the Mary Avenue Overcrossing. As a possible interim improvement, should progress not continue on the Mary Avenue Overcrossing, the eastbound through lane on Manila Drive shall be converted to a shared through/left-turn lane. The intent is to enable two lanes of traffic to turn left onto Enterprise Way. The signal phasing on Manila Drive-Moffett Park Drive shall be converted from protected left-turn phasing to split phasing to accommodate the shared through/left-turn lane.
- 4) Intersection #21. Ellis Street/Manila Drive: There shall be a westbound left-turn lane added. Project shall provide a fair share financial contribution or other equivalent measure to the satisfaction of the City of Mountain View for completing this improvement."

WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid when the MMPDR is approved. Conditions shall be applicable during the construction of the project.

WHO: The property owner/developer shall be solely responsible for implementation and maintenance of these mitigation measures.

HOW: The conditions of approval shall require these mitigation measures to be incorporated into the construction plans.

WHAT: 5) Intersection #11. Mathilda Avenue/Moffett Park Drive: Payments of the City's TIF will constitute the project's fair share contribution for the construction of the Mary Avenue Overcrossing.

6) Intersection #12. Mathilda Avenue/SR 237 Westbound Ramps: Payments of the City's TIF will constitute the project's fair share contribution for the construction of the Mary Avenue Overcrossing.

7) Intersection #13. Mathilda Avenue/SR 237 Eastbound Ramps: Payments of the City's TIF will constitute the project's fair share contribution for the construction of the Mary Avenue Overcrossing.

WHEN: These improvements are programmed in both the City's Transportation Strategic Program and the VTP 2035 list of constrained projects.

WHO: The City is responsible for implementation of these mitigation measures.

HOW: The Mary Avenue Extension project is programmed in the VTA's VTP 2035 list of constrained projects and is included in the City's TIF program with the City's contribution funded through the payment of TIF fees by new development projects.

WHAT: Bicycle Facilities: "Sharrows" and signage shall be installed to alert vehicles to the potential presence of bicyclists in the Moffett Park Drive segment between Mathilda Avenue and Innovation and the City will continue to study the possibility of adding a bike lane in this segment. Bicycle lanes shall be added in the Moffett Park Drive segment between Enterprise Way and Innovation Way.

WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid when the MMPDR is approved. Conditions will be applicable during the construction of the project.

WHO: The developer shall be required to provide funding for the improvements and the City shall implement the mitigation through the City's Capital Improvement Program.

HOW: The fees shall be paid to the City and the City shall implement the mitigation through City sponsored projects and programs.

WHAT: Pedestrian Facilities: Pedestrian connections shall be provided between the proposed buildings, parking lots, and parking garages. A pedestrian pathway shall link the light rail station located at the south side of the Ariba campus and the new building at the Ariba Campus and to the 11th Avenue/Enterprise Way sidewalks that continue to Building D at Moffett Towers.

WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid when the MMPDR is approved. Conditions will be applicable during the construction of the project.

WHO: The developer shall be required to construct the improvements.

HOW: This mitigation measure shall be incorporated into the construction plans.

WHAT: Ariba Campus On-Site Circulation:

1) The current northbound left-turn pocket on Innovation Way is approximately 75 feet long and shall be extended up to 50 feet to the extent feasible within the existing right-of-way.

2) To better facilitate vehicle circulation at this intersection, the entrance approaches shall be signed and stop controlled.

WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid when the MMPDR is approved. Conditions will be applicable during the construction of the project.

WHO: The developer shall be required to construct the improvements.

HOW: This mitigation measure shall be incorporated into the construction plans.

WHAT: Moffett Towers Campus On-Site Circulation:

1) The project applicant shall consider adding a parking management program. Such a program could either assign parking based on building (i.e. Buildings D, E, and H shall park in the existing garage and buildings F and G park in the proposed garage). Parking garage access can be re-assessed as the tenants begin to fill the buildings.

2) To better facilitate vehicle circulation the garage exits onto the main drive aisles shall be signed as stop controlled.

WHEN: These mitigation measures shall be converted into conditions of approval for the MMPDR prior to its final approval by the City Council. The conditions will become valid

when the MMPDR is approved. Conditions will be applicable during the construction of the project.

WHO: The developer shall be required to construct the improvements.

HOW: This mitigation measure shall be incorporated into the construction plans.

41. Transportation (Less than Significant) – The proposed Ariba campus project will contain a new parking garage that will be constructed on an existing surface parking lot. The garage would also eliminate a pedestrian walkway that currently meanders from the south-east corner of the project site at the Moffett Park Drive/Innovation Way intersection to the existing Building 3. There is limited pedestrian activity on Moffett Park Drive and Innovation Way (no cross walks are provided at that intersection and no sidewalks existing on Moffett Park Drive east of Innovation way and on the east side of Innovation Way) and the removal of the pedestrian walkway is not considered significant, since it does not result in added walk time or inconvenience for pedestrians. Pedestrian access to the Moffett Park light rail station is not impacted by the removal of the walkway. A more direct pedestrian access is provided closer to the station and closer to the center of the project site

Responsible Division: Planning Division

Completed by: Steve Lynch

Date: August 8, 2011

Building	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
43. Hydrology and Water Quality - Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FEMA Flood Insurance Rate Map Effective 5/18/09 www.sunnyvaleplanning.com , California Building Code, Title 16 (Building) of the Sunnyvale Municipal Code Project Description
44. Hydrology and Water Quality - Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FEMA Flood Insurance Rate Map Effective 5/18/09 www.sunnyvaleplanning.com , California Building Code, Title 16 (Building) of the Sunnyvale Municipal Code Project Description
45. Hydrology and Water Quality - Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1995 ABAG Dam Inundation Map www.abag.ca.gov , California Building Code, Title 16 (Building) of the Sunnyvale Municipal Code Project Description
46. Geology and Soils -Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sunnyvale Municipal Code 12.60, Storm Water Quality Best Sunnyvale Management Practices Guideline Manual Project Description Blueprint for a Clean Bay
47. Geology and Soils -Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Safety and Seismic Safety Sub-Element, www.sunnyvaleplanning.com California Plumbing, Mechanical, and Electrical Codes and Title 16 (Building) of the Sunnyvale Municipal Code
48. Geology and Soils -Be located on expansive soil, as defined by the current building code, creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	California Plumbing, Mechanical, and Electrical Codes and Title 16 (Building) of the Sunnyvale Municipal Code

Further Discussion if "Less than Significant" with or without mitigation:

46. Geology and Soils (Less than Significant): The proposed project will have a significant amount of grading intended to clear the existing site prior to construction. During the time the existing topsoil is exposed and there is a potential for erosion and loss of soil. There is no surface run-off anticipated during construction and no long-term run-off expected after construction. This aspect of the project will be less

than significant with the implementation of Sunnyvale's Municipal Code 12.60, Storm Water Quality Best Management Practices, Regional Water Quality Boards C.3 permit requirements, and the Blueprint for a Clean Bay.

47. Geology and Soils (Less than Significant): The project site is not located in an area with any active faults, but may experience strong seismic ground shaking in the event of an earthquake. Through the City's implementation of the Uniform Building Code requirements for areas with potential for seismic activity, this aspect of the project will be less than significant.

Responsible Division: Planning Division

Completed by: Steve Lynch

Date: August 8, 2011

Engineering	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
49. Utilities and Service Systems: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description Sunnyvale Wastewater Management Sub-Element www.sunnyvaleplanning.com
50. Utilities and Service Systems: Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description Sunnyvale Waste Water Management Sub-Element Water Resources Sub-Element www.sunnyvaleplanning.com
51. Utilities and Service Systems: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Project Description Sunnyvale Waste Water Management Sub-Element Water Resources Sub-Element www.sunnyvaleplanning.com
52. Utilities and Service Systems: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description Water Resources Sub-Element www.sunnyvaleplanning.com
53. Utilities and Service Systems: Result in a determination by the wastewater treatment provider which services or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description Sunnyvale Wastewater Management Sub-Element www.sunnyvaleplanning.com
54. Utilities and Service Systems: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Solid Waste Management Sub-Element www.sunnyvaleplanning.com
55. Hydrology and Water Quality - Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Regional Water Quality Control Board (RWQCB) Region 2 Municipal Regional Permit

Engineering	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
56. Hydrology and Water Quality - Substantially degrade groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Santa Clara Valley Water District Groundwater Protection Ordinance www.valleywater.org
57. Hydrology and Water Quality - Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project description Water Resources Sub-Element www.sunnyvaleplanning.com
58. Hydrology and Water Quality - Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems in a manner which could create flooding or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	RWQCB, Region 2 Municipal Regional Permit, Stormwater Quality BMP Guidance Manual for New and Redevelopment Projects www.sunnyvaleplanning.com
59. Hydrology and Water Quality - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Santa Clara Valley Water District (SCVWD) Guidelines and Standards for Land Use Near Streams www.valleywater.org City of Sunnyvale Stormwater Quality Best Management Practices (BMP) Guidance Manual for New and Redevelopment Projects www.sunnyvaleplanning.com
60. Utilities and Service Systems: Comply with federal, state, and local statues and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solid Waste Management Sub-Element of the Sunnyvale General Plan www.sunnyvaleplanning.com

Engineering	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
<p>61. Public Services Infrastructure? Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description

Further Discussion if "Less than Significant" with or without mitigation:

56. Hydrology and Water Quality (Less than Significant): Based on the project description (no hazardous material usage, no septic tanks, to significant water usage or discharge) and implementation of Sunnyvale's Municipal Code 12.60, Storm Water Quality Best Management Practices, Regional Water Quality Boards C.3 permit requirements, and the Blueprint for a Clean Bay, the project will have a less than significant impact on water quality.

51. and 58. Utilities and Service Systems (Less than Significant): The project will require the construction of new stormwater management devices on private property. The stormwater treatment devices consist of vegetated swales on private property to treat the impervious surfaces on the new from the buildings and new pavement areas. The stormwater management measures will be privately constructed and maintained by the project developer. The project will not require an expansion of the City's existing treatment or stormwater system since the stormwater is being treated on-site prior to its release or filtered into the ground via bioswales. The project but it will not cause a degradation or significant impact to the City.

These impacts are less than significant.

Responsible Division: Planning Division

Completed by: Steve Lynch

Date: August 8, 2011

Public Safety – Hazardous Materials	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
62. Public Services Police and Fire protection - Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sunnyvale Law Enforcement Sub-Element Sunnyvale Fire Services Sub-Element Safety and Seismic Safety Sub-Element www.sunnyvaleplanning.com
63. Public Services Police and Fire protection - Would the project result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	California Building Code SMC Section 16.52 Fire Code

Further Discussion if "Less than Significant" with or without mitigation: None required.

Responsible Division: Planning Division

Completed by: Steve Lynch

Date: August 8, 2011

Public Safety – Hazardous Materials	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
64. Hazards and Hazardous Materials - Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description
65. Hazards and Hazardous Materials - Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description
66. Hazards and Hazardous Materials - Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description
67. Hazards and Hazardous Materials - Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Project Description Hazardous Waste & Substances List (State of California) List of Known Contaminants in Sunnyvale BGC Phase I Environmental Assessment, April 2, 2010 BGC Soil Sample Report, January 29, 2010
68. Hazards and Hazardous Materials - Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Safety and Safety Sub-Element of the Sunnyvale General Plan www.sunnyvaleplanning.com

Further Discussion if “Less than Significant” with or without mitigation: None required.

Responsible Division: Planning Division

Completed by: Steve Lynch

Date: August 8, 2011

Community Services	Potentially Significant Impact	Less than Sig. With Mitigation	Less Than Significant	No Impact	Source Other Than Project Description and Plans
69. Public Services Parks - Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Open Space & Recreation Sub-Element www.sunnyvaleplanning.com Project Description
70. Recreation - Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Open Space & Recreation Sub-Element www.sunnyvaleplanning.com Project Description
71. Recreation - Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Open Space & Recreation Sub-Element www.sunnyvaleplanning.com Project Description

Further Discussion if "Less than Significant" with or without mitigation: None required.

Responsible Division: Planning Division

Completed by: Steve Lynch

Date: August 8, 2011

ENVIRONMENTAL CHECKLIST REFERENCE LIST

Note: All references are the most recent version as of the date the Initial Study was prepared:

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City of Sunnyvale General Plan:

- A. General Plan Map
- B. Air Quality Sub-Element (1993)
- C. Arts Sub-Element (1995)
- D. Community Design Sub-Element (1990)
- E. Community Engagement Sub-Element (2007)
- F. Fire Services Sub-Element (1995)
- G. Community Vision (2007)
- H. Fiscal Sub-Element (2006)
- I. Heritage Preservation Sub-Element (1995)
- J. Housing & Community Revitalization Sub-Element (2009)
- K. Land Use & Transportation Sub-Element (1997)
Revised 4/28/09 with Allocation of Street Space Policies
- L. Law Enforcement Sub-Element (1995)
- M. Legislative Management Sub-Element (1999)
- N. Library Sub-Element (2003)
- O. Noise Sub-Element (1997)
- P. Open Space and Recreation Sub-Element (2006) *Updated with Parks of the Future Study 4/28/2009. Revised 4/24/09.*
- Q. Safety & Seismic Safety Sub-Element (2008)
- R. Socio-Economic Sub-Element (1989)
- S. Solid Waste Management Sub-Element (1996)
- T. Support Services Sub-Element (1988)
- U. Surface Run-off Sub-Element (1993)
- V. Wastewater Management Sub-Element (1996)
- W. Water Resources Sub-Element (2008)

City of Sunnyvale Municipal Code:

- A. Title 8 Health and Sanitation
- B. Title 9 Public Peace, Safety or Welfare
- C. Title 10 Vehicles and Traffic
- D. Title 12 Water and Sewers
- E. Chapter 12.60 Storm Water Management
- F. Title 13 Streets and Sidewalks
- G. Title 16 Buildings and Construction
- H. Chapter 16.52 Fire Code
- I. Chapter 16.54 Building Standards for Buildings Exceeding Seventy –Five Feet in Height
- J. Title 18 Subdivisions
- K. Title 19 Zoning
- L. Chapter 19.28 Downtown Specific Plan District
- M. Chapter 19.29 Moffett Park Specific plan District
- N. Chapter 19.39 Green Building Regulations
- O. Chapter 19.42 Operating Standards
- P. Chapter 19.54 Wireless Telecommunication Facilities

- Q. Chapter 19.81 Streamside Development Review
- R. Chapter 19.96 Heritage Preservation
- S. Title 20 Hazardous Materials

Specific Plans:

- A. Downtown Specific Plan
- B. El Camino Real Precise Plan
- C. Lockheed Site Master Use Permit
- D. Moffett Park Specific Plan
- E. 101 & Lawrence Site Specific Plan
- F. Southern Pacific Corridor Plan
- G. Lakeside Specific Plan
- H. Arques Campus Specific Plan

Environmental Impact Reports:

- A. Futures Study Environmental Impact Report
- B. Lockheed Site Master Use Permit Environmental Impact Report
- C. Tasman Corridor LRT Environmental Impact Study (supplemental)
- D. Kaiser Permanente Medical Center Replacement Center Environmental Impact Report (City of Santa Clara)
- E. Downtown Development Program Environmental Impact Report
- F. Caribbean-Moffett Park Environmental Impact Report
- G. Southern Pacific Corridor Plan Environmental Impact Report
- H. East Sunnyvale ITR General Plan Amendment EIR
- I. Palo Alto Medical Foundation Medical Clinic Project EIR
- J. Luminaire (Lawrence Station Road/Hwy 237 residential) EIR
- K. NASA Ames Development Plan Programmatic EIS
- L. Mary Avenue Overpass EIR
- M. Mathilda Avenue Bridge EIR

Maps:

- A. General Plan Map
- B. Zoning Map
- C. City of Sunnyvale Aerial Maps
- D. Flood Insurance Rate Maps (FEMA)
- E. Santa Clara County Assessors Parcel
- F. Utility Maps
- G. Air Installations Compatible Use Zones (AICUZ) Study Map

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Note: All references are the most recent version as of the date the Initial Study was prepared:

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H. Noise Sub-Element Appendix A 2010 Noise Conditions Map

Lists / Inventories:

- A. Sunnyvale Cultural Resources Inventory List
- B. Heritage Landmark Designation List
- C. Santa Clara County Heritage Resource Inventory
- D. Hazardous Waste & Substances Sites List (State of California)
- E. List of Known Contaminants in Sunnyvale
- F. USFWS / CA Dept. F&G Endangered and Threatened Animals of California
<http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf>
- G. USFWS / CA Dept. F&G Endangered, Threatened and Rare Plants of California
<http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEPlants.pdf>

Legislation / Acts / Bills / Resource Agency Codes and Permits:

- A. Subdivision Map Act
- B. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit
- C. Santa Clara County Valley Water District Groundwater Protection Ordinance
- D. The Hazardous Waste and Substance Site List
www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm
- E. The Leaking Underground Petroleum Storage Tank List
www.geotracker.waterboards.ca.gov
- F. The Federal EPA Superfund List
www.epa.gov/region9/cleanup/california.html
Section 404 of Clean Water Act

Transportation:

- A. California Department of Transportation Highway Design Manual
- B. California Department of Transportation Traffic Manual
- C. California Department of Transportation Standard Plans & Standard Specifications
- D. Highway Capacity Manual
- E. Institute of Transportation Engineers - Trip Generation Manual & Trip Generation Handbook
- F. Institute of Transportation Engineers - Traffic Engineering Handbook
- G. Institute of Transportation Engineers - Manual of Traffic Engineering Studies

- H. Institute of Transportation Engineers - Transportation Planning Handbook
- I. Institute of Transportation Engineers - Manual of Traffic Signal Design
- J. Institute of Transportation Engineers - Transportation and Land Development
- K. U.S. Dept. of Transportation Federal Highway Administration Manual on Uniform Traffic Control Devices for Street and Highways & CA Supplements
- L. California Vehicle Code
- M. Santa Clara County Congestion Management Program and Technical Guidelines
- N. Santa Clara County Transportation Agency Short Range Transit Plan
- O. Santa Clara County Transportation Plan for 2035
- P. Traffic Volume Studies, City of Sunnyvale Public Works Department of Traffic Engineering Division
- Q. Statewide Integrated Traffic Records System
- R. Sunnyvale Zoning Ordinance – including Titles 10 & 13
- S. City of Sunnyvale General Plan – Land Use and Transportation Element
- T. City of Sunnyvale Bicycle Plan
- U. City of Sunnyvale Neighborhood Traffic Calming Program
- V. Valley Transportation Authority Bicycle Technical Guidelines
- W. Valley Transportation Authority Community Design & Transportation – Manual of Best Practices for Integrating Transportation and Land Use
- X. Santa Clara County Sub-Regional Deficiency Plan
- Y. City of Sunnyvale Deficiency Plan
- Z. AASHTO: A Policy on Geometric Design of Highways and Streets
- AA. City of Sunnyvale Pedestrian and Bicycle Opportunities Studies
- BB. Valley Transportation Authority Operations Performance Report

Public Works:

- A. Standard Specifications and Details of the Department of Public Works
- B. Storm Drain Master Plan
- C. Sanitary Sewer Master Plan
- D. Water Master Plan

Note: All references are the most recent version as of the date the Initial Study was prepared:

ENVIRONMENTAL CHECKLIST REFERENCE LIST

Note: All references are the most recent version as of the date the Initial Study was prepared:

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- E. Solid Waste Management Plan of Santa Clara County
- F. Geotechnical Investigation Reports
- G. Engineering Division Project Files
- H. Subdivision and Parcel Map Files

Miscellaneous Agency Plans:

- A. ABAG Projections 2010
- B. Bay Area Clean Air Plan
- C. BAAQMD CEQA Guidelines
- D. Criteria of the National Register of Historic Places

Building Safety:

- A. California Building Code
- B. California Energy Code
- C. California Plumbing Code
- D. California Mechanical Code
- E. California Electrical Code
- F. California Fire Code
- G. Title 16.52 Sunnyvale Municipal Code
- H. Title 16.53 Sunnyvale Municipal Code
- I. Title 16.54 Sunnyvale Municipal Code
- J. Title 19 California Code of Regulations

Guidelines and Best Management Practices

- A. Storm Water Quality Best Management Practices Guidelines Manual 2007
- B. Sunnyvale Citywide Design Guidelines
- C. Sunnyvale Industrial Guidelines
- D. Sunnyvale Single-Family Design Techniques
- E. Sunnyvale Eichler Guidelines
- F. Blueprint for a Clean Bay
- G. SCVWD Guidelines and Standards for Land Use Near Streams
- H. The United States Secretary of the Interior's Guidelines for Rehabilitation
- I. Criteria of the National Register of Historic Places

Additional Project References:

- A. Project Description
- B. Sunnyvale Project Environmental Information Form
- C. Project Development Plans dated 5/9/2011
- D. Project construction schedule
- E. Project Draft Storm Water Management Plan
- F. Project Green Building Checklist
- G. Project LEED Checklist

Other:

- A. State of California Department of Parks and Recreation From (DPR 523A-L)
- B. Traffic Study by Fehr & Peers, dated July 14, 2011.
- C. Air Quality and Green House Gas report by Environ, dated May 18, 2011.
- D. Robert Booty Arborist's Reports, April 2011.

Note: All references are the most recent version as of the date the Initial Study was prepared:

Ariba and Moffett Towers Expansion Projects, Sunnyvale, CA Transportation Impact Analysis



Prepared for:
**Jay Paul
Company**

Prepared by: **FEHR & PEERS**

160 West Santa Clara Street
Suite 675
San Jose, CA 95113

July 2011

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EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis (TIA) for the proposed expansions of the Ariba and Moffett Towers campuses located in the City of Sunnyvale, California. The two projects combined would result in a net new square footage of 325,000 square feet (s.f.) The projects are located within the Moffett Park Specific Plan (MPSP) area. The Ariba site is located at the northwest corner of the Moffett Park Drive/Innovation Way intersection and the Moffett Towers site is located in the northeast quadrant of the 11th Avenue/Enterprise Way intersection. Both project sites include construction of a new parking garage. The roadway system was evaluated under the No Project and Plus Project scenarios for Existing, Background, and Cumulative Conditions. Site access for all modes and parking are also addressed.

The impacts of the proposed expansions at the Moffett Towers and Ariba campuses are evaluated as one project since both sites have the same timing for occupancy. Additionally both sites have the same property owner and share floor area ratios (FAR). This presents a more conservative approach, since impacts are evaluated based on the combined traffic added to the roadway network versus looking at each site individually.

PROJECT TRAFFIC ESTIMATES

The amount of traffic anticipated to be added to the surrounding roadway system by the proposed projects were estimated based data published in Institute of Transportation Engineers' (ITE) *Trip Generation* 8th Edition (2008). Trip generation estimates for the Ariba campus were developed by incorporating the campus size both with and without the expansion into the trip generation equations for "General Office" (Land Use 710) to account for the economies of scale that would result. Similarly, trip estimates for the Moffett Towers expansion were developed by incorporating the building size both with and without the expansion into the trip generation equation for "Corporate Headquarters" land use.

Although the approved Moffett Towers Building D is not currently constructed, only the trips generated by the additional 125,000-s.f. of Building D building and the new 200,000-s.f. Ariba building were used to assess Project impacts. Traffic for the approved 207,956-s.f. Moffett Towers Building D was included under Background No Project and Cumulative No Project Conditions analysis.

Trip reductions of 15 to 30 percent are required as part of the Transportation Demand Management (TDM) program for the campuses; however, the VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips for projects near a light rail station that have an effective TDM program. A 9.5 percent reduction was applied to the project trip estimates to determine the number of net new trips generated by the project.

The proposed project is estimated to generate 2,064 net new daily trips, 339 net new AM peak-hour trips, and 334 net new PM peak-hour trips.

INTERSECTION IMPACTS AND MITIGATION MEASURES

Existing Plus Project Conditions

Measured against the City of Sunnyvale's, the City of Mountain View, and VTA's level of service standards, the project is not expected to have significant impacts at any of the study intersections under Existing plus Project conditions; therefore, no mitigation is required.

Background Plus Project Conditions

Based on the City of Sunnyvale's, the City of Mountain View's, and VTA's impact criteria the project is expected to have a significant impact at the following seven intersections:

- Int. 2. Enterprise Way/Building D Site Access (South) – private street
- Int. 3. Enterprise Way/11th Avenue – private street
- Int. 8. Enterprise Way/Manila Drive/Moffett Park Drive
- Int. 11. Mathilda Avenue/Moffett Park Drive
- Int. 12. Mathilda Avenue/SR 237 Westbound Ramps
- Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps
- Int. 21. Ellis Street/Manila Drive

The following mitigation measures are required to mitigate project impacts:

Int. 2. Enterprise Way/Building D Site Access (South)

The intersection is projected to operate at unacceptable levels and meet the MUTCD peak hour volume warrant during the PM peak hour. Because Enterprise Way is a private roadway, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for signalization. The project's impact will be less-than-significant based on City standards with the installation of a traffic signal.

Alternatively, the project's impact at the Enterprise Way/Building D Site Access (South) can be mitigated to less-than-significant levels with the provision of an approximately two-car refuge lane for the westbound left-turn movements. This mitigation would require some modifications to the existing raised median to accommodate the alternative mitigation measure.

Additionally, although VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips, the Moffett Towers TDM program is required to reduce peak hour trips by 30 percent, based on the guidelines from the MPSP. With a 30 percent reduction in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be less-than-significant; however, the peak hour volume warrant would still be met.

Int. 3. Enterprise Way/11th Avenue

The Enterprise Way/11th Avenue intersection is projected to operate unacceptably and meet the MUTCD peak hour volume during the AM peak hour. Because Enterprise Way is a private roadway, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for signalization. The project's impact will be **less-than-significant** based on City standards with the installation of a traffic signal (the traffic signal is already built at this location and will simply need to be put in full operation).

Additionally, although VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips, the Ariba Campus TDM program is required to reduce peak hour trips by 15 percent. With a 15 percent reduction in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be **less-than-significant**; however, the peak hour volume warrant would still be met.

Int. 8. Enterprise Way/Manila Drive/Moffett Park Drive

The proposed Mary Avenue Extension project would reduce traffic on 11th Avenue and Enterprise Way; thus reducing the impact at the Enterprise Way/Manila Drive/Moffett Park Drive. The Mary Avenue Extension project is programmed in the VTA's VTP 2035 list of constrained projects and is included in the City's TIF

program with the City's contribution funded through the payment of TIF fees by new development projects. Thus, payment of the City's TIF would mitigate the project impact to **less-than significant** levels.

As an alternative to the Mary Avenue Overcrossing, the eastbound through lane on Manila Drive could be converted to a shared through/left-turn lane, thus enabling two lanes of traffic to turn left onto Enterprise Way. This improvement would also require the signal phasing on Manila Drive-Moffett Park Drive to be converted from protected left-turn phasing to split phasing to accommodate the shared through/left-turn lane. With this improvement the intersection is projected to operate at acceptable levels during both peak hours and the impact would become less-than-significant.

Int. 11. Mathilda Avenue/Moffett Park Drive

As estimated in the *Mary Avenue Overcrossing Final Traffic Operations Report*, the Mary Avenue overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the AM peak hour and 23 percent in the PM peak hour. Construction of the Mary Avenue overcrossing, along with reconfiguration of the SR 237/Mathilda Avenue ramp intersections, would reduce the impact to a less-than-significant level. Payment of the City's TIF would constitute the project's fair share contribution. These improvements consist of:

- Re-aligning Moffett Park, east of Mathilda Avenue, to connect to 5th Avenue via Bordeaux Avenue;
- Shifting the SR 237 Westbound Off-ramp 150 feet to the north to align with Moffett Park/Mathilda Avenue;
- Removing SR 237 Westbound On-ramp; and,
- Constructing a direct southbound right-turn on-ramp from Mathilda Avenue to US 101 north

These improvements are programmed in both the City's Transportation Strategic Program and the *VTP 2035* list of constrained projects.

Int. 12. Mathilda Avenue/SR 237 Westbound Ramps

The identified improvements for the Mathilda Avenue/Moffett Park Drive intersection would also mitigate the impacts identified for the Mathilda Avenue/SR 237 Westbound Ramp intersection, since they include the elimination of this intersection. Payment of the City's TIF would constitute the project's fair share contribution.

Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps

The identified improvements for the Mathilda Avenue/Moffett Park Drive intersection would also mitigate the impacts identified for the Mathilda Avenue/SR 237 Westbound Ramp intersection, since they include modifications to this intersection. Additionally, the Mary Avenue overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the AM peak hour and 23 percent in the PM peak hour; the intersection would operate acceptably with these volume reductions. Payment of the City's TIF would constitute the project's fair share contribution.

Int. #21. Ellis Street/Manila Drive

The addition of a westbound left-turn lane would reduce the PM impact to a less-than-significant level and the project would operate at acceptable service levels during both peak periods. The project contributes approximately 14 percent of the total growth to the intersection.

Cumulative Plus Project Conditions

Based on the City of Sunnyvale's, the City of Mountain View's, and VTA's impact criteria the project is expected to have a significant impact at the seven impacted intersections identified under Background Conditions. The same mitigation measures identified under Background Conditions would mitigate the intersection impacts to less-than-significant levels.

FREEWAY SEGMENT IMPACTS AND MITIGATION MEASURES

Existing Plus Project Conditions

The proposed project will not have a significant impact on any of the study freeway segments, as the addition of project traffic will not degrade operations on any segment to unacceptable LOS F or exacerbate unacceptable LOS F operations by adding traffic equal to at least one percent of a freeway segment's capacity; therefore, no mitigation is required.

Background Plus Project Conditions

Measured against VTA's level of service standards and impact criteria, the project is not expected to have significant impacts at any of the study freeway segments under Background plus Project conditions; therefore, no mitigation is required.

Cumulative Plus Project Conditions

Similar to Background Conditions, the project is not expected to have significant impacts at any of the study freeway segments under Cumulative plus Project conditions; therefore, no mitigation is required.

TRANSIT SERVICE

The proposed project will generate demand for existing transit services in the area, which can be accommodated by the existing supply. Transit impacts are considered significant if the proposed project conflicts with existing or planned transit facilities or generates potential transit trips and does not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops. Based on these criteria, the project would not have a potentially significant impact on transit service.

BICYCLE AND PEDESTRIAN FACILITIES

The proposed Project would generate bicycle demand on-site and on the adjacent roadways, which generally have adequate bicycle facilities. The project sites have bicycle access via the bicycle lanes on 11th Avenue and Enterprise Way; however, no bicycle lanes are provided on Moffett Park Drive, which provides access to 11th Avenue and Enterprise Way. While less than ideal, the roadway is wide enough for bicyclists to share the road with vehicles. However, the City has identified the construction of bike lanes on Moffett Park Drive as a future bicycle improvement. Due to the lack of available right-of-way between the light-rail tracks and the SR-237 westbound on-ramp, no bike lane was added between Innovation Way and Mathilda Avenue. Sharrows and signage will be used to alert vehicles to the potential presence of bicyclists in the Moffett Park Drive segment between Mathilda Avenue and Innovation and the City will continue to study the possibility of adding a bike lane in this segment. The project will pay its fair-share contribution to this improvement.

Sidewalks would be provided on Enterprise Way, 11th Avenue, and 5th Avenue along the project frontages. Pedestrian connections would be provided between the proposed buildings, parking lots, and parking garages. A pedestrian pathway would link the light rail station located on Manila Drive to the new building at the Ariba Campus and to the 11th Avenue/Enterprise Way sidewalks that continue to Building D at Moffett Towers. Sidewalks are also included in the City's TIF program.

Overall, because the project is an addition to recent construction, most of the existing infrastructure appropriately accommodates bicyclists and pedestrians and the project has a less-than-significant impact.

VEHICLE AND BICYCLE PARKING

The proposed parking supply in the Ariba and Moffett Towers' site will each provide sufficient parking to accommodate the new office developments, as well as, replace any parking that is lost due to construction of the project and construction of the Mary Avenue Extension.

Both the Ariba and Moffett Towers projects will provide Class I and Class II bicycle parking facilities. Due to the configuration of the Moffett Towers site, the bicycle parking cannot be located closer to the building than in the proposed parking garage. The Ariba project will provide its bicycle parking at the building entrance.

SITE ACCESS AND ON-SITE CIRCULATION

Ariba Campus Expansion

The following site-access and on-site circulation improvements are recommended to improve access to the Ariba Campus Site:

- The current northbound left-turn pocket on Innovation Way is approximately 75 feet long and thus should ideally be extended up to 50 feet to the extent feasible within the existing right-of-way
- To better facilitate vehicle circulation at this intersection, entrance approaches should be signed and stop controlled

MOFFETT TOWERS CAMPUS EXPANSION

The following site-access and on-site circulation improvements are recommended to improve access to the Moffett Towers Site:

- The project applicant should consider adding a parking management program. Such a program could either assign parking based on building (i.e. Buildings D, E, and H park in the existing garage and buildings F and G park in the proposed garage). Parking garage access can be re-assessed as the tenants begin to fill the buildings.
- To better facilitate vehicle circulation the garage exits onto the main drive aisles should be signed as stop controlled.

CONSTRUCTION IMPACTS

The Moffett Towers project will have minimal construction impacts due to traffic and use of parking lots for construction related activity. The Ariba site will need to coordinate with the surrounding properties to provide for employee parking during construction of the office building and garage.

1. INTRODUCTION

This report presents the results of the transportation impact analysis (TIA) for the proposed expansions of the Ariba and Moffett Towers developments located in the City of Sunnyvale, California. The projects are located within the Moffett Park Specific Plan (MPSP) area. The Ariba site is located at the northwest corner of the Moffett Park Drive/Innovation Way intersection and the Moffett Towers site is located in the northeast quadrant of the 11th Avenue/Enterprise Way intersection. Part of the project description includes the construction a new parking garage on each of the sites. The development sites are located in close proximity to the Moffett Park light rail transit (LRT) station and have Transportation Demand Management (TDM) programs that in combination reduce the number of vehicle trips generated. The site locations are shown on the map in **Figure 1**. Proposed site plans are included in **Figures 2a and 2b**.

The purpose of this analysis is to identify potentially significant adverse impacts of the proposed project on the surrounding transportation system and to recommend measures to mitigate significant impacts. The TIA was prepared following the guidelines of the City of Sunnyvale and Santa Clara Valley Transportation Authority (VTA), the congestion management agency for Santa Clara County.

The impacts of the proposed expansions at the Moffett Towers and Ariba campuses are evaluated as one project since both sites have the same timing for occupancy. Additionally both sites have the same property owner and share floor area ratios (FAR). This presents a more conservative approach, since impacts are evaluated based on the combined traffic added to the roadway network versus looking at each site individually.

PROJECT DESCRIPTION

The project consists of two applications to the City of Sunnyvale. One application is for a new 200,000-s.f. office building on the site commonly referred to as the Ariba Campus (Building 5). The other application is for an additional 125,000 s.f. for a previously approved office building at the Moffett Towers campus (Building D of Lot 3). The two projects would result in a net new square footage of 325,000 s.f.

DEFINITIONS

- Existing – Conditions of roadways and intersections as of April 2011, when data for the study area was collected. This includes the 10 percent of the Moffett Towers campus square footage that was occupied at the time study was done.
- Project – Traffic associated with the proposed 325,000 s.f. of new building square footage including: a 200,000 s.f. new building on the Ariba Campus (Building 5) and 125,000 additional square footage for on Lot 3 of the Moffett Towers site (Building D).
- Background – Existing conditions plus growth associated with “approved and not built” and “not occupied” development (includes the 90% of unoccupied or un-built portions of Moffett Towers, which includes the entitled and un-built original Building D), plus a growth factor until 2013.
- Cumulative – Existing conditions plus background growth plus all planned and pending projects, as well as a growth factor from 2013-2016.
- Constrained Projects – A planned project for which VTA anticipates full funding within the timeframe of the regional transportation plan (“*Valley Transportation Plan 2035*”).

STUDY AREA

The roadway impacts of the proposed projects were evaluated for the following intersections and freeway segments:

Study Intersections

- | | |
|--|---|
| 1. Enterprise Way/Building D Site Access (North)** | 15. Mathilda Avenue/US 101 Northbound Ramps |
| 2. Enterprise Way/Building D Site Access (South)** | 16. Mathilda Avenue/US 101 Southbound Ramps |
| 3. Enterprise Way/11th Avenue** | 17. Mathilda Avenue/Almanor Avenue/Ahwanee Avenue |
| 4. E Street/11th Avenue** | 18. Mathilda Avenue/Maude Avenue (CMP intersection) |
| 5. D Street/Ariba Site Access/11th Avenue** | 19. Mathilda Avenue/Indio Way |
| 6. C Street/Ariba Site Access/11th Avenue** | 20. Mathilda Avenue/California Avenue |
| 7. Innovation Way/Ariba Site Access** | 21. Ellis Street/Manila Drive* |
| 8. Enterprise Way/Manila Drive/Moffett Park Drive | 22. Ellis Street/US 101 Northbound Ramps* |
| 9. US 101 Northbound On-Ramp/Moffett Park Drive | 23. Ellis Street/US 101 Southbound Ramps* |
| 10. Innovation Way/Moffett Park Drive | 24. Ellis Street/Middlefield Road |
| 11. Mathilda Avenue/Moffett Park Drive | 25. SR 237 Westbound Ramps/Middlefield Road |
| 12. Mathilda Avenue/SR 237 Westbound Ramps | 26. SR 237 Eastbound Ramps/Middlefield Road |
| 13. Mathilda Avenue/SR 237 Eastbound Ramps | 27. Mary Avenue/Maude Avenue |
| 14. Mathilda Avenue/Ross Drive | |

*City of Mountain View Intersection

** Private Street Intersection¹

The listed intersections were selected in consultation with the City of Sunnyvale and determined based on VTA's ten trip per lane guideline, which indicates that intersections should be included if the proposed project adds 10 or more peak hour vehicles per lanes to any intersection movement.

¹ Private street intersections providing direct access to the project sites were analyzed using the City of Sunnyvale's impact criteria, because VTA TIA guidelines require an analysis of site circulation and the City has an interest in assuring that private street systems function sufficiently to not impact operations on City streets.

Freeway Segments

US 101 (Northbound and Southbound):

- Between Moffett Boulevard and SR 237
- Between SR 237 and Mathilda Street
- Between Mathilda Street and Fair Oaks Avenue
- Between Fair Oaks Avenue and Lawrence Expressway
- Between Lawrence Expressway and Great America Parkway
- Between Great America Parkway and Montague Expressway

SR 237 (Eastbound and Westbound):

- Between Maude Avenue and US 101
- Between US 101 and Mathilda Avenue
- Between Mathilda Avenue and Fair Oaks Ave
- Between Fair Oaks Avenue and Lawrence Expressway
- Between Lawrence Expressway and Great America Parkway

Project impacts to pedestrian facilities, bicycle facilities, and transit service and facilities are also addressed.

ANALYSIS SCENARIOS

The operations of the key intersections and freeway segments were evaluated during the weekday morning (AM) and afternoon (PM) peak hours for the following six scenarios:

- Scenario 1:** *Existing Conditions* - Existing volumes obtained from counts.
- Scenario 2:** *Existing plus Project Conditions* - Scenario 1 volumes plus traffic generated by the proposed project.
- Scenario 3:** *Background No Project Conditions* - Existing volumes plus traffic from "approved but not yet built" and "not occupied" developments in the area plus ambient growth to the anticipated completion year of the project.
- Scenario 4:** *Background plus Project Conditions* - Scenario 3 volumes plus traffic generated by the proposed project.
- Scenario 5:** *Cumulative No Project Conditions* - Background No Project volumes (Scenario 3) including pending developments in the area plus ambient growth to the year 2016.
- Scenario 6:** *Cumulative plus Project Conditions* - Scenario 5 volumes plus traffic generated by the proposed project.

ANALYSIS METHODS

The operations of roadway facilities are described with the term *level of service*. Level of Service (LOS) is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, as the best operating conditions, to LOS F, or the worst operating conditions. LOS E represents "at-capacity" operations. When traffic volumes exceed the intersection capacity, stop-and-go conditions result, and operations are designated as LOS F.

Signalized Intersections

The method described in Chapter 16 of the 2000 *Highway Capacity Manual (HCM)* (Special Report 209, Transportation Research Board) was used to prepare the level of service calculations for the study intersections. This level of service method, which is approved by the City of Sunnyvale and VTA, analyzes a

signalized intersection's operation based on average control delay per vehicle. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using TRAFFIX analysis software and is correlated to a LOS designation as shown in Table 1.

TABLE 1 SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS USING AVERAGE CONTROL VEHICULAR DELAY		
Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B+	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 12.0
B		12.1 to 18.0
B-		18.1 to 20.0
C+	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 23.0
C		23.1 to 32.0
C-		32.1 to 35.0
D+	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0
D		39.1 to 51.0
D-		51.1 to 55.0
E+	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	55.1 to 60.0
E		60.1 to 75.0
E-		75.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Traffic Level of Service Analysis Guidelines*, VTA Congestion Management Program, June 2003; *Highway Capacity Manual*, Transportation Research Board, 2000.

The City of Sunnyvale's minimum threshold for acceptable signalized intersection operations is LOS D, except for the Mathilda Avenue corridor, which is identified as regionally significant. The threshold for the Mathilda corridor is LOS E. Similarly, LOS D is the minimum threshold for acceptable signalized intersection operations for City of Mountain View intersections. The threshold of Santa Clara County CMP intersections is LOS E, which applies only to the intersection of Mathilda Avenue/Maude Avenue.

Unsignalized Intersections

The operations of the unsignalized intersections were evaluated using the method contained in Chapter 17 of the 2000 HCM. LOS ratings for stop-sign-controlled intersections are based on the average control delay expressed in seconds per vehicle. At two-way or side-street-controlled intersections, the average control delay is calculated for each stopped movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. Table 2 summarizes the relationship between delay and LOS for unsignalized intersections.

**TABLE 2
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS
USING AVERAGE CONTROL VEHICULAR DELAY**

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay.	≤ 10.0
B	Short traffic delay.	10.1 to 15.0
C	Average traffic delays.	15.1 to 25.0
D	Long traffic delays.	25.1 to 35.0
E	Very long traffic delays.	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded.	> 50.0

Sources: *Traffic Level of Service Analysis Guidelines*, VTA Congestion Management Program, June 2003; *Highway Capacity Manual*, Transportation Research Board, 2000.

Freeway Segments

Freeway segments are evaluated using VTA's analysis procedure, which is based on the density of the traffic flow using methods described in the *2000 HCM*. Density is expressed in passenger cars per mile per lane. The Congestion Management Program range of densities for freeway segment level of service is shown in **Table 3**. The LOS standard for the freeway segments is LOS E.

**TABLE 3
FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS**

Level of Service	Density (passenger cars per mile per lane)
A	≤ 11
B	11.1 to 18.0
C	18.1 to 26.0
D	26.1 to 46.0
E	46.1 to 58.0
F	> 58.0

Sources: *Traffic Level of Service Analysis Guidelines*, VTA Congestion Management Program, June 2003; *Highway Capacity Manual*, Transportation Research Board, 2000.

MOFFETT PARK SPECIFIC PLAN (MPSP)

The Moffett Park Specific Plan (MPSP) was adopted by the City of Sunnyvale on April 27, 2004. The MPSP defines goals and objectives for future development, community and design guidelines, infrastructure improvements, and development standards for the Moffett Park area. The Moffett Park area is located in the northern most portion of the City of Sunnyvale and is generally bounded by the Moffett Federal Airfield in the west, the San Francisco Bay to the north, SR 237 to the south and Sunnyvale Baylands Park to the east. In regards to transportation, the MPSP includes guidelines for mandatory transportation demand management programs, parking requirements for both vehicles and bicycles, planned roadway improvements to accommodate vehicles, transit, bicyclists, and pedestrian with the proposed buildout of Moffett Park.

CITYWIDE DEFICIENCY PLAN AND TRANSPORTATION IMPACT FEE

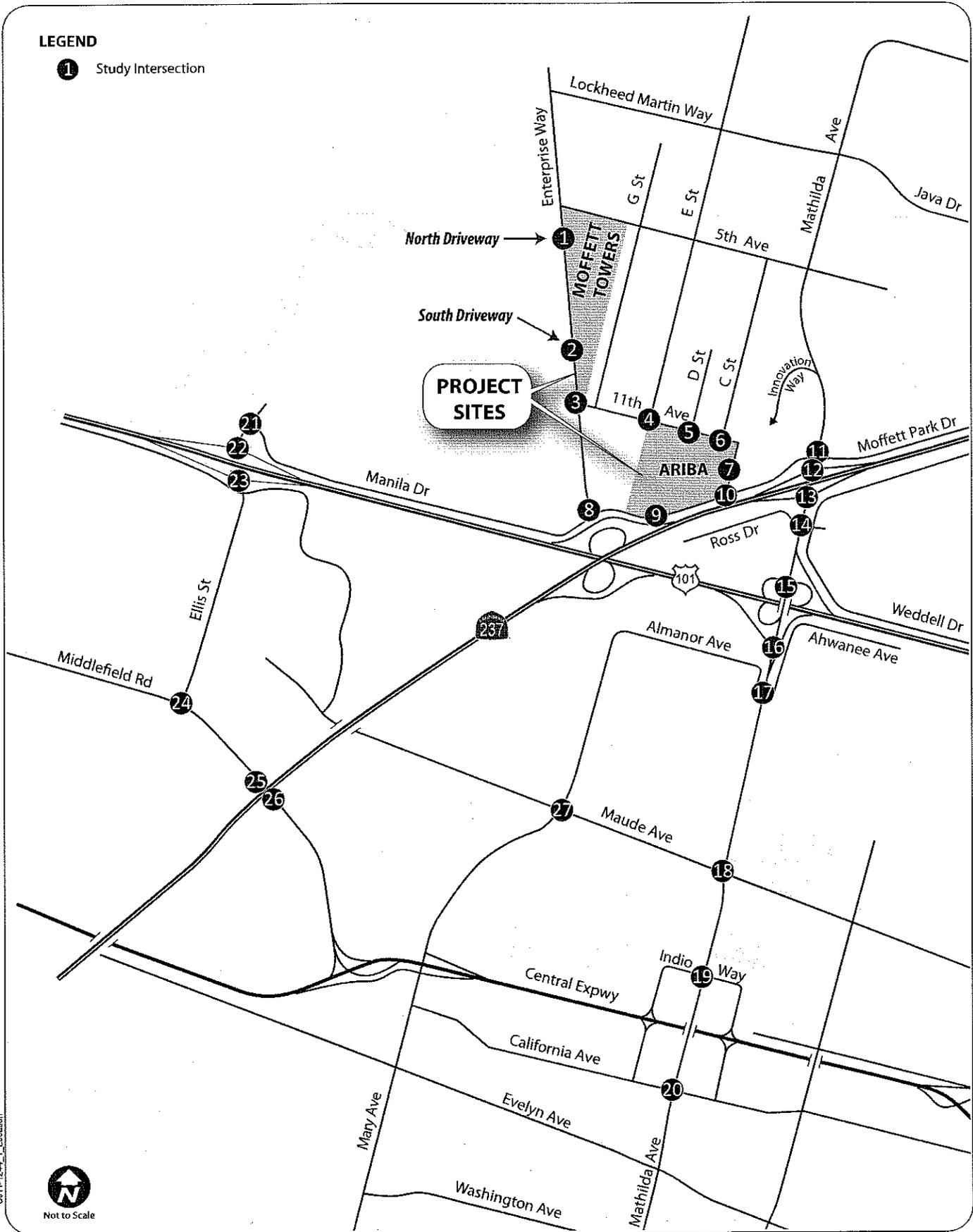
In compliance with VTA, the City of Sunnyvale maintains a *Citywide Deficiency Plan* (CDP, September 2005) to address existing and anticipated deficiencies in the level of service of intersections within the City. The objective of the CDP is to set forth a comprehensive citywide solution to LOS deficiencies at CMP facilities for which no localized mitigation is feasible. The CDP includes a list of transportation improvements to mitigate identified deficiencies. Improvements include intersection and roadway improvements, as well as, pedestrian, bicycle, and transit infrastructure improvements to facilitate multi-modal access throughout the City. Directly related to the proposed project is the Mary Avenue Extension project, which will extend Mary Avenue from its current terminus at Almanor Avenue north over SR 237 and US 101 connecting to 11th Avenue. The new roadway connection will change travel patterns on adjacent streets (particularly the parallel arterials) and will reduce congestion on key facilities such as Mathilda Avenue as compared to conditions without the extension.

The identified improvements will be funded through a combination of state and regional transportation funds and countywide taxes and over \$80 million will be funded through the City's two-tiered traffic impact fee (TIF), which identifies a separate fee structure for the Moffett Park Specific Plan area north of SR 237 and the remainder of the City south of SR 237.

REPORT ORGANIZATION

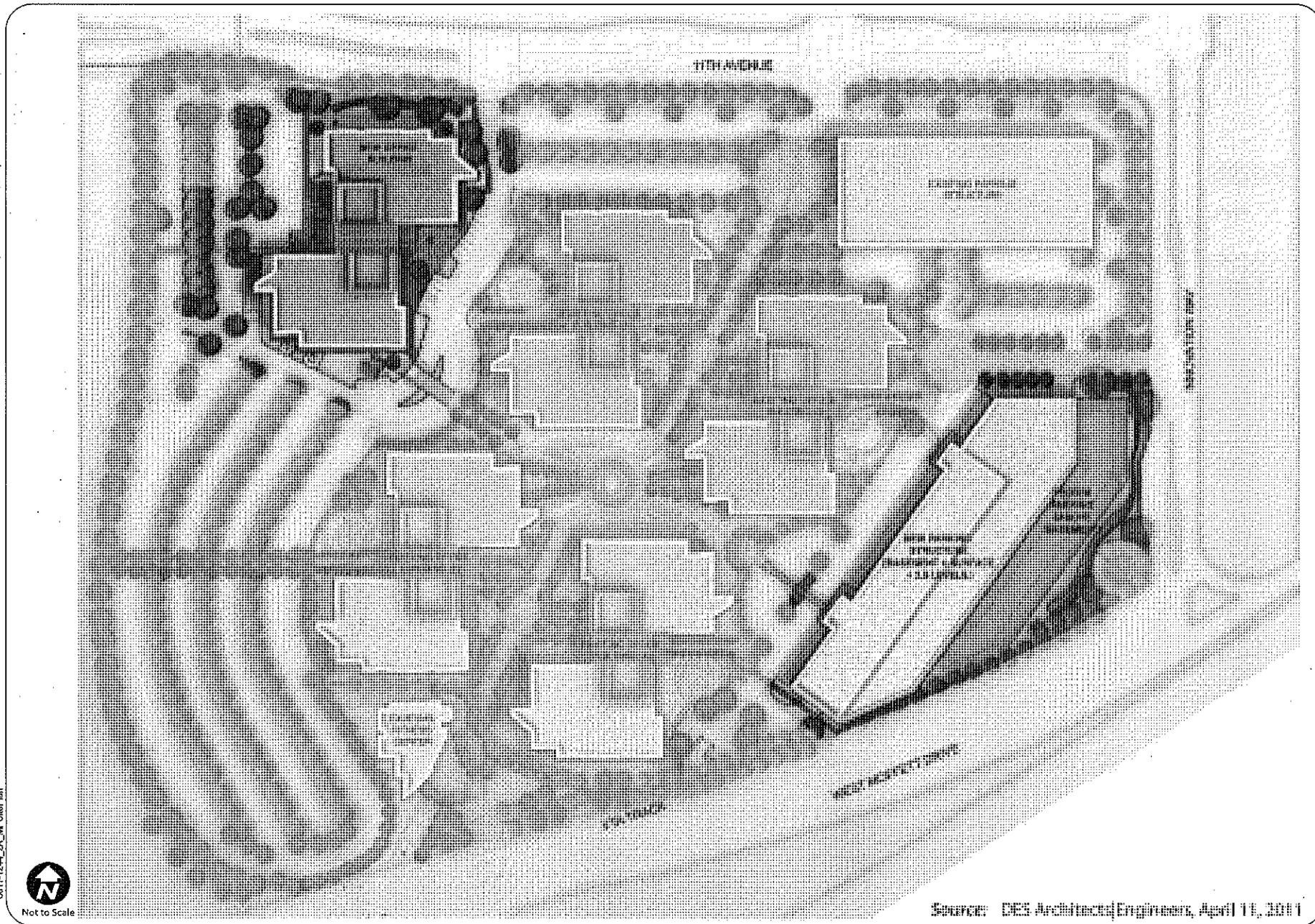
The remainder of this report is divided into five chapters. The existing transportation system serving the sites and the current operating conditions of the key intersections and freeway segments are described in Chapter 2. Chapter 3 describes Existing plus Project Conditions, including the method used to estimate the amount of traffic added to the surrounding roadways by the proposed projects and their impacts on the transportation system. Background Conditions are described in Chapter 4 and Cumulative Conditions are described in Chapter 5. A discussion of site access and on-site circulation is contained in Chapter 6. Chapter 7 discusses construction related impacts.

FIGURE 1
PROJECT LOCATION



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ARIBA CAMPUS EXPANSION SITE PLAN

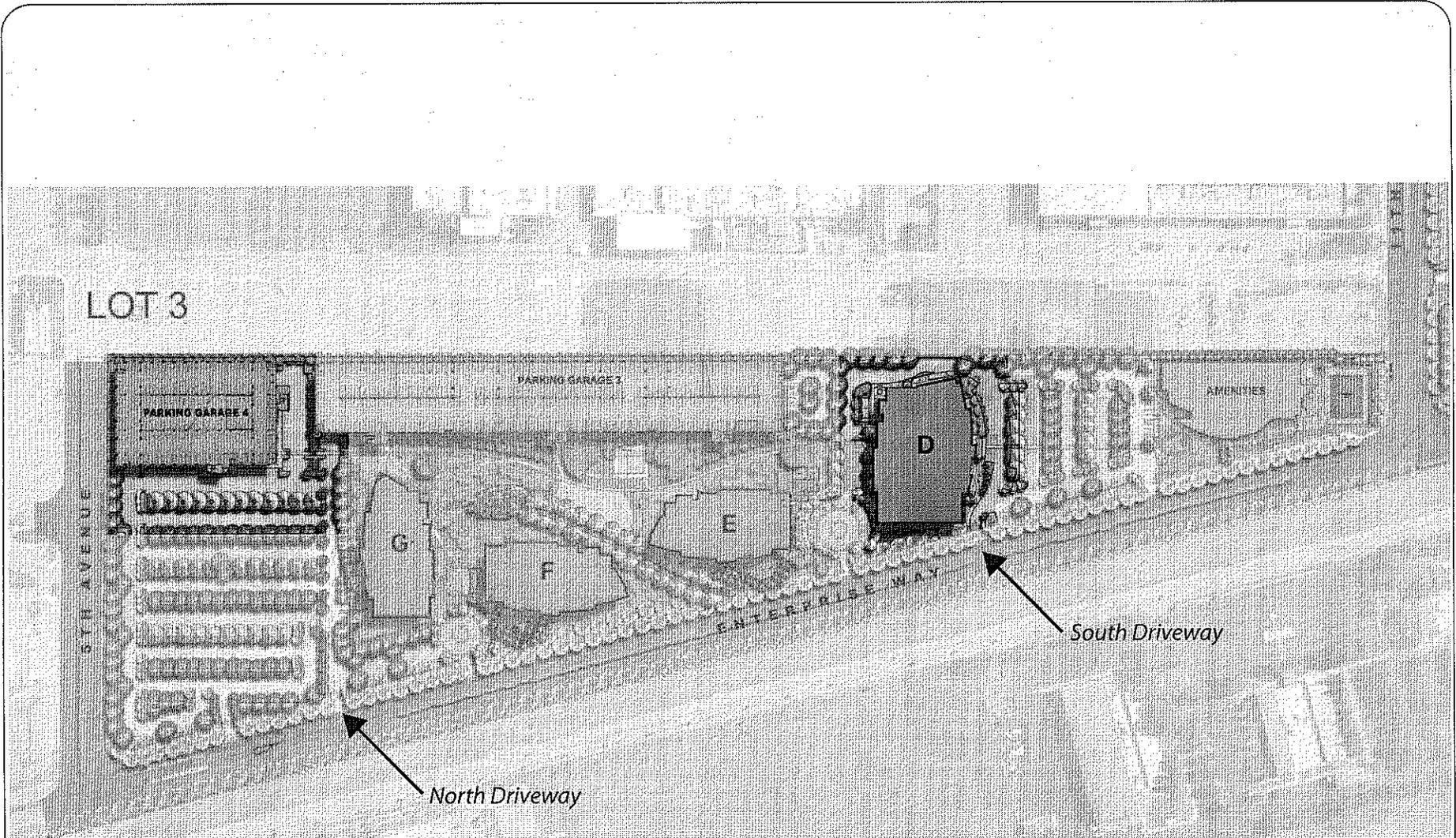


SJ11-1244_2A_MP Site Plan



Not to Scale

MOFFETT TOWERS EXPANSION SITE PLAN



S:\11-1244_2B_MTSitePlan



Not to Scale

Source: DES Architects|Engineers, April 11, 2011

2. EXISTING CONDITIONS

This chapter describes the existing conditions of the roadway facilities, pedestrian and bicycle facilities, and transit service. It also presents existing traffic volumes and operations for the study intersections and freeway segments with the results of level of service calculations.

EXISTING ROADWAY NETWORK

State Route 237 (SR 237), US 101, and Central Expressway provide regional access to the project sites. The following streets provide local access to the project sites: Mathilda Avenue, Moffett Park Drive/Manila Drive, 11th Avenue, Innovation Way, Enterprise Way, Middlefield Road, Ellis Street, Mary Avenue, and Maude Avenue. Descriptions of these roadways are presented below. **Figure 1** shows the locations of these facilities in relation to the project sites.

SR 237 is located immediately south of the project sites and provides regional freeway access between the Cities of Mountain View and Milpitas. SR 237 is an east-west freeway with two mixed-flow lanes and one high occupancy vehicle (HOV) lane in each direction. HOV lanes, also known as diamond or carpool lanes, restrict use to vehicles with two or more persons (carpool, vanpool, and buses) or motorcycles during the morning (5:00 AM to 9:00 AM) and evening (3:00 PM to 7:00 PM) commute periods. Access from SR 237 is provided via its interchanges with Ellis Street (via US 101), Mathilda Avenue, Fair Oaks Avenue, and Lawrence Expressway. Near the project site SR 237 has an average daily traffic (ADT) volume of approximately 90,000 vehicles.

US 101 extends north through San Francisco and south through San Jose. Near the project sites, US 101 travels in an east-west direction with approximately 140,000 daily vehicles. The freeway has three mixed-flow lanes and one HOV lane in each direction. Similar to SR 237, interchanges at Ellis Street, Mathilda Avenue, Fair Oaks Avenue, and Lawrence Expressway provide local access to the project site.

Central Expressway is a divided four-lane east-west expressway between San Antonio Road in the City of Mountain View in the west and De La Cruz Boulevard in the City of Santa Clara to the east. To the west of San Antonio Road, Central Expressway continues to Menlo Park as Alma Road. Central Expressway provides local access to the site via interchanges at Mathilda Avenue, and Mary Avenue. Near the project site, Central Expressway carries about 21,000 daily vehicles.

Mathilda Avenue is a major six-lane north-south arterial that also provides regional access to SR 237 and US 101. North of SR 237, Mathilda Avenue connects to Caribbean Drive, which is the extension of Lawrence Expressway. To the south, Mathilda Avenue passes through central Sunnyvale and becomes Sunnyvale-Saratoga Road ultimately connecting to I-280 and SR 85. Mathilda Avenue is one of the City of Sunnyvale's designated truck routes for trucks over three tons in weight. Approximately 45,000 daily vehicles travel on Mathilda Avenue south of SR 237 on an average weekday.

Moffett Park Drive/Manila Drive is a two-lane east-west roadway that runs along the southern border of the Ariba Campus. Moffett Park Drive/Manila Drive provides direct regional access to the project site at the SR 237 interchange (except for the westbound off-ramp) and US 101 interchange and has an ADT of approximately 5,000 vehicles. Moffett Park Drive connects to Mathilda Avenue east of the project area and extends east as far as Caribbean Drive. Manila Drive extends west of the project site to Moffett Park Boulevard in Mountain View. No access is provided to Moffett Park Drive west of Mathilda Avenue from the SR 237 westbound off-ramp; vertical delineators currently prevent access to the northbound left-turn lanes.

11th Avenue is a four-lane, east-west roadway that extends from Enterprise Way to Innovation Way. 11th Avenue bisects the project area; Moffett Towers is located to the north and the Ariba Campus to the south. Direct access is provided to the Ariba Campus via two driveways from 11th Avenue.

Innovation Way is a four-lane, north-south roadway that extends from Moffett Park Drive to 11th Avenue. Innovation Way borders the Ariba Campus on the east side and is the main access point to the site's new parking garage.

Enterprise Way is a four-lane, north-south roadway that borders the Moffett Towers portion of the project on the west. Direct access to Moffett Towers is provided from Enterprise Way. In the south, Enterprise Way connects to Moffett Park/Manila Drive and provides regional access to US 101 and SR 237 from the site. There is an existing security gate located on Enterprise Way approximately 2,500 feet north of the 11th Avenue intersection (just south of 5th Avenue), which restricts access into the Lockheed Martin complex.

Middlefield Road is a four-lane, east-west roadway that connects Redwood City and Palo Alto to Central Expressway in Sunnyvale. Middlefield Road provides a partial interchange at SR 237, which is complimented by the Maude Avenue and SR 237 interchange just to the north. Middlefield Road provides local access to the project site via Ellis Street and Manila Drive.

Ellis Street is a four-lane, north-south roadway from Middlefield Road to Moffett Field Air Station. At its northern terminus there is a security station restricting access; all other vehicles must continue eastbound on Manila Drive in the direction of the project area. Ellis Street provides a full interchange with US 101.

Mary Avenue is a four-lane, north-south roadway that extends from Homestead Road in Cupertino to Almanor Avenue (just north of Maude Avenue). It has an ADT of approximately 12,000 vehicles near the project site. Mary Avenue currently provides access to Central Expressway. There are future plans to continue Mary Avenue to the north, passing over US 101, SR 237, and Moffett Park Drive before terminating at 11th Avenue. The Mary Avenue extension project is identified by the City as a fiscally constrained improvement project and the timeline for construction of the extension is uncertain at this time; therefore, the Mary Avenue extension project is not included as a future transportation improvement under the Background No Project and Background plus Project scenarios (Scenarios 3 and 4).

Maude Avenue is a four-lane, east-west roadway from SR 237 in the west to Wolfe Road in the east. It also has a partial interchange with SR 237, complementing the Middlefield Road interchange. Near the project site Maude Avenue has an ADT of approximately 15,000 vehicles on an average weekday.

PEDESTRIAN FACILITIES

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. In the vicinity of the project sites, sidewalks are provided on the east side of Enterprise Way between Moffett Park Drive and 5th Avenue, on both sides of 11th Avenue between Enterprise Way and Innovation Way, and on both sides of Innovation Way. There are no sidewalks on Moffett Park Drive/Manila Drive, though the City has identified sidewalks on Moffett Park/Manila Drive as a future pedestrian improvement. Most study intersections include crosswalks and pedestrian signals on all approaches.

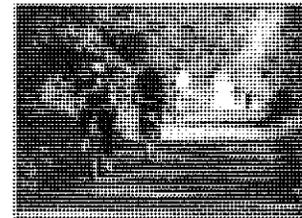
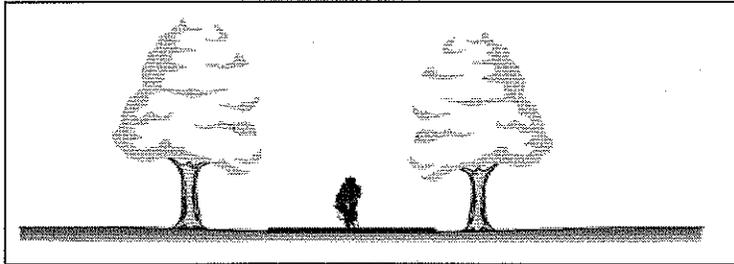
At the Mathilda Avenue/SR 237 interchange, north-south pedestrian movements are limited to the east side of Mathilda Avenue and east-west crossing of Mathilda Avenue is prohibited within the interchange area. Pedestrians crossing Mathilda (east-west) have to use the crosswalk on the north leg of the Mathilda Avenue/Moffett Park Drive intersection. Sidewalks continue on the east side of Mathilda Avenue from the SR 237 interchange to south of the US 101 interchange, at which point sidewalks continue on both sides of Mathilda Avenue. The City has identified providing sidewalks on both sides of Mathilda Avenue between Moffett Park Drive and US 101 as a future pedestrian improvement and are included in the TIF program.

Crosswalks and pedestrian signals are provided only in the east-west direction of the intersection of Enterprise Way/Manila Drive. A multi-use pedestrian/bicycle bridge crosses US 101 east of Mathilda Avenue providing a pedestrian/bicycle connection between Moffett Park to the north and the residential neighborhood to the south.

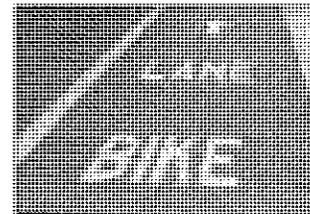
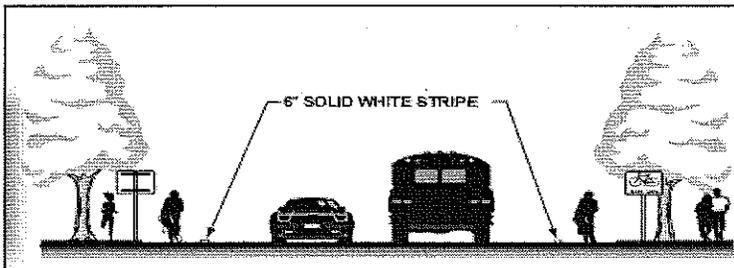
BICYCLE FACILITIES

Bikeway planning and design in California typically relies on guidelines and design standards established by California Department of Transportation (Caltrans) in the Highway Design Manual (Chapter 1000: Bikeway Planning and Design). Caltrans provides for three distinct types of bikeway facilities, as described below and shown on the accompanying figures.

- Class I Bikeway (Bike Path) provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.



- Class II Bikeway (Bike Lane) provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.



- Class III Bikeway (Bike Route) provides for a right-of-way designated by signs or pavement markings (sharrows) for shared use with pedestrians or motor vehicles. Sharrows are a type of pavement marking (bike and arrow stencil) placed to guide bicyclists to the best place to ride on the road, avoid car doors, and remind drivers to share the road with cyclists.

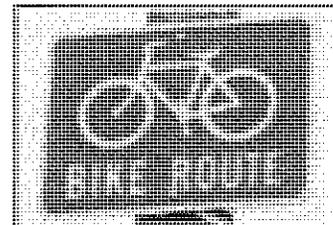
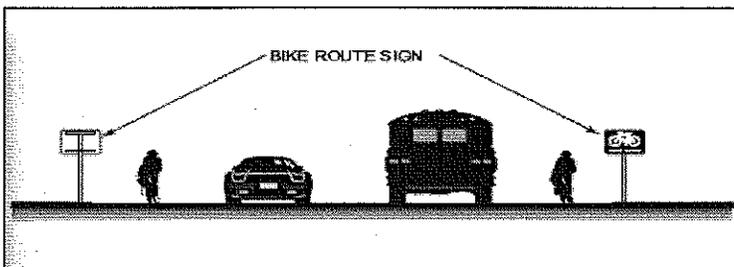


Figure 3 shows the location of the existing bicycle facilities in the vicinity of the project sites.

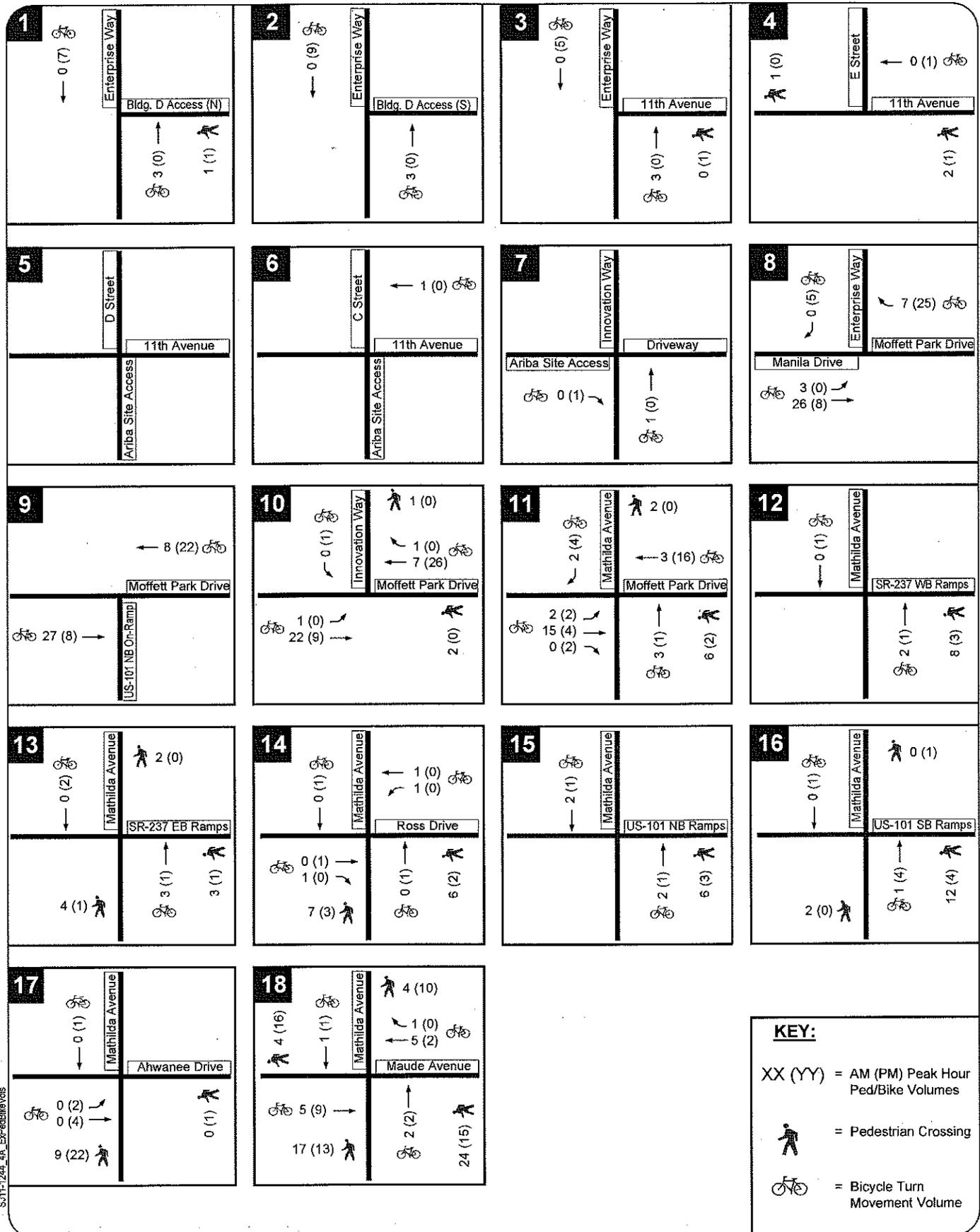
Near the project sites, there are bicycle lanes in both directions along 11th Avenue between Innovation Way and Enterprise Way and on Enterprise Way from Manila Avenue to 5th Avenue. Bicycle lanes are provided on Mathilda Avenue (north of Bordeaux Drive) and Moffett Park Drive (east of Bordeaux Drive). There are also bicycle lanes on Maude Avenue between SR 237 and Mary Avenue, on Ellis Street between Middlefield Road and the US 101 southbound ramps intersection, on Manila drive between Ellis Street, and Enterprise Way, on Bordeaux Drive between Moffett Park Drive and Java Drive, on Borregas Avenue between Maude Avenue and Caribbean Drive, and on Middlefield Road west of Bernardo Avenue. A bicycle route is designated on Mathilda Avenue from Bordeaux Drive to Innovation Way and on Mary Avenue south of Maude Avenue. A discontinuous bicycle path extends from Garner Drive to Weddell Drive along the north side of US 101 east of Mathilda Avenue.

Additionally, VTA has adopted the Santa Clara Countywide Bicycle Plan (CBP). The CBP guides the development of major bicycling facilities by identifying Cross County Bicycle Corridors and other projects of countywide or intercity significance. Several of these routes travel through the study area, including routes along Mary Avenue, Maude Avenue, Middlefield Road, Ellis Street, and Manila Drive/Moffett Park Drive.

Pedestrian and bicycle volumes were collected at all study intersection in March and April 2011. Pedestrian and bicycle volumes in the study network are shown in **Figure 4**. There is moderate bicycle use along Moffett Park Drive during the peak hours; most other bicycle movements have only a few users. Along Mathilda Avenue and on the frontage streets to the project (Enterprise Way, 11th Street, Moffett Park Drive), pedestrian volumes are low. It does appear that pedestrians only cross at marked crossings at most intersections. There is more pedestrian activity on the south end of Mathilda Avenue near Central Expressway. Ellis Street and Middlefield Road also exhibit low-to-moderate pedestrian activity.

FIGURE 4A

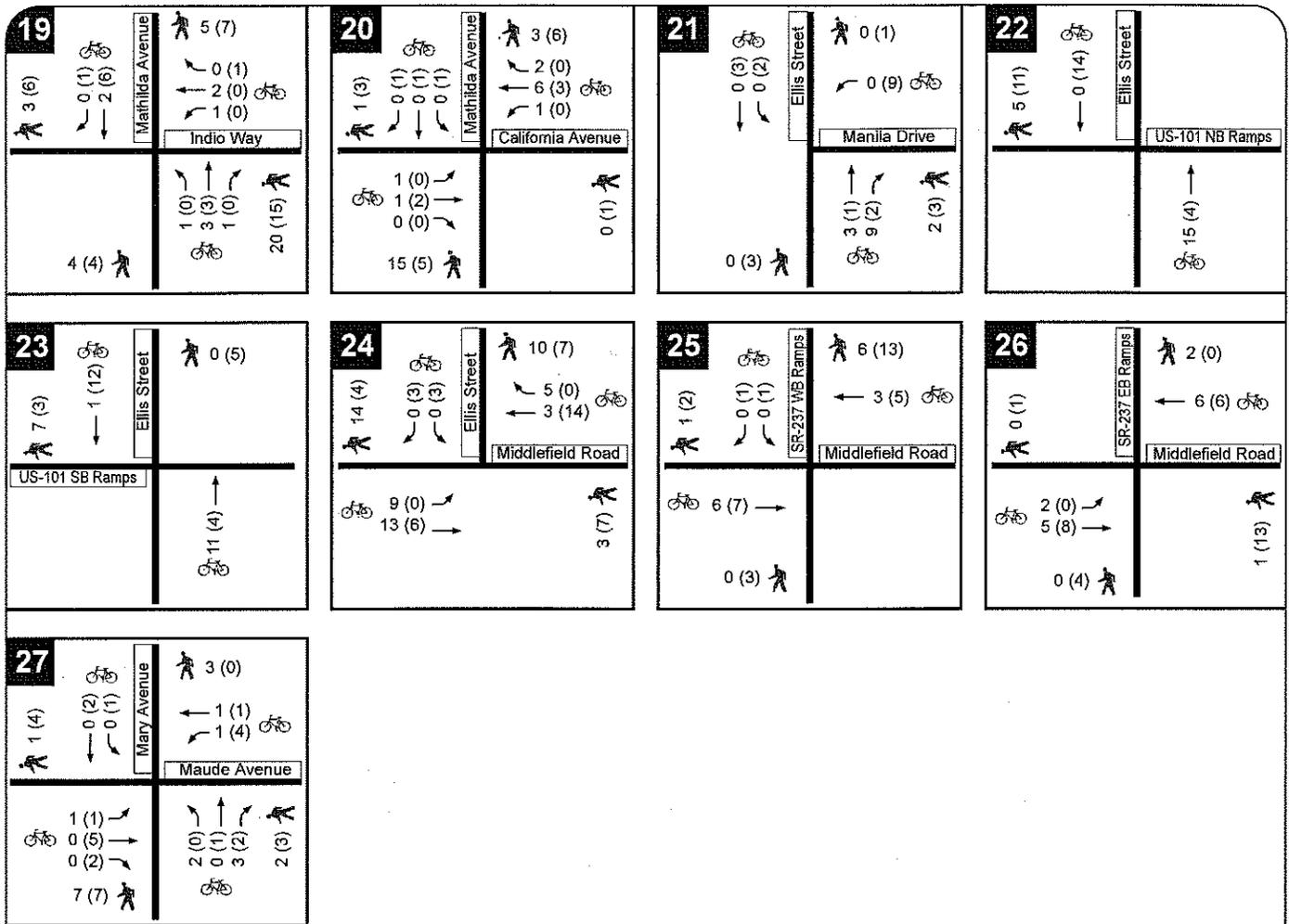
EXISTING PEDESTRIAN AND BICYCLE VOLUMES



S:11-1244-4A_EPFedBikeVols

FIGURE 4B

EXISTING PEDESTRIAN AND BICYCLE VOLUMES



KEY:
 XX (YY) = AM (PM) Peak Hour Ped/Bike Volumes
 = Pedestrian Crossing
 = Bicycle Turn Movement Volume

SJ11-1244-4B_ExpEdBikeVols

EXISTING TRANSIT SERVICE

The project sites are located near the Moffett Park light rail transit (LRT) station, which is on the Mountain View to Winchester Avenue light rail line (line 902) operated by the Santa Clara Valley Transportation Authority (VTA). VTA also operates bus service in the area. Shuttles to Caltrain and Altamont Commuter Express (ACE) stations also serve the Moffett Park and Ariba campuses. Figure 5 shows the existing transit service near the project site, which are described in detail below and summarized in Table 4. Included in the table are the origin and destination, the operating hours, the headways, and the average peak load factor. The average peak load factor is a measure of resource utilization. It compares the supply of seats on a bus versus the average peak number of on-board passengers aboard at any time during the peak period. For all-day service, the average peak load factor is based on the average peak load factor over the entire day.

TABLE 4 EXISTING TRANSIT SERVICE							
Route	From	To	Weekdays			Weekends	
			Average Peak Load Factor ¹	Operating Hours	Peak Headway ² (minutes)	Operating Hours	Headway ² (minutes)
Bus Service (VTA)							
26	Eastridge Transit Center	Lockheed Martin Transit Center	0.49	5:19 a – 11:46 p	30	6:28 a – 10:53 p	30 – 60
54	De Anza College		0.33	6:04 a – 9:04 p	30	7:56 a – 7:54p	45 – 60
120	Fremont BART Station		0.49	6:14 a – 9:17 a 4:07 p – 7:06 p	4 SB Runs – AM 4 NB Runs – PM	No Service	
121	Gilroy Transit Center		0.52	4:31 a – 8:45 a 2:51 p – 7:30 p	30 – 60	No Service	
122	Santa Teresa LRT Station		0.38	5:53 a – 6:43 a 4:46 p – 5:43 p	1 NB Run – AM 1 SB Run – PM	No Service	
321	Great Mall/Main Transit Center		0.08	8:10 a – 8:45 a 5:45 p – 6:28 p	1 WB Run – AM 1 EB Run – PM	No Service	
328	South San Jose		0.24	6:00 a – 7:02 a 5:06 p – 6:09 p	1 NB Run – AM 1 SB Run – PM	No Service	
826 (ACE)	ACE Great America Station		N/A	6:14 a – 9:02 a 3:10 p – 5:37 p	3 WB Runs – AM 3 EB Runs – PM	No Service	
Mary/Moffett Area Caltrain Shuttle	Mountain View Caltrain Station	Alma Plaza	N/A	6:35 a – 10:23 a 3:00 p – 6:30 p	4 NB Runs – AM 4 SB Runs – PM	No Service	
Light Rail Service (VTA)							
902	Downtown Mountain View	Winchester	0.34	4:50 a – 12:34 a	15	6:07 a – 12:32 a	30
Notes:							
1. Average peak load factor is the ratio of the average peak number of on-board passengers aboard during the peak period to supply of seats.							
2. Headways are defined as the time interval between two transit vehicles traveling in the same direction over the same route.							
Source: VTA, Caltrain, April 2011.							

VTA LRT and Local Bus Routes

The VTA Mountain View to Winchester Avenue light rail (line 902) runs along Java Drive, Mathilda Avenue, Moffett Park Drive, and Manila Drive near the project sites. This line operates between 4:50 AM and 12:35 AM on 15- to 30-minute headways. On weekends, service is provided between 6:05 AM and 12:35 AM with 30-minute headways.

Bus Route 26 operates on Mathilda Avenue, Java Drive, and Fair Oaks Avenue. Route 26 provides service between the Eastridge Mall and Lockheed Martin/Moffett Park transit centers. Route 26 follows major arterials and travels through Sunnyvale, Cupertino, San Jose, and Campbell. During weekdays, Route 26 operates between 5:15 AM and 11:50 PM with 20 to 30-minute headways. On weekends, Route 26 operates between 6:25 AM and 11:00 PM with 30-minute headways. Bus stops for Route 26 are provided at Java Drive and the Lockheed Martin/Moffett Park Transit Center.

Similar to Bus Route 26, *Bus Route 54* operates on Mathilda Avenue, Java Drive, and Fair Oaks Avenue. Route 54 provides service between De Anza College and Sunnyvale/Fair Oaks Avenue. During weekdays, Route 54 serves the stops near the project site between 6:00 AM and 9:05 PM with 30-minute headways. On weekends, Route 54 operates between 7:55 AM and 7:55 PM with 45 to 60-minute headways. Bus stops for Route 54 are provided along Mathilda Avenue near Maude Avenue, Ahwanee Avenue, Ross Drive, and north of Moffett Park Drive at the Lockheed Martin/Moffett Park Transit Center.

Additionally, *Bus Route 32* operates on Central Expressway and Mathilda Avenue and could be used as a connection to Bus Route 54. Route 32 provides service between the San Antonio and Santa Clara transit centers. Route 32 follows major arterials and travels through Mountain View, Sunnyvale, and Santa Clara.

Express and Limited Stop Bus Routes

The VTA also runs several express bus routes and limited stop bus routes throughout the project area.

Bus Route 120 is an express bus route that operates on SR 237, Caribbean Drive, Java Drive, and Mathilda Avenue; it connects Fremont (Fremont BART Station) to the Lockheed Martin Transit Center. Four Route 120 runs occur during each weekday peak period (to the project area in the morning and from it in the afternoon). The buses arrive between 6:15 AM and 8:30 AM with 30 to 60-minute headways; the same buses leave between 4:05 PM and 6:15 PM with the same headways.

Bus Route 121 is an express bus route that operates on Lawrence Expressway, Caribbean Drive, Java Drive, and Mathilda Avenue; it connects Gilroy (Gilroy Transit Center) and Morgan Hill (Morgan Hill Caltrain Station) to the Lockheed Martin Transit Center. Six Route 121 runs occur during each weekday peak period (to the project area in the morning and from it in the afternoon). The buses arrive between 5:30 AM and 8:45 AM with 30 to 45-minute headways; the same buses leave between 2:50 PM and 6:10 PM with 30 to 60-minute headways.

Bus Route 122 is an express bus route that operates on US 101, Lawrence Expressway, Caribbean Drive, Java Drive, and Mathilda Avenue; it connects south San Jose (Santa Teresa LRT Station) to the Lockheed Martin Transit Center. One Route 122 run occurs during each weekday peak period (to the project area in the morning and from it in the afternoon). The bus arrives at 6:45 AM and leaves at 4:45 PM.

Bus Route 321 is a limited stop bus route that operates on the Lawrence Expressway, Caribbean Drive, Java Drive, and Mathilda Avenue; it connects Milpitas (Great Mall Transit Center) to the Lockheed Martin Transit Center. One Route 321 run occurs during each weekday peak period (away from the project area in the morning and to it in the afternoon). The bus arrives at 8:45 AM and leaves at 5:45 PM.

Bus Route 328 is a limited stop bus route that operates on the Lawrence Expressway, Caribbean Drive, Java Drive, and Mathilda Avenue; it connects south San Jose (near Almaden Expressway) to the Lockheed Martin

Transit Center. One Route 321 run occurs during each weekday peak period (away from the project area in the morning and to it in the afternoon). The bus arrives at 7:00 AM and leaves at 5:00 PM.

Additionally, *Bus Route 104* passes the project site on US 101 and SR 237; it connects Palo Alto, Mountain View, Milpitas, and San Jose.

Caltrain and ACE Shuttles

Caltrain provides intercity passenger rail service between San Francisco and San Jose. Four *Mary/Moffett Area Caltrain Shuttle* runs connect the Mountain View Caltrain Station with office buildings in the Mary Avenue and Moffett Park areas. During weekday AM and PM commute periods, the Caltrain shuttle operates every 50 to 60 minutes on Mathilda Avenue with a stop near Ahwanee Avenue; there is another stop on Hamlin Court off Ross Drive. The Mountain View station is a designated express train station for Caltrain. Bus service between the Sunnyvale Caltrain Station and the Moffett Park area is provided by VTA Route 54. Additional private shuttles to the Moffett Park area from the Sunnyvale Caltrain Station are operated by local employers. These services are generally limited to the specific employer(s).

The *Altamont Commuter Express* provides passenger rail service between Stockton and San Jose. The *Altamont Commuter Express Red Line Shuttle (Route 826)* provides free shuttle service between buildings in the Moffett Park and the ACE Great America Station in Santa Clara. This shuttle operates on Mathilda Avenue north of the study area. Shuttle stops are provided at the Lockheed Martin/Moffett Park Transit Center. Three shuttle runs operate during each commute period with 60-minute headways.

Local Shuttles

There are a number of local shuttles specific to Moffett Park Area that provide service within Moffett Park and to surrounding neighborhoods and major transit facilities. The Moffett Park Business & Transportation Association provides information on the shuttle programs to the tenant in Moffett Park.

EXISTING TRANSPORTATION DEMAND MANAGEMENT PROGRAMS

The MPSP requires all new projects in the Moffett Park area of Sunnyvale to have transportation demand management (TDM) programs that reduce daily trips by a minimum of 20 percent and peak hour vehicles trips by at least 30 percent. Based on the MPSP, TDM programs need to provide detailed descriptions of the employed TDM strategies and should address penalties for non-compliance. TDM programs include an annual review of employee commuting patterns and need to be submitted to City staff for review.

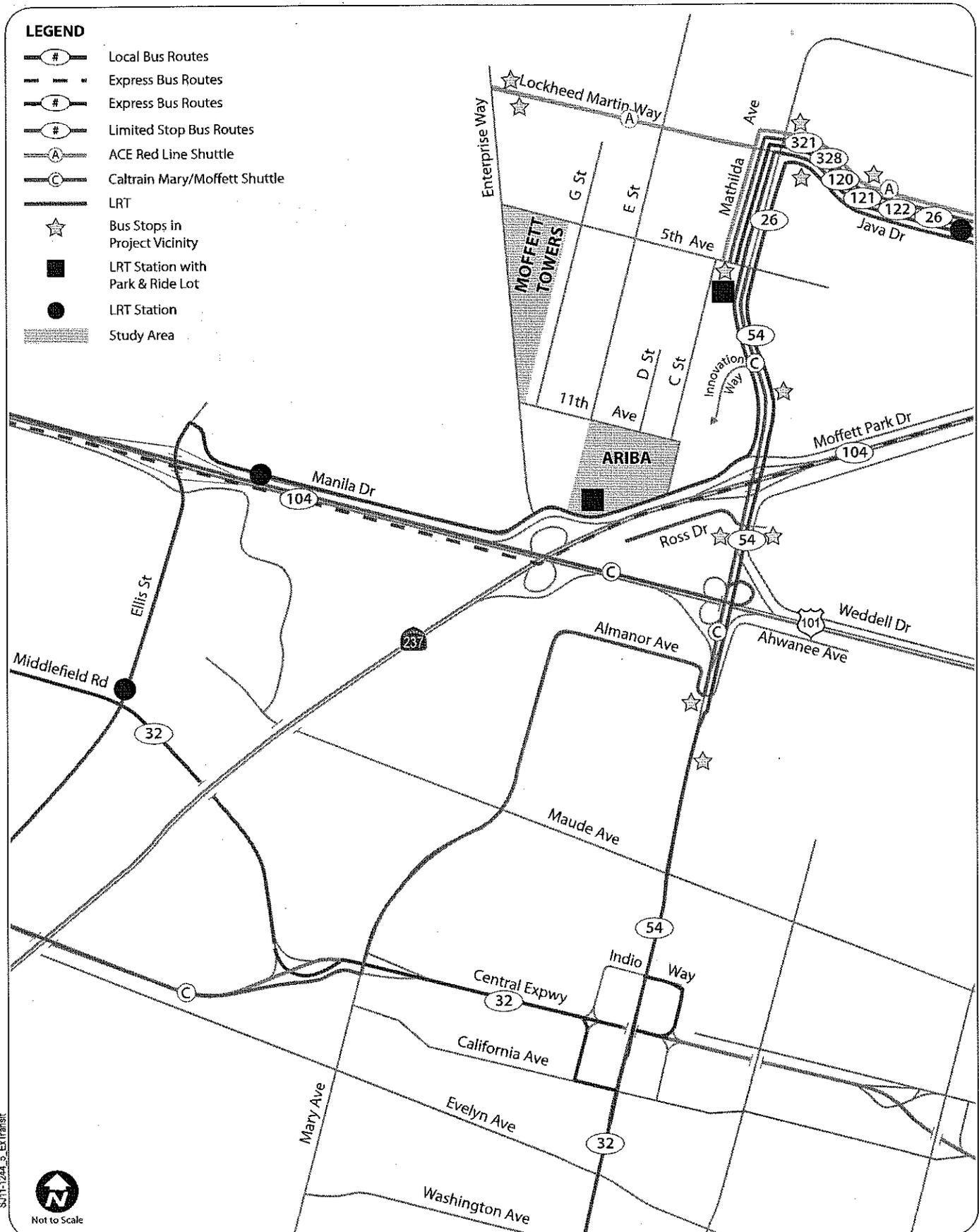
Both the existing Moffett Towers and Ariba sites have active TDM programs that have been approved by the City and the new buildings will fully participate in their respective programs. The Ariba site was approved before adoption of the MPSP with a TDM reduction goal of only 15 percent for both daily and peak hour trips. The following is a partial list of example measures in the TDM programs aimed at reducing both single-occupant vehicle trips and parking demand:

- Bicycle parking including lockers, racks, and cages.
- Showers, changing rooms, and clothing lockers.
- Subsidized transit tickets for all feasible transit modes.
- Preferential carpool and vanpool parking.
- On-site commuter assistance center offering one-stop shopping for transit and commute alternative information.
- High-speed internet connections in employee homes to facilitate telecommuting.
- Video conferencing facilities.
- Compressed work week program.

- On-site amenities that encourage workers to leave cars at home.
- Bicycle and pedestrian "cash" payments.
- Participation in a guaranteed ride home program.
- Vanpool implementation support.
- Parking "cash out" program where employees are offered a cash incentive not to drive their car to the site.
- Participation in the Moffett Park Business and Transportation Association.
- Participation in the Mary/Moffett and ACE shuttle

FIGURE 5

EXISTING TRANSIT FACILITIES



EXISTING INTERSECTION VOLUMES AND LANE CONFIGURATIONS

The existing operations of the study intersections were evaluated for the highest one-hour volume during the weekday morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak periods. AM and PM peak-hour intersection turning movement counts were conducted in March and April 2011. Copies of new traffic counts are included in **Appendix A. Figure 6** presents the existing AM and PM peak-hour turning movement volumes, lane configurations, and traffic control devices at the study intersections.

EXISTING INTERSECTION LEVELS OF SERVICE

Existing intersection lane configurations, signal timings, and peak-hour turning movement volumes were used to calculate the levels of service for the key intersections during each peak hour. The results of the LOS analysis using the TRAFFIX software program for Existing Conditions are presented in **Table 5. Appendix B** contains the corresponding calculation sheets.

The results of the LOS calculations indicate that all study intersections operate at acceptable service levels (LOS D or better for City intersections and LOS E or better for regionally significant and CMP intersections) during the AM and PM peak periods.

Intersection		Peak Hour ¹	Intersection Control	Delay ²	LOS ³
1	Enterprise Way/Building D Site Access (North)	AM PM	Side-Street Stop	10.8 11.1	B B
2	Enterprise Way/Building D Site Access (South)	AM PM	Side-Street Stop	0.0 10.0	A A
3	Enterprise Way/11 th Avenue	AM PM	All-Way Stop	8.9 8.8	A A
4	E Street/11 th Avenue	AM PM	All-Way Stop	7.3 7.3	A A
5	D Street/Ariba Site Access/11 th Avenue	AM PM	All-Way Stop	7.6 7.5	A A
6	C Street/Ariba Site Access/11 th Avenue	AM PM	All-Way Stop	7.5 7.9	A A
7	Innovation Way/Ariba Site Access	AM PM	Side-Street Stop	8.8 11.3	A B
8	Enterprise Way/Manila Drive/Moffett Park Drive	AM PM	Signal	12.4 10.9	B B+
9	US 101 Northbound On-Ramp/Moffett Park Drive	AM PM	Signal	1.3 7.5	A A
10	Innovation Way/Moffett Park Drive	AM PM	Signal	6.1 12.2	A B
11	Mathilda Avenue/Moffett Park Drive**	AM PM	Signal	16.4 21.5	B C+
12	Mathilda Avenue/SR 237 Westbound Ramps**	AM PM	Signal	18.6 17.2	B- B

**TABLE 5
EXISTING INTERSECTION LEVELS OF SERVICE**

	Intersection	Peak Hour ¹	Intersection Control	Delay ²	LOS ³
13	Mathilda Avenue/SR 237 Eastbound Ramps**	AM PM	Signal	18.5 13.0	B- B
14	Mathilda Avenue/Ross Drive**	AM PM	Signal	15.6 12.0	B B
15	Mathilda Avenue/US 101 Northbound Ramps**	AM PM	Uncontrolled	N/A N/A	N/A N/A
16	Mathilda Avenue/US 101 Southbound Ramps**	AM PM	Uncontrolled	N/A N/A	N/A N/A
17	Mathilda Avenue/Almanor Avenue/Ahwanee Avenue**	AM PM	Signal	22.1 20.5	C+ C+
18	Mathilda Avenue/Maude Avenue*	AM PM	Signal	42.9 28.0	D C
19	Mathilda Avenue/Indio Way**	AM PM	Signal	17.0 14.6	B B
20	Mathilda Avenue/California Avenue**	AM PM	Signal	17.8 18.2	B B-
21	Ellis Street/Manila Drive***	AM PM	All-Way Stop	8.1 9.8	A A
22	Ellis Street/US 101 Northbound Ramps***	AM PM	Signal	16.4 22.2	B C+
23	Ellis Street/US 101 Southbound Ramps***	AM PM	Signal	17.5 12.9	B B
24	Ellis Street/Middlefield Road***	AM PM	Signal	14.1 21.6	B C+
25	SR 237 Westbound Ramps/Middlefield Road***	AM PM	Signal	18.7 18.8	B- B-
26	SR 237 Eastbound Ramps/Middlefield Road***	AM PM	Signal	19.9 15.9	B- B
27	Mary Avenue/Maude Avenue	AM PM	Signal	26.5 23.6	C C

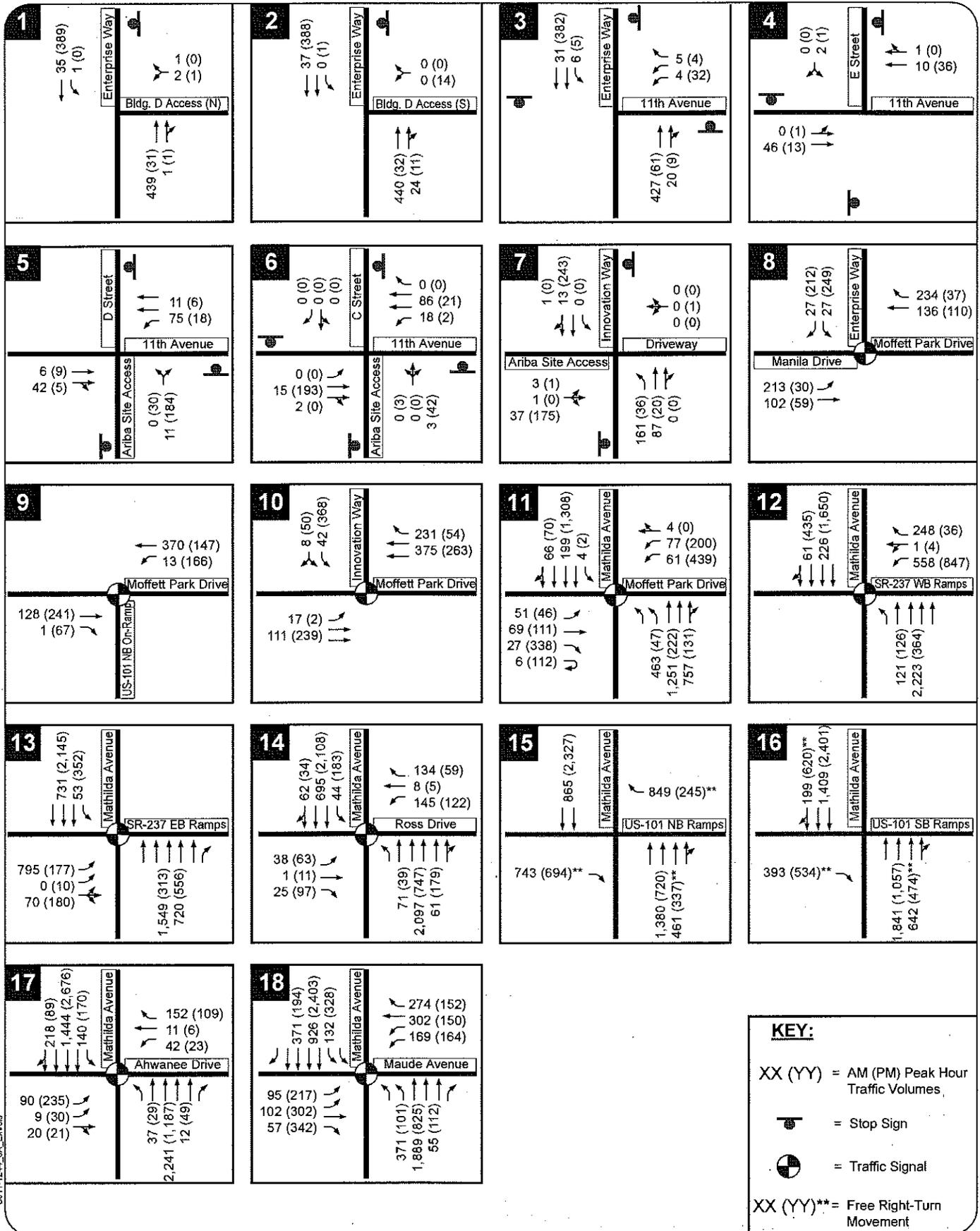
Notes:

- 1 AM = morning peak hour, PM = afternoon peak hour.
 - 2 Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Signalized intersections include adjusted saturation flow rates to reflect Santa Clara County Conditions per VTA guidelines. Total control delay for the worst movement is presented for side-street stop-controlled intersections
 - 3 LOS = Level of Service. LOS calculations conducted using the TRAFFIX level of service analysis software package, which applies the methodology described in the 2000 HCM.
- * CMP intersection with LOS E threshold.
 ** Regionally significant intersection with LOS E threshold.
 *** City of Mountain View intersection.

Source: Fehr & Peers, April 2011.

FIGURE 6A

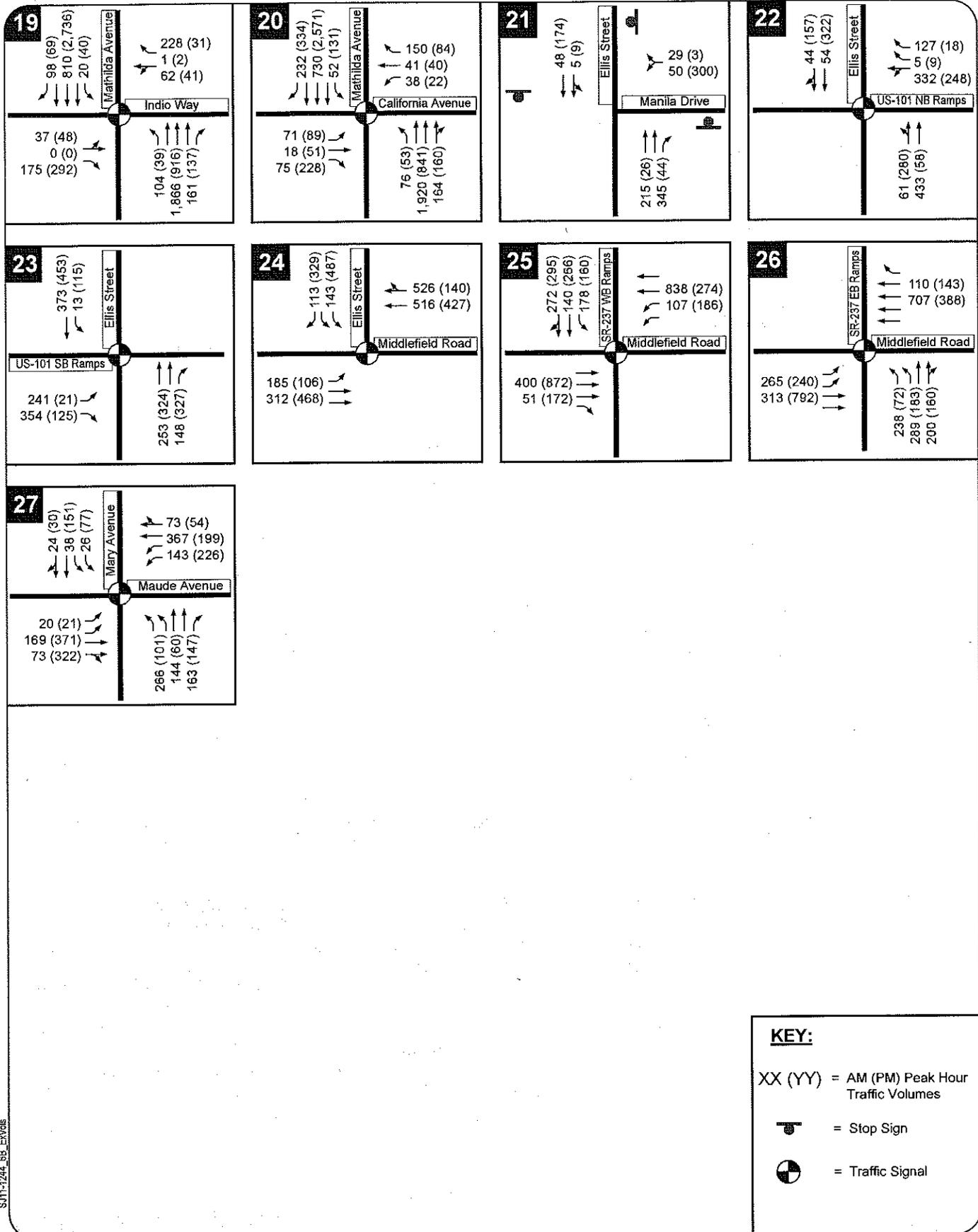
EXISTING LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



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FIGURE 6B

EXISTING LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



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Qualitative Evaluation of Synchro/SimTraffic Analysis for Mathilda Avenue Corridor

The study intersections on the Mathilda Avenue corridor between Moffett Park Drive and Almanor Avenue are closely spaced and the corridor experiences operational issues beyond simple intersection LOS primarily due to vehicle weaving. The TRAFFIX analysis software program does not accurately capture the operations of the Mathilda Avenue corridor since it does not evaluate the interactions of closely spaced and coordinated intersections. To supplement the TRAFFIX analysis results, the results and findings from earlier studies that used the Synchro and SimTraffic software programs to evaluate the Mathilda Avenue corridor are discussed (MPSP, Moffett Towers TIA, VTA State Route 237 Corridor Study, and the Citywide Deficiency Plan).

Based on the Synchro analysis presented in the MPSP EIR², the Mathilda Avenue Corridor between Moffett Park Drive and Ross Drive operates at acceptable service levels during the morning peak period. The Mathilda Avenue/Moffett Park Drive intersection operates at unacceptable LOS during the PM peak hour, with the remaining intersections operating at acceptable service levels. Based on the Synchro analysis the overall coordinated signal system for the Mathilda Avenue corridor operates at LOS B during both peak periods.

The MPSP EIR also analyzed the Mathilda Avenue corridor using SimTraffic analysis software to evaluate the effectiveness of signal coordination and queuing impacts. The results showed that during the AM peak hour the northbound approach at the Mathilda Avenue/Ross Drive intersection and during the PM peak hour the westbound approach and southbound through movement at the Mathilda Avenue/Moffett Park Drive intersection experience some additional queuing beyond the provided storage lengths; though queues did not extend more than three car lengths (about 75 feet) beyond available storage capacities.

The intersection turning movement volumes from the MPSP EIR were compared to the 2011 counts collected for this report. On average the 2011 AM peak hour volumes are about nine percent lower and the 2011 PM peak hour volumes are about two percent higher than the volumes collected for the MPSP. Overall, this demonstrates that the Synchro and SimTraffic results from the MPSP EIR are applicable to the results for this report. Additionally, the section below on field observation highlights some of the queuing and weaving issues for the Mathilda Avenue corridor.

FIELD OBSERVATIONS

Field observations of the study intersections were conducted during the morning and evening peak hours in March and April 2011. In most cases, the intersections were observed to operate at the calculated levels of service for each peak hour. However, in some locations there were differences between the observed and calculated operations. During both AM and PM peak commute periods operations at the intersections of Mathilda Avenue/Moffett Park Drive, Mathilda Avenue/SR 237 westbound ramps, and Mathilda Avenue/SR 237 eastbound ramps experienced high traffic volumes that caused long queues and congestion.

Mathilda Avenue, from Moffett Park Drive to Ross Drive – There are four closely spaced, signalized intersections within a distance of 750 feet in this section of Mathilda Avenue. These intersections carry traffic using three major regional roadways: SR 237, US 101, and Mathilda Avenue. The combination of heavy traffic volumes and close intersection spacing make lane changes difficult. The weaving maneuvers for each intersection are described below. In addition, several through lanes on Mathilda Avenue ultimately end in turn lanes at downstream intersections (this condition is commonly referred to as a trap lane). A diagram of the roadway geometry for this corridor is presented on **Figure 7**. As a result of the existing roadway configuration, a large number of weaving maneuvers occur and vehicles spill back to adjacent intersections resulting in travel delays. The TRAFFIX level of service program cannot fully account for these complex maneuvers; therefore, other factors and analysis methods were considered when interpreting the LOS results, as described above.

² Moffett Park Specific Plan Environmental Impact Report, RBF Consulting, 2002.

Mathilda Avenue/Moffett Park Drive – In the AM peak hour, at the Mathilda Avenue/Moffett Park Drive intersection, the heaviest movements were the northbound through and left-turn movements. Due to the short storage length (90 feet) between Moffett Park Drive and the westbound SR 237 ramps, northbound traffic frequently spill backed into the Mathilda Avenue/SR 237 westbound ramps intersection.

During the PM peak commute period, southbound Mathilda through traffic does not efficiently utilize the available green time due to queue spill back from the downstream intersection at Mathilda Avenue/SR 237 Eastbound ramp intersection. This frequently led southbound through traffic to block the intersection, which in turn hinders westbound traffic from making left-turns. It was observed that the westbound left-turn movement had a large queue and only about half of the queue was able to clear during each green phase (cycle). This standing queue resulted in two to three cars per cycle that entered the intersection under the red at the end of each phase serving westbound Moffett Park Drive.

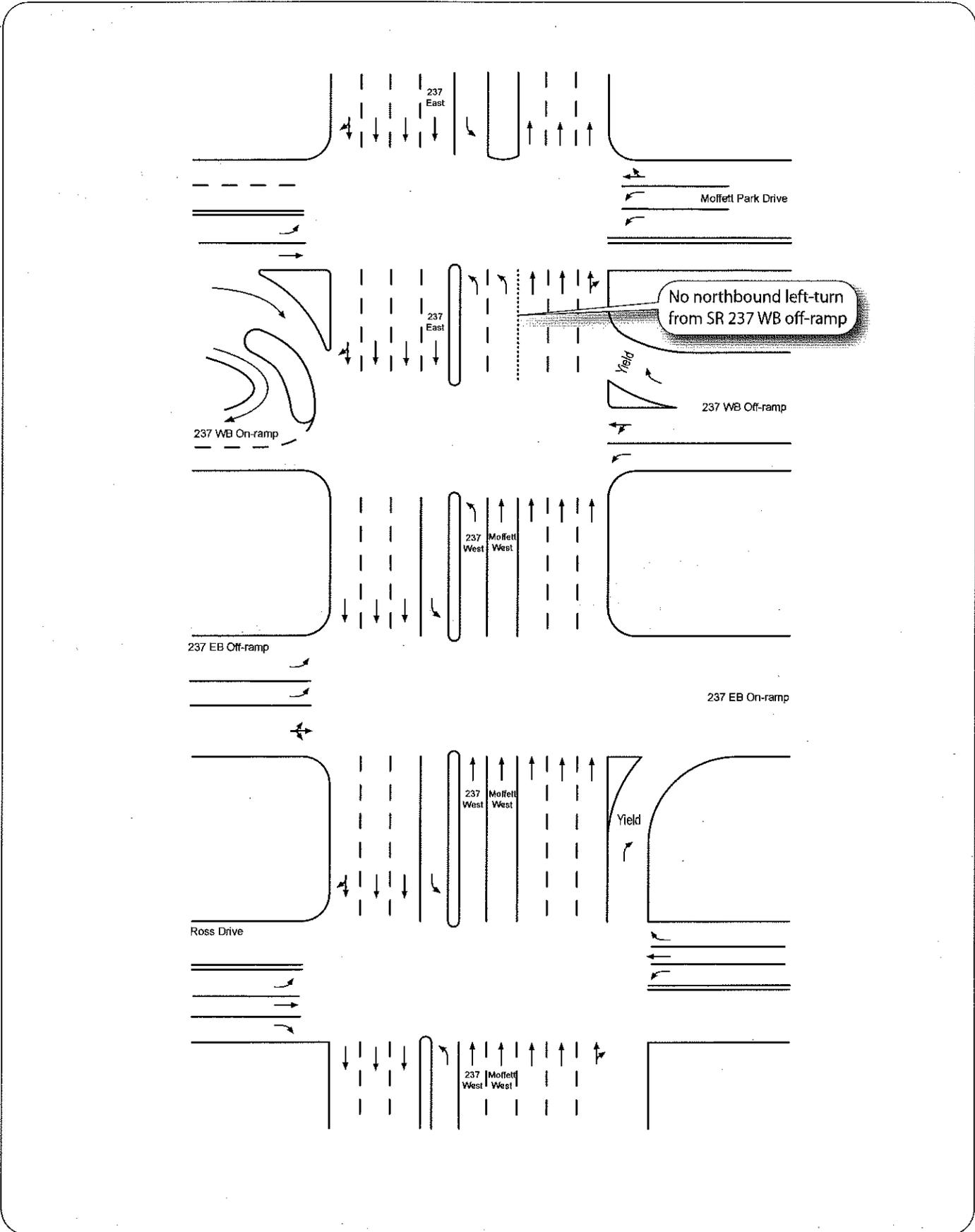
Mathilda Avenue/SR 237 Westbound Ramps – Westbound SR 237 off-ramp traffic cannot access westbound Moffett Park Drive; vertical delineators prohibit the right-turn movement into those lanes. Vehicles would have to cross three lanes of through traffic Mathilda Avenue to access the northbound left-turn lane. These maneuvers would have to be accomplished in less than 100 feet.

Mathilda Avenue/SR 237 Eastbound Ramps – During the AM peak period, traffic was heavy at the intersection of Mathilda Avenue/SR 237 Eastbound ramps; however, there was little congestion and no illegal movements observed. During the PM peak period, the southbound through and left-turn lanes have limited storage capacity, which causes vehicles to spill back into the upstream intersection at Moffett Park Drive.

Mathilda Avenue/Ross Drive - During the AM peak period, traffic is heaviest in the northbound direction (through movements). Specifically, lane utilization is the heaviest in the outer through lane, with vehicles lining up to access the SR 237 eastbound on-ramp at the next intersection. Queues occasionally backed up near the northbound off-ramp, but cleared within two minutes. The queues did affect freeway or ramp operations. In the PM peak hour, no major queues or delays were observed. Southbound traffic is held at the signal for the SR 237 eastbound off-ramp and approaches the Mathilda Avenue/Ross Drive intersection in smaller platoons (groups), which minimizes potential delay and queuing problems.

FIGURE 7

MATHILDA AVENUE ROADWAY DIAGRAM



SJ11-1244_7_GeoMathilda

EXISTING FREEWAY SEGMENT LEVELS OF SERVICE

According to VTA's *Transportation Impact Analysis Guidelines* (VTA, 2009) a freeway segment analysis should be included if the project meets one of the following requirements:

1. The proposed development project is expected to add traffic equal to at least one percent of a freeway segment's capacity.
2. The proposed development project is adjacent to one of the freeway segment's access or egress points
3. Based on engineering judgment, Lead Agency staff determines that the freeway segment should be included in the analysis.

For mixed-flow lanes, freeway segment capacities are defined as 2,200 vehicles per hour per lane (vphpl) for four-lane freeway segments and 2,300 vphpl for six-lane freeway segments. HOV lane capacities are defined between 1,800 to 1,900 vphpl.

Table 6 contains the existing freeway segment levels of service for the mixed-flow and HOV lanes based on the segment densities reported in the VTA's *2010 CMP Monitoring and Conformance Report*, which is the most recent report available as of July 2011.

Freeway Segment	Direction	Peak Hour ¹	Lanes		Density ²		LOS ³	
			Mixed	HOV	Mixed	HOV	Mixed	HOV
US 101, Montague Expressway to Great America Parkway	NB	AM	3	1	40	29	D	D
		PM	3	1	60	21	F	C
	SB	AM	3	1	24	20	C	C
		PM	3	1	106	66	F	F
US 101, Great America Parkway to Lawrence Expressway	NB	AM	3	1	30	21	D	C
		PM	3	1	47	12	E	B
	SB	AM	3	1	30	12	D	B
		PM	3	1	83	65	F	F
US 101, Lawrence Expressway to Fair Oaks Avenue	NB	AM	3	1	44	17	D	B
		PM	3	1	34	18	D	B
	SB	AM	3	1	32	20	D	C
		PM	3	1	46	26	D	C
US 101, Fair Oaks Avenue to Mathilda Avenue	NB	AM	3	1	40	24	D	C
		PM	3	1	29	16	D	B
	SB	AM	3	1	31	20	D	C
		PM	3	1	34	15	D	B
US 101, Mathilda Avenue to SR 237	NB	AM	3	1	54	54	E	E
		PM	3	1	21	14	C	B
	SB	AM	3	1	23	31	C	D
		PM	3	1	27	28	D	D
US 101, SR 237 to Moffett Boulevard	NB	AM	3	1	95	88	F	F
		PM	3	1	55	18	E	B
	SB	AM	3	1	52	30	E	D
		PM	3	1	39	20	D	C

TABLE 6
EXISTING FREEWAY SEGMENT LEVELS OF SERVICE

Freeway Segment	Direction	Peak Hour ¹	Lanes		Density ²		LOS ³	
			Mixed	HOV	Mixed	HOV	Mixed	HOV
SR 237, Maude Avenue to US 101	EB	AM	2	0	33	N/A	D	N/A
		PM	2	0	16	N/A	B	N/A
	WB	AM	2	0	28	N/A	D	N/A
		PM	2	0	70	N/A	F	N/A
SR 237, US 101 to Mathilda Avenue	EB	AM	2	0	35	N/A	D	N/A
		PM	2	0	30	N/A	D	N/A
	WB	AM	2	0	49	N/A	E	N/A
		PM	2	0	85	N/A	F	N/A
SR 237, Mathilda Avenue to N. Fair Oaks Avenue	EB	AM	2	1	51	25	E	C
		PM	2	1	38	7	D	A
	WB	AM	3	0	51	N/A	E	N/A
		PM	3	0	51	N/A	E	N/A
SR 237, N. Fair Oaks Avenue to Lawrence Expressway	EB	AM	2	1	41	23	D	C
		PM	2	1	80	20	F	C
	WB	AM	2	1	33	23	D	C
		PM	2	1	40	19	D	C
SR 237, Lawrence Expressway to Great America Parkway	EB	AM	2	1	36	19	D	C
		PM	2	1	88	26	F	C
	WB	AM	2	1	31	18	D	B
		PM	2	1	44	14	D	B

Notes:
 1 AM = morning peak hour, PM = afternoon peak hour.
 2 Measured in passenger cars per mile per lane.
 3 LOS = level of service.
 N/A = Not applicable. Freeway Segment does not have HOV lanes.
Bold font indicates unacceptable operations based on VTA's LOS E Standard.
 Source: 2010 Monitoring and Conformance Report, VTA, May 2011.

The following mixed-flow freeway segments exceed VTA's LOS E standard during the specified peak hour:

- US 101, Northbound, Montague Expressway to Great America Parkway (PM peak hour)
- US 101, Southbound, Great America Parkway to Montague Expressway (PM peak hour)
- US 101, Southbound, Great America Parkway to Lawrence Expressway (PM peak hour)
- US 101, Northbound, SR 237 to Moffett Boulevard (AM peak hour)
- SR 237, Westbound, US 101 to Maude Avenue (PM peak hour)
- SR 237, Westbound, Mathilda Avenue to US 101 (PM peak hour)
- SR 237, Eastbound, Fair Oaks Avenue to Lawrence Expressway (PM peak hour)
- SR 237, Eastbound Lawrence Expressway to Great America Parkway (PM peak hour)

All other freeway segments operate at acceptable LOS E or better during both peak periods.

3. EXISTING PLUS PROJECT CONDITIONS

The impacts of the proposed projects are discussed in this chapter. The projects are considered together to ensure that their impacts are not "piece-mealed." First, the method used to estimate the amount of traffic generated by the project is described. Then, the results of the level of service calculations for Existing plus Project Conditions are presented (Project Conditions are defined as Existing Conditions plus traffic generated by the proposed project). A comparison of intersection operations under Existing plus Project Conditions and Existing Conditions is presented and the impacts of the project on the study intersections are discussed. Project impacts on freeways are also addressed.

EXISTING PROJECT TRAFFIC ESTIMATES

The amount of traffic added to the roadway system by proposed development is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of traffic added to the roadway network. The second step estimates the direction of travel to and from the project site. The new trips are assigned to specific street segments and intersection turning movements during the third step. The results of the process for the proposed projects are described in the following sections.

Trip Generation

The amount of traffic anticipated to be added to the surrounding roadway system by the proposed project was estimated based data published in Institute of Transportation Engineers' (ITE) *Trip Generation* 8th Edition (2008). The results are presented in **Table 7**.

The proposed project will expand the Ariba campus from 651,562 s.f. of building area to 851,562 s.f. by constructing a new 200,000-square foot building in the northwest corner of the site. The trip generation estimates for this expansion were developed by incorporating the campus size both with and without the expansion into the trip generation equations for "General Office" (Land Use 710) to account for the economies of scale that would result. The Moffett Towers campus is proposing a new 332,956-square foot building (Building D) in the southern portion of its campus. A 207,956-square foot Building D in this location has been approved and was evaluated as part of a 1.7 million-square foot campus in the Moffett Towers TIA, completed in 2006. The previous analysis estimated trips based on "Corporate Headquarters Building" (Land Use 714) and for consistency purposes the same land use assumptions were used.

Although the approved Moffett Towers Building D is not currently constructed, the trips generated by the proposed addition of 125,000-s.f. (of the total 332,956-s.f. building) plus the new 200,000-s.f. Ariba building were used to assess Project impacts. Traffic for the approved 207,956-s.f. Moffett Towers Building D will be included under Background and Cumulative Conditions analyses.

As discussed under Existing Conditions, the MPSP requires all new projects in the Moffett Park area of Sunnyvale to have transportation demand management (TDM) programs that reduce daily and peak hour vehicles trips. Both the existing Moffett Towers and Ariba sites have active TDM programs and the two project sites will fully participate in their respective TDM programs. Based on the guidelines from the MPSP, the Moffett Towers TDM program is required to reduce daily trips by 20 percent and peak hour trips by 30 percent. The Ariba site was approved before adoption of the MPSP with a TDM reduction goal of only 15 percent for both daily and peak hour trips. However, VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips for projects near a light rail station that have an effective TDM program. Therefore, the more conservative 9.5 reduction was applied. As shown in **Table 7**, the proposed project is estimated to generate 2,064 net new daily trips, 339 net new AM peak-hour trips (306 inbound trips and 33 outbound trips), and 334 net new PM peak-hour trips (47 inbound trips and 287 outbound trips).

**TABLE 7
TRIP GENERATION – ARIBA CAMPUS AND MOFFETT TOWERS EXPANSIONS**

Land Use	ITE Code	Units ¹	Daily		AM Peak Hour			PM Peak Hour				
			Rate	Trips	Rate ²	In	Out	Total	Rate ²	In	Out	Total
Existing Ariba Campus ³	710	651.562 ksf	8.67	5,648	1.29	739	101	840	1.24	138	671	809
9.5% TDM Program Reduction ⁴				536		70	10	80		13	64	77
<i>Existing Ariba Vehicle Trips (A)</i>				5,112		669	91	760		125	607	732
Ariba Campus with Expansion ³	710	851.562 ksf	8.15	6,942	1.22	916	125	1,041	1.21	176	857	1,033
9.5% TDM Program Reduction ⁴				660		87	12	99		17	81	98
<i>Total Future Ariba Vehicle Trips (B)</i>				6,282		829	113	942		159	776	935
<i>New Ariba Vehicle Trips (C = B - A)</i>				1,170		160	22	182		34	169	203
Moffett Towers Building D (Previously Approved) ⁵	714	207.956 ksf	7.92	1,648	1.48	286	22	308	1.37	29	256	285
9.5% TDM Program Reduction ⁴				104		27	2	29		3	24	27
<i>Previously Approved Moffett Towers Building D Net Vehicle Trips (D)</i>				1,544		259	20	279		26	232	258
Proposed Moffett Towers Building D ⁵	714	332.956 ksf	7.81	2,602	1.45	448	34	482	1.29	43	387	430
9.5% TDM Program Reduction ⁴				164		43	3	46		4	37	41
<i>New Moffett Towers Building D Vehicle Trips (E)</i>				2,438		405	31	436		39	350	389
<i>New Moffett Towers Building D Vehicle Trips (F = E - D)</i>				894		146	11	157		13	118	131
<i>Project Net New Project Trips (C + F) (Ariba and Moffett Towers Building D Expansions Only)</i>				2,064		306	33	339		47	287	334

Notes:
1. ksf = 1,000 square feet
2. Rate per ksf
3. Following ITE trip generation equations used (ITE Code 710 - General Office Building, 8th Edition):
AM: $\ln(T) = 0.80 \ln(X) + 1.55$; Enter = 88%, Exit = 12%
PM: $T = 1.12 * (X) + 78.81$; Enter = 17%, Exit = 83%
Where X = 1,000 square feet of floor area, T = number of vehicle trips, Ln = natural log
4. Based on allowable TDM and employment near light rail reductions per VTA guidelines.
5. Following ITE trip generation equations used (ITE Code 714 - Corporate Headquarters Building, 7th Edition):
Daily: $\ln(T) = 0.97 \ln(X) + 2.23$
AM: $\ln(T) = 0.95 \ln(X) + 0.66$ Enter = 93%, Exit = 7%
PM: $\ln(T) = 0.87 \ln(X) + 1.01$; Enter = 10%, Exit = 90%
Where X = 1,000 square feet of floor area, T = number of vehicle trips, Ln = natural log
Sources: Trip Generation Manual (8th Edition), ITE, 2008; Transportation Impact Analysis Guidelines, VTA Congestion Management Program, March 2004.

Trip Distribution and Assignment

Since the proposed project is located in the same area as the Moffett Towers project, the trip distribution patterns from the 2006 Moffett Towers TIA were used to develop trip distribution patterns for this report. The 2006 analysis used the City of Sunnyvale travel demand forecasting model to develop the directions of approach and departure. Trip origins and destinations were obtained for parcels in the Moffett Park area. The trip distribution pattern is shown on **Figure 8**.

The project trips were assigned to the roadway network based on the trip distribution pattern discussed above. **Figure 9** shows the AM and PM peak-hour project trips assigned to each turning movement at the study intersections. The trip assignment was added to the existing volumes to establish volumes under Existing plus Project Conditions, as shown on **Figure 10**.

EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection levels of service were calculated with the new traffic added by the proposed project to evaluate the operating conditions of the intersections and identify potential impacts to the roadway system. The results of the intersection level of service calculations for Existing plus Project Conditions are presented in **Table 8**. **Appendix B** contains the corresponding calculation sheets. The results for Existing Conditions are included for comparison purposes, along with the projected increases in critical delay and critical volume-to-capacity (V/C) ratios. Critical delay represents the delay associated with the critical movements of the intersection, or the movements that require the most "green time" and have the greatest effect on overall intersection operations. The changes in critical delay and critical V/C ratio between Existing and Existing plus Project Conditions are used to identify significant impacts.

The results of the LOS calculations indicate that all study intersections operate at acceptable service levels (LOS D or better for City intersections and LOS E or better for regionally significant and CMP intersections) during the AM and PM peak periods.

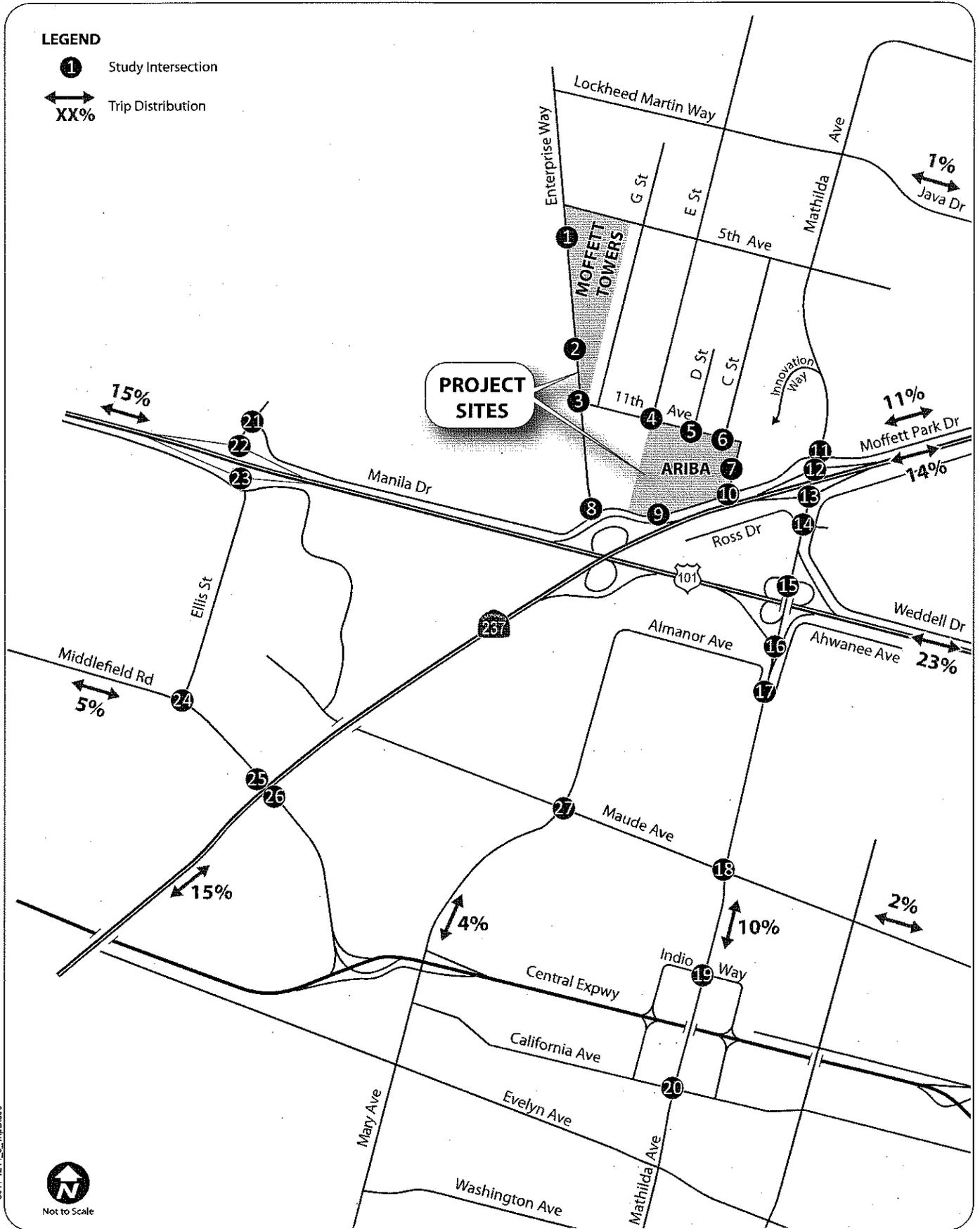
Peak-Hour Signal Warrant Analysis

The California *Manual of Uniform Traffic Control Devices* (MUTCD) contains a number of guidelines, called warrants, to determine whether the installation of a traffic signal at a particular location is appropriate. The peak-hour signal warrant, one of eight warrants, was evaluated for the unsignalized intersections of Enterprise Way/Building D Site Access (North), Enterprise Way/Building D Site Access (South), Enterprise Way/11th Avenue, E Street/11th Avenue, D Street-Ariba Site Access Driveway/11th Avenue, C Street-Ariba Site Access Driveway/11th Avenue, Ariba Site Access Driveway/Innovation Way, and Ellis Street/Manila Drive under both Existing and Existing plus Project Conditions. The results indicate that a traffic signal is not warranted at these locations based on the peak-hour warrant. **Appendix E** contains the peak-hour signal warrants. As shown in **Table 8**, all unsignalized intersections are operating at acceptable levels of service.

The peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a traffic signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions by an experienced engineer. The decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. The responsible state or local agency should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization. On private roads (Enterprise Way), the project sponsor is responsible for the monitoring of actual traffic conditions.

FIGURE 8

PROJECT TRIP DISTRIBUTION

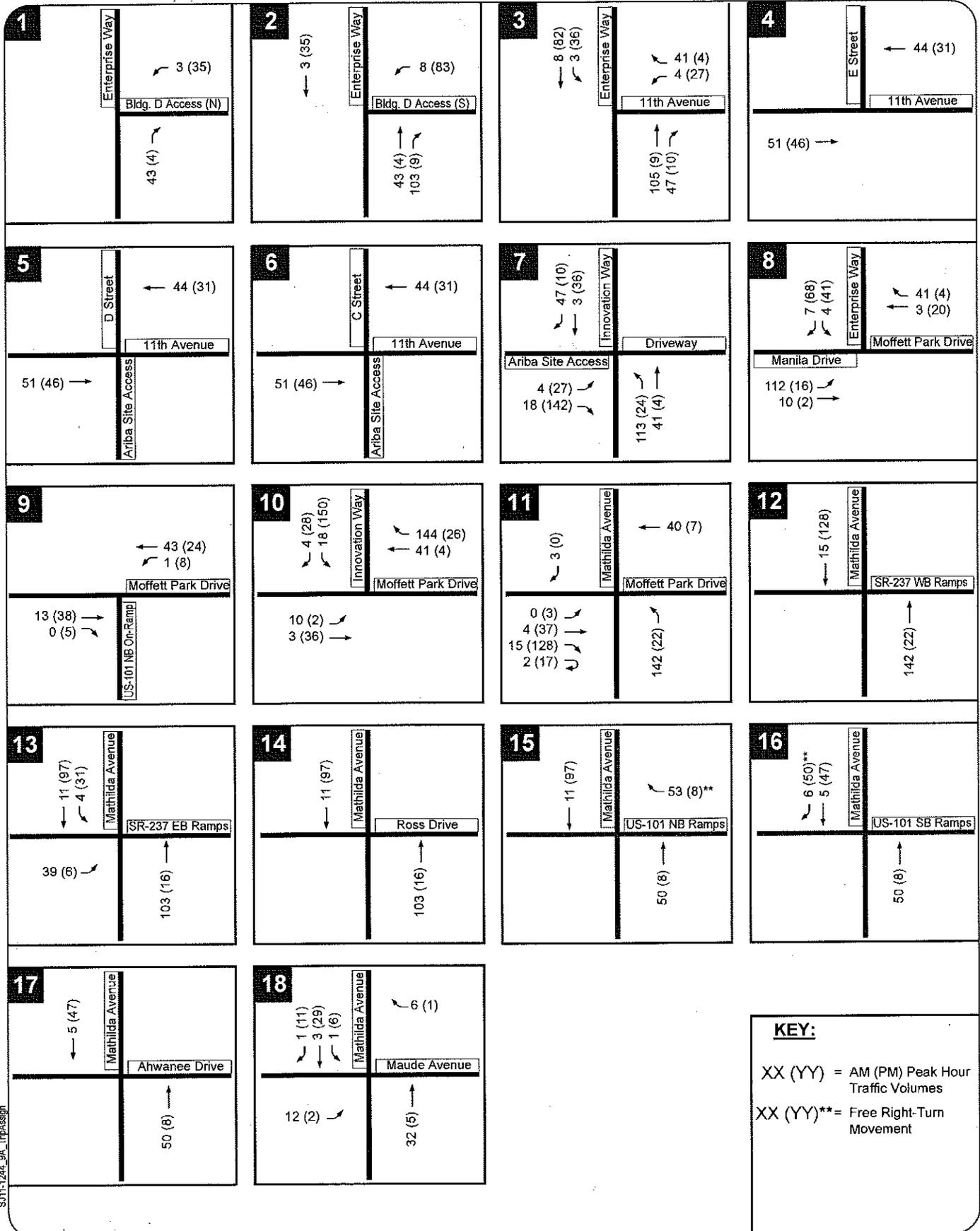


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FIGURE 9A

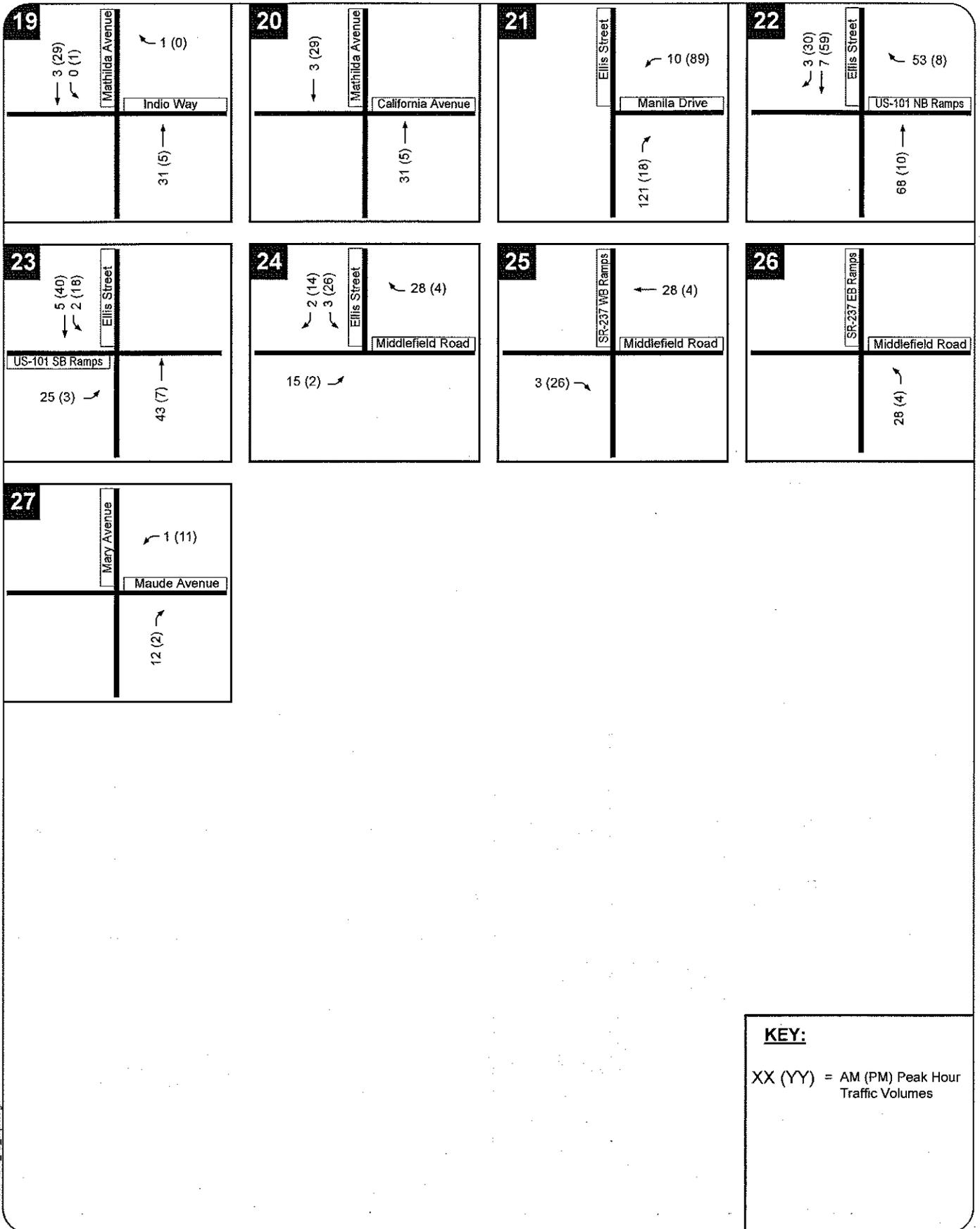
PROJECT TRIP ASSIGNMENT



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FIGURE 9B

PROJECT TRIP ASSIGNMENT

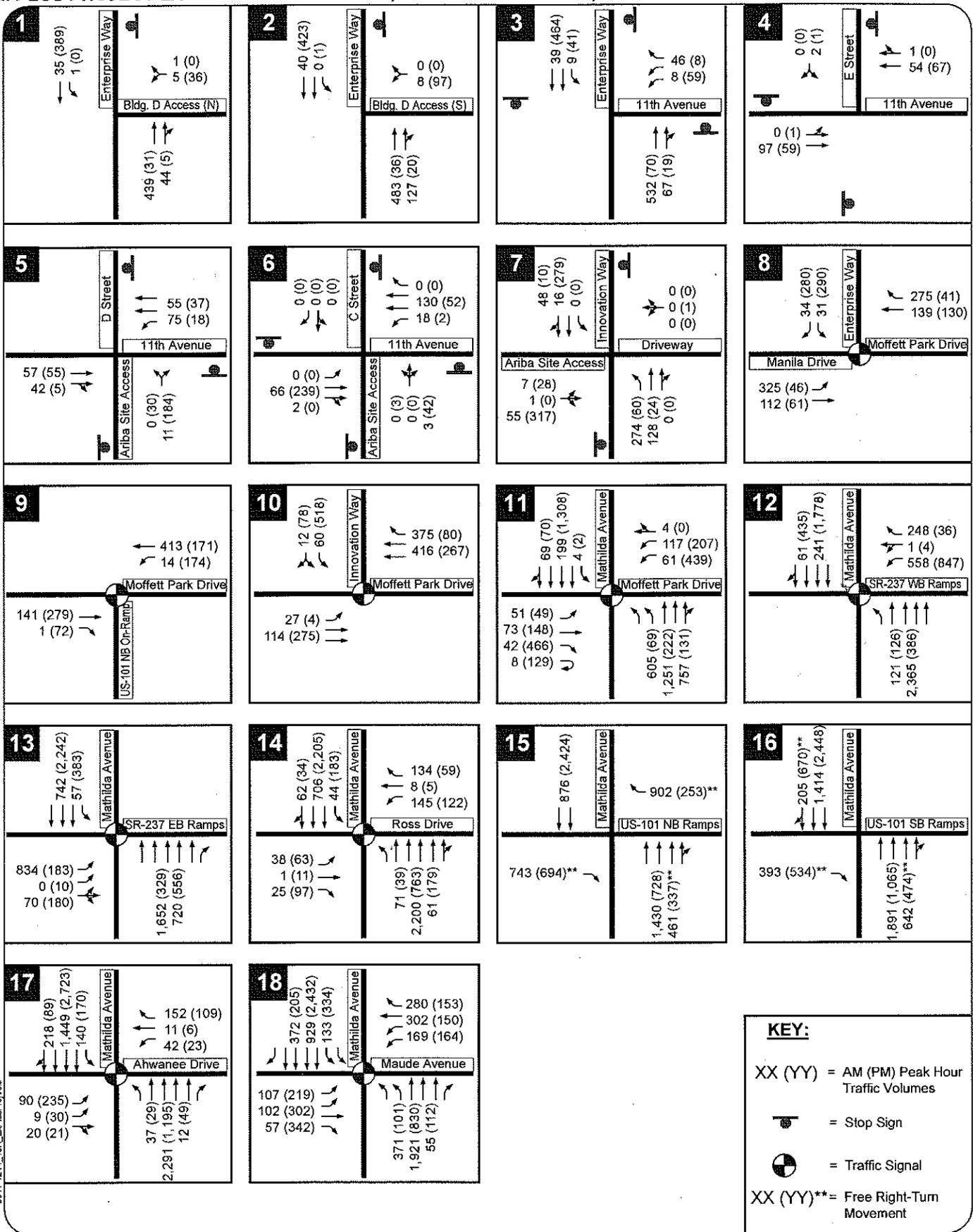


KEY:
XX (YY) = AM (PM) Peak Hour Traffic Volumes

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FIGURE 10A

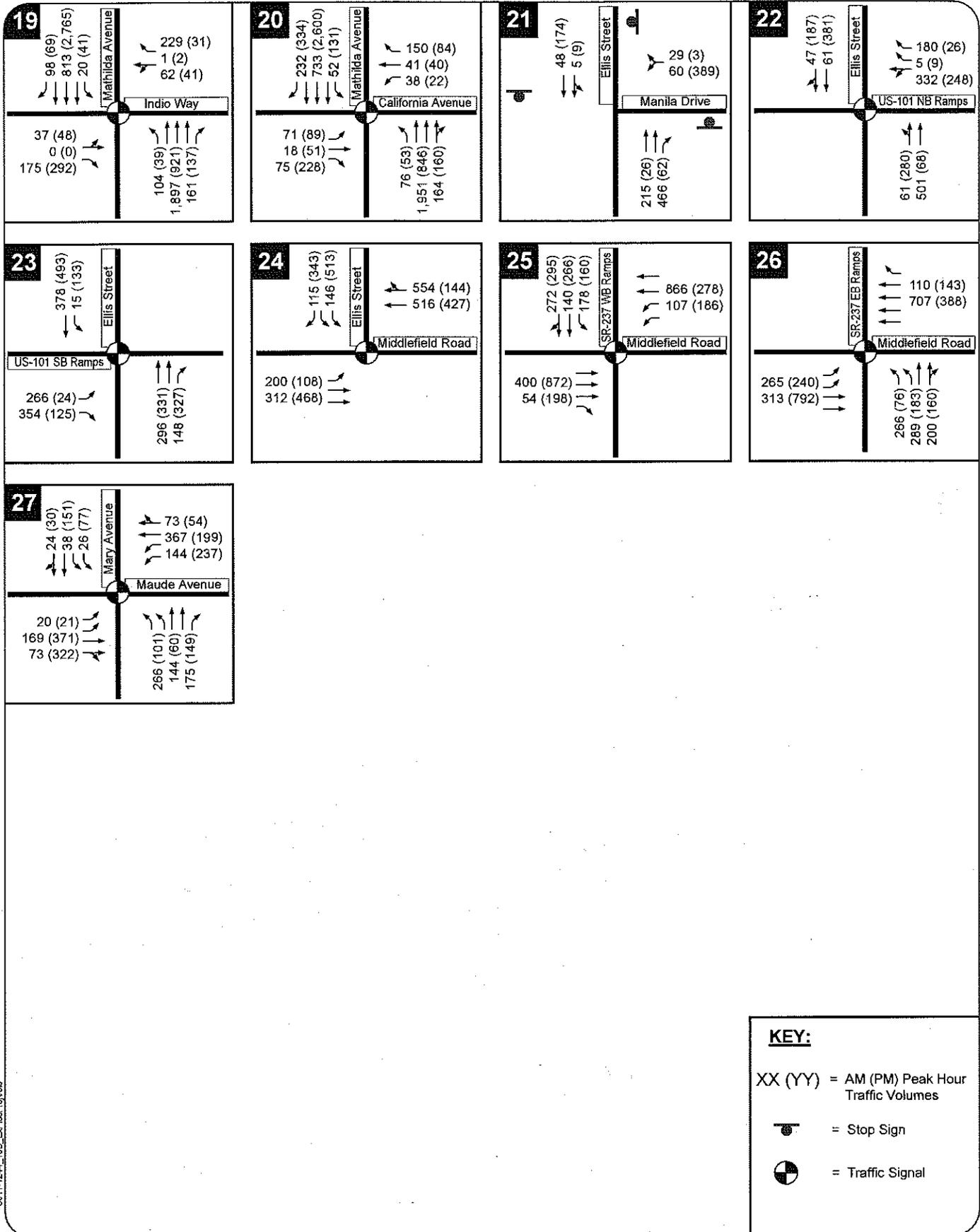
EX. PLUS PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



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FIGURE 10B

EX. PLUS PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



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**TABLE 8
EXISTING AND EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE**

	Intersection	Peak Hour ¹	Inter-section Control	Existing Conditions		Existing plus Project Conditions				
				Delay ²	LOS ³	Delay ²	LOS ³	Δ in Crit. V/C ⁴	Δ in Crit. Delay ⁵	Signal Warrant Met? ⁶
1	Enterprise Way/Building D Site Access (North)	AM PM	Side-Street Stop	10.8 11.1	B B	11.4 11.5	B B	N/A N/A	+0.6 +0.4	No No
2	Enterprise Way/Building D Site Access (South)	AM PM	Side-Street Stop	0.0 10.0	A A	13.0 10.8	B B	N/A N/A	+13.0 +0.8	No No
3	Enterprise Way/11 th Avenue	AM PM	All-Way Stop	8.9 8.8	A A	9.9 9.5	A A	+0.105 +0.066	+1.2 +0.8	No No
4	E Street/11 th Avenue	AM PM	All-Way Stop	7.3 7.3	A A	7.5 7.4	A A	+0.032 +0.019	+0.2 +0.2	No No
5	D Street/Arriba Site Access/11 th Avenue	AM PM	All-Way Stop	7.6 7.5	A A	7.6 7.8	A A	+0.001 +0.014	+0.2 +0.3	No No
6	C Street/Arriba Site Access/11 th Avenue	AM PM	All-Way Stop	7.5 7.9	A A	7.8 8.2	A A	+0.030 +0.033	+0.3 +0.3	No No
7	Innovation Way/Arriba Site Access	AM PM	Side-Street Stop	8.8 11.3	A B	9.7 12.3	A B	N/A N/A	+0.3 +1.0	No No
8	Enterprise Way/Manila Drive/Moffett Park Drive	AM PM	Signal	12.4 10.9	B B+	13.2 11.3	B B+	+0.079 +0.050	+3.3 +0.4	N/A
9	US 101 Northbound On-Ramp/Moffett Park Drive	AM PM	Signal	1.3 7.5	A A	1.3 7.3	A A	+0.008 +0.028	+0.0 +1.0	N/A
10	Innovation Way/Moffett Park Drive	AM PM	Signal	6.1 12.2	A B	6.2 12.1	A B	+0.026 +0.091	+0.3 +2.9	N/A
11	Mathilda Avenue/Moffett Park Drive**	AM PM	Signal	16.4 21.5	B C+	17.6 23.5	B C	+0.025 +0.249	+5.8 +4.4	N/A
12	Mathilda Avenue/SR 237 Westbound Ramps**	AM PM	Signal	18.6 17.2	B- B	18.3 17.3	B- B	+0.020 +0.022	+1.2 +1.1	N/A
13	Mathilda Avenue/SR 237 Eastbound Ramps**	AM PM	Signal	18.5 13.0	B- B	18.9 13.4	B- B	+0.012 +0.022	+0.9 +1.7	N/A
14	Mathilda Avenue/Ross Drive**	AM PM	Signal	15.6 12.0	B B	15.2 12.2	B B	+0.012 +0.020	+0.7 +0.4	N/A
15	Mathilda Avenue/US 101 Northbound Ramps**	AM PM	Uncontrolled	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A
16	Mathilda Avenue/US 101 Southbound Ramps**	AM PM	Uncontrolled	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A
17	Mathilda Avenue/Almanor Avenue/Ahwanee Avenue**	AM PM	Signal	22.1 20.5	C+ C+	22.0 20.4	C+ C+	+0.007 +0.007	+0.5 +0.6	N/A
18	Mathilda Avenue/Maude Avenue*	AM PM	Signal	42.9 28.0	D C	43.2 27.9	D C	+0.010 +0.005	+1.0 +0.3	N/A
19	Mathilda Avenue/Indio Way**	AM	Signal	17.0	B	17.0	B	+0.007	+0.3	N/A

**TABLE 8
EXISTING AND EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE**

Intersection	Peak Hour ¹	Inter-section Control	Existing Conditions		Existing plus Project Conditions				
			Delay ²	LOS ³	Delay ²	LOS ³	Δ in Crit. V/C ⁴	Δ in Crit. Delay ⁵	Signal Warrant Met? ⁶
	PM		14.6	B	14.6	B	+0.006	+0.5	
20 Mathilda Avenue/California Avenue**	AM	Signal	17.8	B	17.7	B	+0.006	+0.5	N/A
	PM		18.2	B-	18.2	B-	+0.006	+0.8	
21 Ellis Street/Manila Drive***	AM	All-Way Stop	8.1	A	8.1	A	+0.001	+0.1	No No
	PM		9.8	A	11.1	B	+0.117	+1.7	
22 Ellis Street/US 101 Northbound Ramps***	AM	Signal	16.4	B	16.3	B	+0.025	+1.2	N/A
	PM		22.2	C+	22.1	C+	+0.028	+1.2	
23 Ellis Street/US 101 Southbound Ramps***	AM	Signal	17.5	B	18.1	B-	-0.006	+1.2	N/A
	PM		12.9	B	13.1	B	+0.013	+0.7	
24 Ellis Street/Middlefield Road***	AM	Signal	14.1	B	14.5	B	+0.029	+0.6	N/A
	PM		21.6	C+	21.7	C+	+0.011	+0.5	
25 SR 237 Westbound Ramps/Middlefield Road***	AM	Signal	18.7	B-	15.7	B	+0.141	+8.6	N/A
	PM		18.8	B-	18.9	B-	+0.000	+0.0	
26 SR 237 Eastbound Ramps/Middlefield Road***	AM	Signal	19.9	B-	19.9	B-	+0.000	+0.0	N/A
	PM		15.9	B	15.9	B	+0.000	+0.0	
27 Mary Avenue/Maude Avenue	AM	Signal	26.5	C	26.6	C	+0.000	+0.0	N/A
	PM		23.6	C	23.7	C	+0.006	+0.3	

Notes:

- 1 AM = morning peak hour, PM = afternoon peak hour.
- 2 Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Signalized intersections include adjusted saturation flow rates to reflect Santa Clara County Conditions per VTA guidelines. Total control delay for the worst movement is presented for side-street stop-controlled intersections
- 3 LOS = Level of Service. LOS calculations conducted using the TRAFFIX level of service analysis software package, which applies the methodology described in the 2000 HCM.
- 4 Change in the critical volume-to-capacity ratio (V/C) between Existing and Project Conditions.
- 5 Change in critical movement delay between Existing and Project Conditions.
- 6 Signal warrant based CA MUTCD Warrant 3, Peak Hour (Urban Area)

* CMP intersection with LOS E threshold.
 ** Regionally significant intersection with LOS E threshold.
 *** City of Mountain View intersection.

Source: Fehr & Peers, June 2011.

Some of the study intersections show a reduction in average delay with the addition of project traffic, which is counter-intuitive. The average delay values in the table are weighted averages. Weighted average delays will be reduced when traffic is added to a movement with a low delay, such as the through movements in the non-

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peak direction on Mathilda Avenue.³ Conversely, relatively small volume increases to movements with high delays can substantially increase the weighted average delay.

INTERSECTION IMPACT CRITERIA

Santa Clara County Valley Transportation Authority (VTA)

The LOS standard for CMP intersections is LOS E. Traffic impacts at CMP intersections would occur when the addition of traffic associated with implementation of a Project causes:

1. Intersection operations to deteriorate from an acceptable level (LOS E or better) under the Existing Conditions to an unacceptable level (LOS F); or
2. Exacerbation of unacceptable operations by increasing the average critical delay by more than 4 seconds and increasing the critical volume-to-capacity (V/C) ratio by 0.01 or more at an intersection operating at LOS F.
3. The V/C ratio increases by 0.01 or more at an intersection with unacceptable operations (LOS F) when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

The Mathilda Avenue/Maude Avenue is the only CMP intersection analyzed for this report.

City of Sunnyvale and City of Mountain View

Both the City of Sunnyvale and Mountain View apply the same intersection impact criteria for intersections, which is based on VTA's criteria.

Signalized Intersections

The LOS standard for City of Sunnyvale and Mountain View intersections is LOS D except for City of Sunnyvale intersections that are designated regionally significant and have a LOS E standard. For the purpose of this report regionally significant facilities include intersections along Mathilda Avenue and freeway ramp junctions for SR 237 and US 101. Traffic impacts at City of Sunnyvale and Mountain View intersections would occur when the addition of traffic associated with implementation of the Project causes:

1. Intersection (except those on designated regionally significant roads) operations to deteriorate from an acceptable level (LOS D or better) under the Existing Conditions to an unacceptable level (LOS E or LOS F); or,
2. Operations for regionally significant designated intersections to deteriorate from an acceptable level (LOS E or better) under the Existing Conditions to an unacceptable level (LOS F); or,
3. Exacerbation of unacceptable operations by increasing the average critical delay by more than 4 seconds and increasing the critical volume-to-capacity (V/C) ratio by 0.01 or more at an intersection operating at LOS E or F (LOS F for regionally significant roads).

³ For example, if you have one movement with 10 vehicles with a delay of 100 seconds and another movement with 400 vehicles and 10 seconds of delay, the weighted average delay is calculated as (100 seconds X 10 vehicles + 10 seconds X 400 vehicles) /410 vehicles = 12.2 seconds per vehicle. Now if you add 100 vehicles to the movement with 10 seconds of delay, the weight average is calculated as (100 seconds X 10 vehicles + 10 seconds X 500 vehicles)/510 vehicles = 11.8 seconds per vehicle. The weighted average delay improves, even though more vehicles are added.

Unsignalized Intersections

Levels of service analysis at unsignalized intersections are generally used to determine the need for modification in type of intersection control (i.e. all-way stop or signalization). As part of this evaluation traffic volumes, delay, and traffic signal warrants are evaluated to determine if the existing intersection control is appropriate.

The Cities of Sunnyvale and Mountain View do not have an officially adopted significance criteria for unsignalized intersections. Based on previous studies in the Cities of Sunnyvale and Mountain View, significant impacts are defined to occur when the addition of project traffic causes the average intersection delay for all-way stop-controlled intersection or the worst movement/approach for side-street stop-controlled intersections to degrade to LOS F and the intersection satisfies any traffic signal warrant from the MUTCD.

EXISTING PLUS PROJECT INTERSECTION IMPACTS AND MITIGATION MEASURES

Measured against the City of Sunnyvale's, the City of Mountain View, and VTA's level of service standards and the resulting significance criteria, the project is not expected to have significant impacts at any of the study intersections under Existing plus Project conditions; therefore, no mitigation is required.

EXISTING PLUS PROJECT FREEWAY SEGMENT LEVELS OF SERVICE

Freeway segments of US 101 and SR 237 were analyzed during the AM and PM peak hours to calculate the amount of project traffic projected to be added to these freeway segments. To be conservative, no project trips were assigned to HOV lanes.

Table 9 presents the estimated number of trips added to the freeway segments under Existing Plus Project Conditions and the estimated densities and service levels.

Freeway Segment	Direction	Peak Hour ¹	Capacity (vphp) ²	Existing Conditions		Existing Plus Project Conditions			
				Density ³	LOS ⁴	Trips ⁵	Density	LOS	% Impact ⁶
US 101, Montague Expressway to Great America Parkway	NB	AM	6,900	40	D	41	40	D	0.6%
		PM		44	D	7	44	D	0.1%
US 101, Great America Parkway to Lawrence Expressway	SB	AM	6,900	24	C	5	24	C	0.1%
		PM		87	F	35	88	F	0.5%
US 101, Lawrence Expwy. to N. Fair Oaks Ave.	NB	AM	6,900	47	E	61	47	E	0.9%
		PM		44	E	9	44	E	0.1%
US 101, N. Fair Oaks Ave. to Mathilda Ave.	SB	AM	6,900	35	D	7	35	D	0.1%
		PM		88	F	57	89	F	0.8%
US 101, Montague Expressway to Great America Parkway	NB	AM	6,900	55	E	71	56	E	1.0%
		PM		34	D	10	34	D	0.1%
US 101, Lawrence Expwy. to N. Fair Oaks Ave.	SB	AM	6,900	22	C	7	22	C	0.1%
		PM		40	D	65	40	D	0.9%
US 101, N. Fair Oaks Ave. to Mathilda Ave.	NB	AM	6,900	66	F	65	67	F	0.9%
		PM		30	D	9	30	D	0.1%
US 101, Montague Expressway to Great America Parkway	SB	AM	6,900	30	D	7	30	D	0.1%
		PM		30	D	61	30	D	0.9%

**TABLE 9
EXISTING PLUS PROJECT FREEWAY SEGMENT LEVELS OF SERVICE**

Freeway Segment	Direction	Peak Hour ¹	Capacity (vphpl) ²	Existing Conditions		Existing Plus Project Conditions			
				Density ³	LOS ⁴	Trips ⁵	Density	LOS	% Impact ⁶
US 101, Mathilda Ave. to SR 237	NB	AM	6,900	59	F	12	59	F	0.2%
		PM		21	C	1	21	C	0.0%
	SB	AM	6,900	25	C	1	25	C	0.0%
		PM		28	D	10	28	D	0.1%
US 101, SR 237 to Moffett Blvd	NB	AM	6,900	77	F	55	78	F	0.8%
		PM		69	F	43	70	F	0.6%
	SB	AM	6,900	36	D	46	36	D	0.7%
		PM		36	D	22	36	D	0.3%
SR 237, Maude Ave. to US 101	EB	AM	4,400	42	D	18	42	D	0.4%
		PM		21	B	3	21	B	0.1%
	WB	AM	4,400	32	D	2	32	D	0.1%
		PM		68	F	17	68	F	0.4%
SR 237, US 101 to Mathilda Ave.	EB	AM	4,400	38	D	40	38	D	0.9%
		PM		51	E	14	51	E	0.3%
	WB	AM	4,400	43	E	43	43	E	1.0%
		PM		39	D	23	39	D	0.5%
SR 237, Mathilda Ave. to N. Fair Oaks Ave.	EB	AM	4,600	44	D	4	44	D	0.1%
		PM		67	F	39	68	F	0.9%
	WB	AM	6,900	96	F	41	97	F	0.6%
		PM		33	D	6	33	D	0.1%
SR 237, N. Fair Oaks Ave. to Lawrence Expwy.	EB	AM	4,600	41	D	4	41	D	0.1%
		PM		102	F	39	103	F	0.9%
	WB	AM	4,600	54	E	41	55	E	0.9%
		PM		35	D	6	35	D	0.1%
SR 237, Lawrence Expressway to Great America Parkway	EB	AM	4,600	36	D	5	36	D	0.1%
		PM		96	F	43	97	F	0.9%
	WB	AM	4,600	33	D	46	33	D	1.0%
		PM		41	D	7	41	D	0.2%

Notes:

Bold font indicates unacceptable operations based on VTA's LOS E Standard.

1 AM = morning peak hour, PM = afternoon peak hour.

2 vphpl = vehicles per hour per lane

3 Measured in passenger cars per mile per lane.

4 LOS = level of service.

5 Project trips added to individual freeway segments

6 Percent impact on mixed flow lanes determined by dividing the number of project trips by the freeway segment's capacity.

Source: 2010 Monitoring and Conformance Report, VTA, May 2011.

FREEWAY IMPACT CRITERIA

The LOS standard for CMP freeway segments is LOS E. Traffic impacts on CMP freeway segments occur when the addition of project traffic causes:

1. Freeway segment operations to deteriorate from an acceptable level (LOS E or better) under the Existing Conditions to an unacceptable level (LOS F); or
2. An increase in traffic of more than one percent of the capacity of the segments that operate at LOS F under Existing Conditions.

EXISTING FREEWAY IMPACTS AND MITIGATION MEASURES

The proposed project would not add trips greater than one percent of the freeway segment capacity to any freeway segments already operating at LOS F; therefore, the project has a **less-than-significant** impact at the identified study freeway segments and no mitigation measures are required.

4. BACKGROUND CONDITIONS

This chapter presents the results of the level of service calculations under Background Conditions with and without the project. Background No Project Conditions are defined as conditions prior to completion of the proposed development in 2013, which is the projected completion date for the proposed project. Traffic volumes for Background No Project Conditions comprise existing volumes multiplied by a growth factor per the City of Sunnyvale's most recent traffic model update, plus traffic generated by approved "approved but not yet built" and "not occupied" developments in the area. Approved and not occupied projects account for local growth, while the growth factor accounts for regional growth. Background plus Project Conditions are defined as Background No Project Conditions plus traffic generated by the proposed project.

BACKGROUND NO PROJECT TRAFFIC VOLUMES

Background Traffic Growth

Growth factors for local roads, collectors, and arterial roadways were developed based on the City of Sunnyvale's travel demand forecasting model. The City of Sunnyvale uses the rates in **Table 10** to estimate annual regional traffic growth based on the roadway classification.

TABLE 10 ANNUAL GROWTH RATES		
Roadway Classification	AM Peak-Hour	PM Peak-Hour
Arterial	2.00%	1.75%
Collector	2.28%	2.34%
Local	0.50%	0.50%
Source: City of Sunnyvale, 2011.		

Using year 2011 as the base year for existing conditions, two-year growth factors (to year 2013) were applied to all movements at the 27 study intersections.

Approved and Not Occupied Projects

Vehicle trips from "approved but not yet built" and "not occupied" developments projects in the study area were added. Staff from the City of Sunnyvale provided a list of "approved but not yet built" and "not occupied" developments projects. Projects in the Cities of Mountain View, Santa Clara, and Cupertino were also considered. Trip generation estimates from approved and not occupied projects that would add traffic to the study intersections were obtained from their respective traffic reports or estimated based on trip generation rates published in the Institute of Transportation Engineers *Trip Generation* (8th Edition). The trips for each of the background projects were then assigned to the roadway network based on the relative locations of complementary land uses, as well as existing and estimated future travel patterns.

Appendix C contains a list of approved and not occupied projects from each City and their trip generation estimates. Though almost 1,900,000 s.f. of the existing Moffett Towers campus have already been constructed, less than 10 percent is currently occupied. Trips from the 1,700,000 s.f. of unoccupied Moffett Towers campus office uses were added to the roadway network based on the information presented in the 2006 Moffett Towers TIA. Additionally, more than 205,000 s.f. of Building D have already been approved. Trips generated by this portion of the project were assigned as part of the background growth.

Other major background projects included in the list are: redevelopment of Town Center Mall (284 dwelling units, 16 screen theater, 275,000 s.f. of office, 1 million s.f. of retail); additional office space at the Lockheed

Martin site; buildout of Network Appliances (1 million s.f. of R&D); completion of R&D buildings at 111 Java Drive (387,000 s.f.); and, 120,000 s.f. of medical office for Palo Alto Medical Foundation.

The trips for each of the background projects were added to the existing volumes, which were multiplied by the annual growth rates discussed above to represent Background Conditions, as shown on **Figure 11**.

BACKGROUND IMPROVEMENTS

Given that the projected completion year of the project is 2013, no approved and funded transportation network improvements were assumed to be constructed prior to project completion. Therefore, the existing roadway network was used for the background analysis.

BACKGROUND PLUS PROJECT TRAFFIC VOLUMES

Trips from the 125,000-s.f. expansion of Building D at Moffett Park and the 200,000 s.f. Ariba Campus expansion (**Table 7**) were added to the Background traffic projections to develop traffic volumes for Background plus Project Conditions. The resulting volumes are shown on **Figure 12**.

BACKGROUND INTERSECTION LEVELS OF SERVICE

Table 11 presents the level of service calculations for the study intersections under Background No Project and Background plus Project Conditions. **Appendix B** contains the corresponding calculation sheets.

Signalized Intersections

Under Background plus Project Conditions the following four signalized intersections are projected to operate at unacceptable service levels during the identified peak hours.

- Int. 8. Enterprise Way/Manila Drive-Moffett Park Drive: the addition of project traffic exacerbates unacceptable LOS E+ operation and degrades operation to LOS F during the AM peak hour
- Int. 11. Mathilda Avenue/Moffett Park Drive: the addition of project traffic exacerbates unacceptable LOS F operations during the AM and PM peak hours
- Int. 12. Mathilda Avenue/SR 237 Westbound Ramps: the addition of project traffic exacerbates unacceptable LOS F operations during the PM peak hour
- Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps: the addition of project traffic degrades intersection operation from acceptable LOS E- to unacceptable LOS F during the PM peak hour

Unsignalized Intersections

Under Background plus Project Conditions, three unsignalized intersections are projected to operate at unacceptable service level during the identified peak hours.

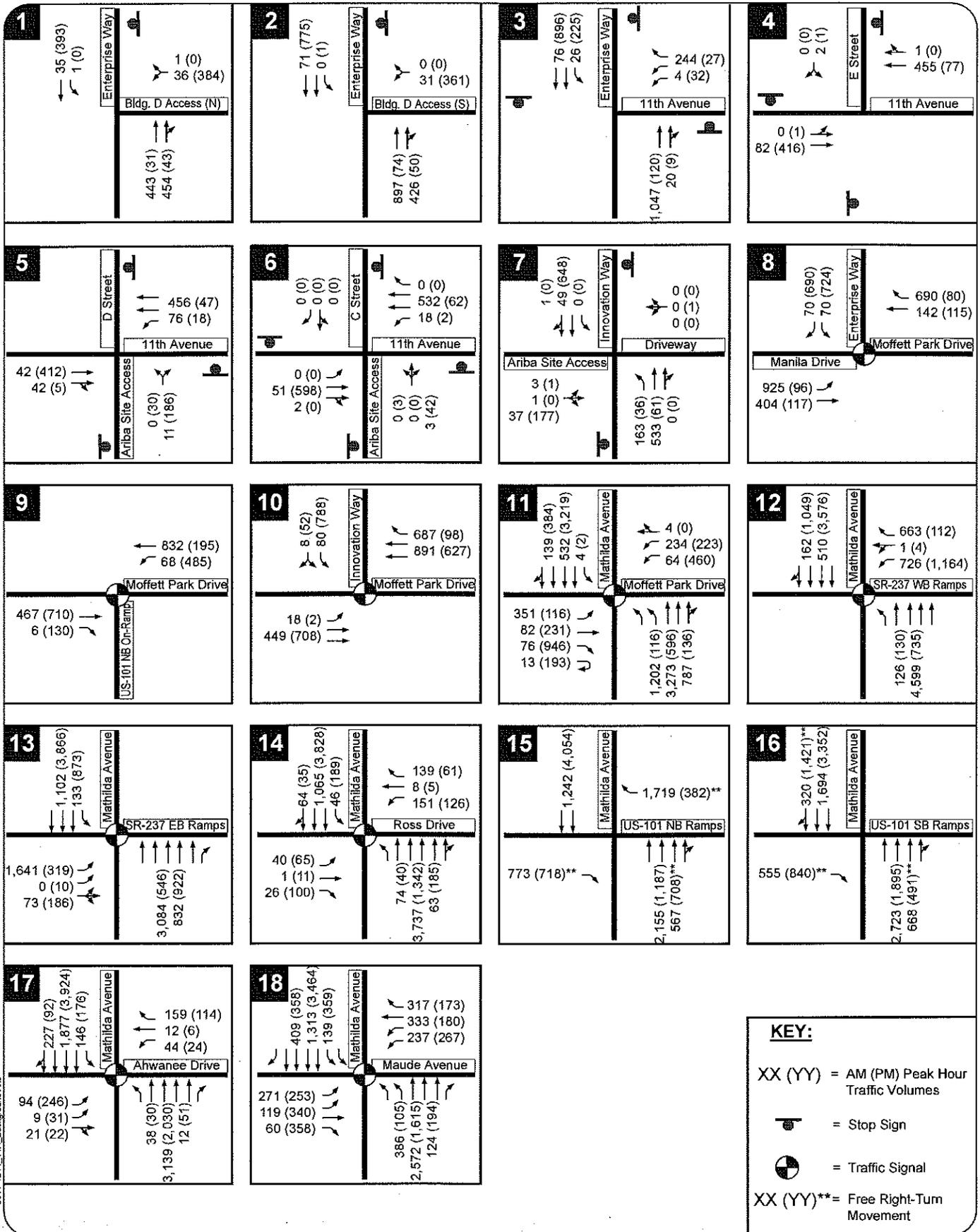
- Int. 2. Enterprise Way/Building D Site Access (South): during the PM peak hour the addition of project traffic degrades intersection operation from acceptable LOS D to unacceptable LOS E
- Int. 3. Enterprise Way/11th Avenue: during the AM peak hour the addition of project traffic degrades intersection operation from acceptable LOS C to unacceptable LOS E
- Int. 21. Ellis Street/Manila Drive: during the PM peak hour the addition of project traffic exacerbates unacceptable LOS F operations

The remaining unsignalized intersections are projected to operate at acceptable LOS. The Enterprise Way/Building D Site Access (South), Enterprise Way/11th Avenue, and Ellis Street/Manila Drive intersections satisfy the peak-hour signal warrant during at least one peak hour. **Appendix E** contains the peak-hour signal warrants.

Again, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a traffic signal. The responsible state or local agency should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization. On private roads (Enterprise Way), the project sponsor is responsible for the monitoring of actual traffic conditions.

FIGURE 11A

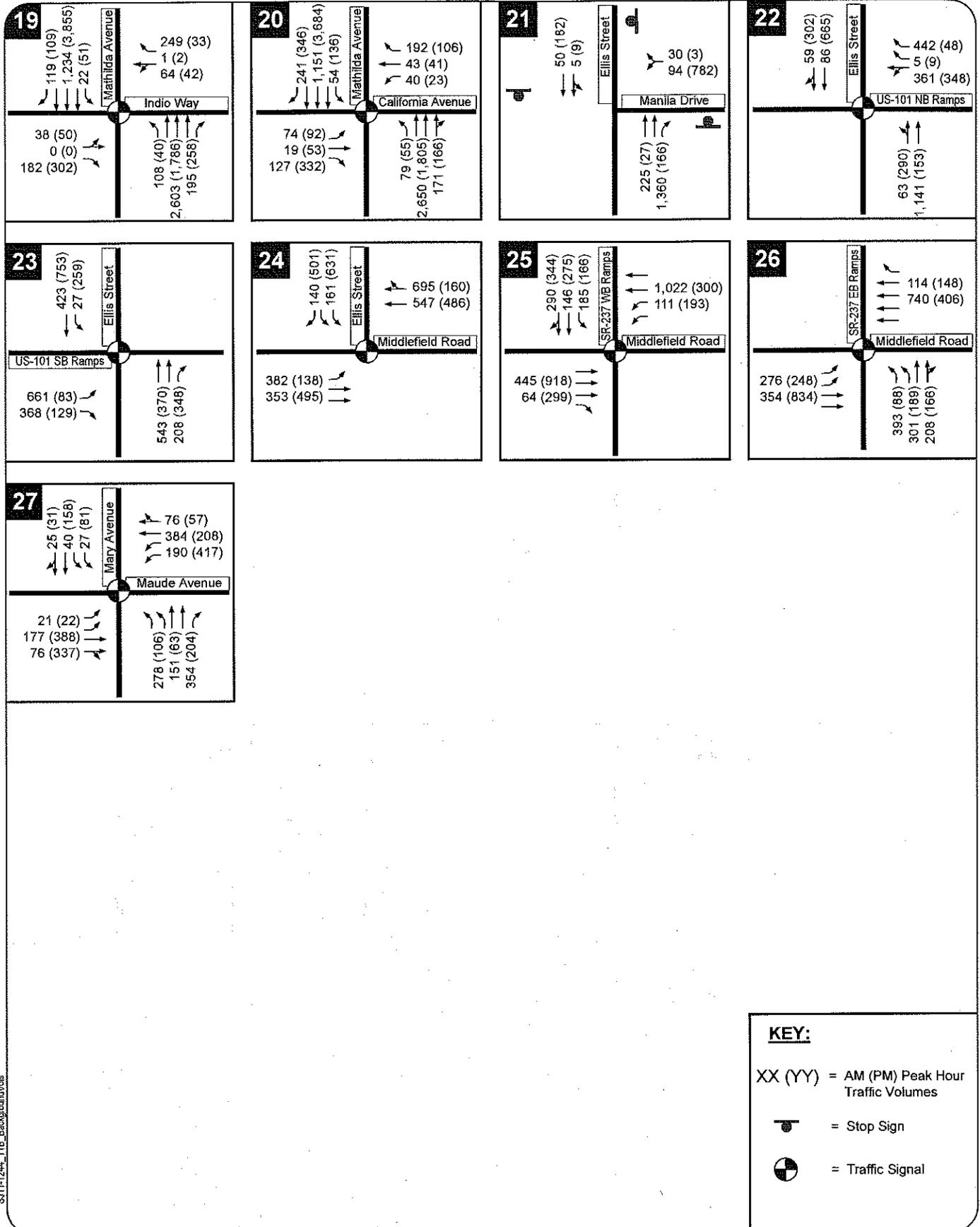
BG NO PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



S11-1244-11A_Background/ols

FIGURE 11B

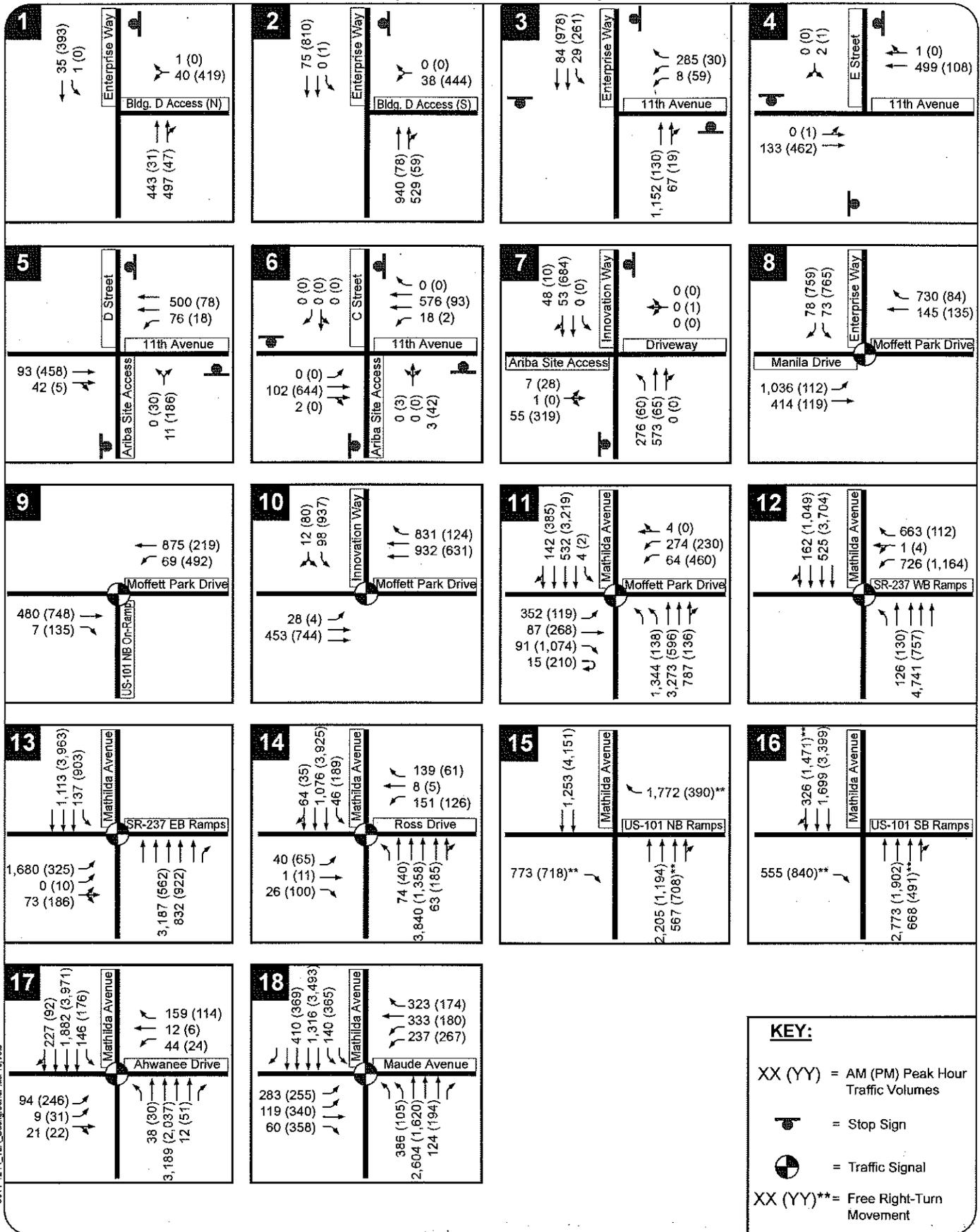
BG NO PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



S11-1244_11B_Background.xls

FIGURE 12A

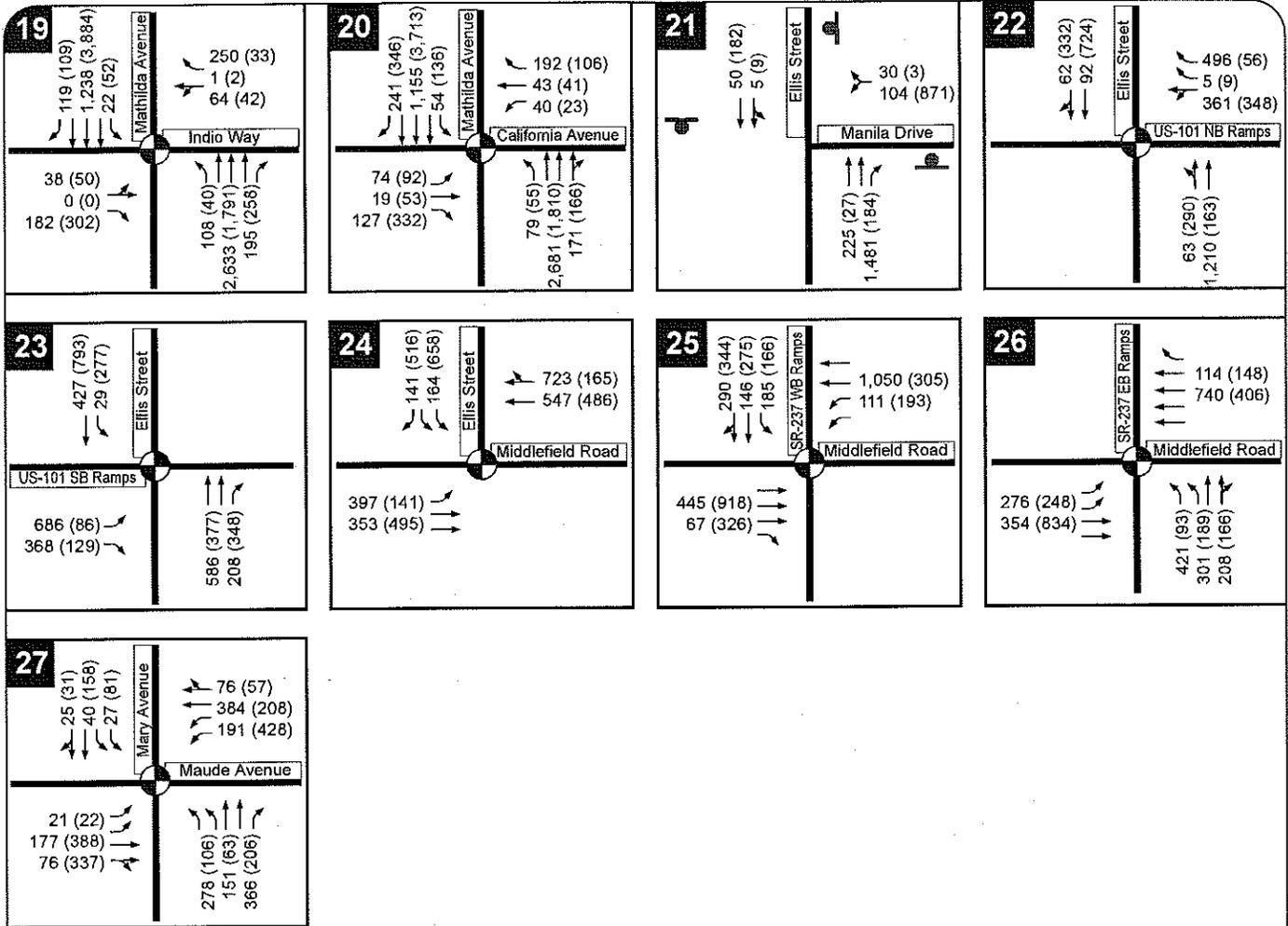
BG PLUS PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



S:11-1244_12A_BackgroundPlusProj/ols

FIGURE 12B

BG PLUS PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR TRAFFIC VOLUMES



KEY:

XX (YY) = AM (PM) Peak Hour Traffic Volumes

 = Stop Sign

 = Traffic Signal

S:\11-1244_12B_BackgroundPlus\Proj\616

TABLE 11
BACKGROUND INTERSECTION LEVELS OF SERVICE

	Intersection	Peak Hour ¹	Inter-section Control	Background Conditions		Background plus Project Conditions				
				Delay ²	LOS ³	Delay ²	LOS ³	Δ in Crit. V/C ⁴	Δ in Crit. Delay ⁵	Signal Warrant Met? ⁶
1	Enterprise Way/Building D Site Access (North)	AM	Side-Street Stop	14.7	B	15.1	B	N/A	+0.4	No
		PM		23.0	C	26.5	D	N/A	+3.5	No
2	Enterprise Way/Building D Site Access (South)	AM	Side-Street Stop	26.8	D	32.2	D	N/A	+5.4	No
		PM		27.0	D	48.3	E	N/A	+21.3	Yes
3	Enterprise Way/11 th Avenue	AM	All-Way Stop	23.0	C	39.1	E	+0.145	+21.0	Yes
		PM		14.0	B	16.6	C	+0.081	+4.2	No
4	E Street/11 th Avenue	AM	All-Way Stop	8.9	A	9.2	A	+0.031	+0.3	No
		PM		8.7	A	8.9	A	+0.031	+0.3	No
5	D Street/Ariba Site Access/11 th Avenue	AM	All-Way Stop	8.8	A	9.1	A	+0.031	+0.4	No
		PM		9.5	A	9.8	A	+0.029	+0.5	No
6	C Street/Ariba Site Access/11 th Avenue	AM	All-Way Stop	9.5	A	10.0	B	+0.039	+0.6	No
		PM		10.3	B	10.8	B	+0.038	+0.6	No
7	Innovation Way/Ariba Site Access	AM	Side-Street Stop	9.3	A	10.7	B	N/A	+1.4	No
		PM		16.4	C	20.2	C	N/A	+7.9	No
8	Enterprise Way/Manila Drive/Moffett Park Drive	AM	Signal	56.8	E+	86.0	F	+0.101	+50.4	N/A
		PM		13.3	B	14.9	B	+0.051	+2.1	N/A
9	US 101 Northbound On-Ramp/Moffett Park Drive	AM	Signal	3.4	A	3.4	A	+0.025	+0.2	N/A
		PM		13.5	B	13.9	B	+0.027	+1.4	N/A
10	Innovation Way/Moffett Park Drive	AM	Signal	6.2	A	6.8	A	+0.260	+1.2	N/A
		PM		14.1	B	14.9	B	+0.072	+2.7	N/A
11	Mathilda Avenue/Moffett Park Drive**	AM	Signal	119.0	F	126.8	F	+0.026	+12.9	N/A
		PM		219.3	F	259.7	F	+0.102	+63.0	N/A
12	Mathilda Avenue/SR 237 Westbound Ramps**	AM	Signal	57.2	E+	63.4	E	+0.020	+7.8	N/A
		PM		123.5	F	133.1	F	+0.022	+11.3	N/A
13	Mathilda Avenue/SR 237 Eastbound Ramps**	AM	Signal	33.9	C-	35.1	D+	+0.011	+3.5	N/A
		PM		76.8	E-	81.6	F	+0.022	+10.9	N/A
14	Mathilda Avenue/Ross Drive**	AM	Signal	12.2	B	12.2	B	+0.012	+0.8	N/A
		PM		60.0	E	68.4	E	+0.020	+12.5	N/A
15	Mathilda Avenue/US 101 Northbound Ramps**	AM	Uncontrolled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		PM		N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	Mathilda Avenue/US 101 Southbound Ramps**	AM	Uncontrolled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		PM		N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	Mathilda Avenue/Almanor Avenue/Ahwanee Avenue**	AM	Signal	20.5	C+	20.5	C+	+0.007	+0.8	N/A
		PM		20.7	C+	20.8	C+	+0.007	+1.4	N/A
18	Mathilda Avenue/Maude Avenue*	AM	Signal	48.7	D	49.1	D	+0.010	+1.6	N/A
		PM		30.2	C	30.3	C	+0.005	+0.7	N/A
19	Mathilda Avenue/Indio Way**	AM	Signal	16.0	B	16.0	B	+0.006	+0.4	N/A

TABLE 11
BACKGROUND INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour ¹	Inter-section Control	Background Conditions		Background plus Project Conditions					
			Delay ²	LOS ³	Delay ²	LOS ³	Δ in Crit. V/C ⁴	Δ in Crit. Delay ⁵	Signal Warrant Met? ⁶	
	PM		17.3	B	17.6	B	+0.005	+1.1		
20	Mathilda Avenue/California Avenue**	AM PM	Signal	18.2 33.5	B- C-	18.2 34.5	B- C-	+0.006 +0.006	+1.1 +1.8	N/A
21	Ellis Street/Manila Drive***	AM PM	All-Way Stop	8.3 51.3	A F	8.4 83.3	A F	+0.014 +0.117	+0.1 +38.8	Yes Yes
22	Ellis Street/US 101 Northbound Ramps***	AM PM	Signal	18.6 24.5	B- C	19.1 24.8	B- B	+0.025 +0.027	+2.0 +1.9	N/A
23	Ellis Street/US 101 Southbound Ramps***	AM PM	Signal	20.5 13.6	C+ B	20.9 13.7	C+ B	+0.031 +0.026	+1.1 +1.1	N/A
24	Ellis Street/Middlefield Road***	AM PM	Signal	20.7 23.3	C+ C	22.0 23.5	C+ C	+0.029 +0.013	+3.5 +0.5	N/A
25	SR 237 Westbound Ramps/Middlefield Road***	AM PM	Signal	15.6 19.2	B B-	15.5 18.9	B B-	+0.008 +0.017	+0.4 +1.4	N/A
26	SR 237 Eastbound Ramps/Middlefield Road***	AM PM	Signal	19.8 15.9	B- B	19.9 16.0	B- B	+0.000 +0.000	+0.2 +0.0	N/A
27	Mary Avenue/Maude Avenue	AM PM	Signal	27.5 26.1	C C	27.5 26.2	C C	+0.008 +0.005	+0.5 +0.2	N/A

Notes:

- AM = morning peak hour, PM = afternoon peak hour.
- Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections using methodology described in the 2000 HCM, with adjusted saturation flow rates to reflect Santa Clara County Conditions.
- LOS = level of service. LOS calculations conducted using the TRAFFIX level of service analysis software package.
- Change in the critical volume-to-capacity ratio (V/C) between Background and Background plus Project Conditions.
- Change in critical movement delay between Background and Background plus Project Conditions.
- Signal warrant based CA MUTCD Warrant 3, Peak Hour (Urban Area)

* CMP intersection with LOS E threshold.
 ** Regionally significant intersection with LOS E threshold.
 *** City of Mountain View intersection.

Source: Fehr and Peers, 2011.

Some of the study intersections show a reduction in average delay with the addition of project traffic, which is counter-intuitive. The average delay values in the table are weighted averages. Weighted average delays will be reduced when traffic is added to a movement with a low delay, such as the through movements in the non-peak direction on Mathilda Avenue.⁴ Conversely, relatively small volume increases to movements with high delays can substantially increase the weighted average delay.

⁴ For example, if you have one movement with 10 vehicles with a delay of 100 seconds and another movement with 400 vehicles and 10 seconds of delay, the weighted average delay is calculated as (100 seconds X 10 vehicles + 10 seconds X 400 vehicles) /410 vehicles = 12.3 seconds per vehicle. Now if you add 100 vehicles to the movement with 10 seconds of delay, the weighted average is calculated as:

Qualitative Evaluation of Synchro/SimTraffic Analysis for Mathilda Avenue Corridor

The MPSP EIR presents future year analysis for the Mathilda Avenue corridor under 2020 General Plan Conditions. Though that scenario presents a further horizon year than the 2013 analysis presented in this report, the information from that analysis was used to qualitatively assess operations in the Mathilda Avenue corridor. Based on the Synchro analysis, the individual intersections in the study corridor would operate at LOS D or better, with the exception of the Mathilda Avenue/Moffett Park Drive intersection. This is similar to the TRAFFIX service levels presented in **Table 11**, though the analysis for this report also indicates that the Mathilda Avenue/SR 237 Westbound Ramps would operate unacceptably. Based on the MPSP corridor analysis, the overall signal system corridor was estimated to operate at LOS D and C during the AM and PM peak hour, respectively. It should be noted that the 2020 General Plan analysis presented in the MPSP includes major roadway improvements (such as the Mary Avenue extension) that were not included in this report.

The 2006 Moffett Towers TIA also evaluated the Mathilda Avenue corridor using Synchro analysis software. The Project scenario presented in the 2006 report is comparable to the Background plus Project scenario used for this report. According to the Synchro LOS calculations that were performed as part of the 2006 Moffett Towers TIA, the following intersections are projected to operate at a lower (worse) LOS rating than the calculated TRAFFIX LOS under Background No Project Conditions:

- Mathilda Avenue/Maude Avenue (LOS F vs. LOS C, PM peak)
- Mathilda Avenue/Indio Way (LOS E vs. LOS B, PM peak)

The different level of service rating can be attributed to the input parameters for the two software programs. The Synchro software program utilizes the actual signal timing parameters, whereas the TRAFFIX software program calculates and optimizes the signal timings based on the volumes and lane geometry.

BACKGROUND INTERSECTION IMPACTS AND MITIGATION MEASURES

This section of the report evaluates the intersection LOS results presented in **Table 11** against the City of Sunnyvale's, City of Mountain View's, and VTA's criteria for significant impacts and presents mitigation measures for identified impacts.

Int. 2. Enterprise Way/Building D Site Access (South)

Under Background plus Project Conditions the Enterprise Way/Building D Site Access (South) intersection is projected to operate at LOS E and meet the MUTCD peak hour volume warrant during the PM peak hour. Because Enterprise Way is a private roadway, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for signalization. The project's impact will be **less-than-significant** based on City standards with the installation of a traffic signal.

Alternatively, the project's impact at the Enterprise Way/Building D Site Access (South) can be mitigated to **less-than-significant** levels with the provision of a fifty-foot refuge lane for the westbound left-turn movements. This mitigation would require some modifications to the existing raised median. With this alternative mitigation the intersection would operate at LOS C and D during the AM and PM peak hours, respectively.

Additionally, although VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips, the Moffett Towers TDM program is required to reduce peak hour trips by 30 percent, based on the guidelines

(100 seconds X 10 vehicles + 10 seconds X 500 vehicles)/510 vehicles = 11.8 seconds per vehicle. The weighted average delay improves, even though more vehicles are added.

from the MPSP. With a 30 percent reduction in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be **less-than-significant**; however, the peak hour volume warrant would still be met.

Int. 3. Enterprise Way/11th Avenue

Under Background plus Project Conditions the Enterprise Way/11th Avenue intersection is projected to operate at LOS E and meet the MUTCD peak hour volume during the AM peak hour. Because Enterprise Way is a private roadway, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for signalization. The project's impact will be **less-than-significant** based on City standards with the installation of a traffic signal (the traffic signal is already installed at this location and will simply need to be put in full operation).

Additionally, although VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips, the Ariba Campus TDM program is required to reduce peak hour trips by 15 percent. With a 15 percent reduction in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be **less-than-significant**; however, the peak hour volume warrant would still be met.

Int. 8. Enterprise Way/Manila Drive-Moffett Park Drive

At the Enterprise Way/Manila Drive-Moffett Park Drive intersection, the addition of project traffic is estimated to deteriorate operations from unacceptable LOS E+ to LOS F during the AM peak hour. Therefore the project is considered to have a **significant impact**.

The 2006 Moffett Towers TIA also identified a significant impact at this intersection. The 2006 report recommended that the project contribute a fair share of funds to the proposed extension of Mary Avenue to 11th Avenue over US 101 and SR 237. As estimated in the *Mary Avenue Overcrossing Final Traffic Operations Report*, this improvement would decrease volume at the Enterprise Way/Manila Drive-Moffett Park Drive intersection by nearly 25 percent; such a decrease in traffic volume would improve operations at the intersection to LOS C during the AM peak hour. Traffic would shift onto the new Mary Avenue overcrossing, affecting Mary Avenue north of Maude Avenue. The Mary Avenue Extension project is programmed in the VTA's *Valley Transportation Plan 2035* list of constrained projects and is included in the City's TIF program (discussed in Existing Conditions chapter). Thus, construction of the Mary Avenue extension would mitigate the project impact to a **less-than-significant** level and payment of the City's TIF would constitute the project's fair share contribution.

As an alternative to the Mary Avenue Overcrossing, the eastbound through lane on Manila Drive could be converted to a shared through/left-turn lane, thus enabling two lanes of traffic to turn left onto Enterprise Way. This improvement would also require the signal phasing on Manila Drive-Moffett Park Drive to be converted from protected left-turn phasing to split phasing to accommodate the shared through/left-turn lane. With this improvement the intersection is projected to operate at LOS C- during the AM peak hour and LOS B- during the PM peak hour and the impact would become **less-than-significant**.

Int. 11. Mathilda Avenue/Moffett Park Drive

The intersection of Mathilda Avenue/Moffett Park Drive is projected to operate deficiently under Background No Project Conditions. Under Background plus Project conditions, unacceptable AM and PM peak hour operations would be exacerbated with the addition of project traffic. Since the critical delay increases by more than four seconds and the critical V/C ratio increases by more than 0.01 between the Background No Project and Background plus Project Scenarios, the project is considered to have a **significant impact** at the Mathilda Avenue/Moffett Park Drive intersection based on the City's impact criteria.

As estimated in the *Mary Avenue Overcrossing Final Traffic Operations Report*, the Mary Avenue overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the

AM peak hour and 23 percent in the PM peak hour. Construction of the Mary Avenue overcrossing, along with reconfiguration of the SR 237/Mathilda Avenue ramp intersections, would reduce the impact to a **less-than-significant level**. Payment of the City's TIF would constitute the project's fair share contribution. These improvements consist of:

- Re-aligning Moffett Park, east of Mathilda Avenue, to connect to 5th Avenue via Bordeaux Avenue;
- Shifting the SR 237 Westbound Off-ramp 150 feet to the north to align with Moffett Park/Mathilda Avenue;
- Removal of SR 237 Westbound On-ramp; and,
- Construction of a direct southbound right-turn on-ramp from Mathilda Avenue to US 101 north

These improvements are programmed in both the City's TIF and the VTA's *VTP 2035* list of constrained projects.

Int. 12. Mathilda Avenue/SR 237 Westbound Ramps

The addition of project traffic will exacerbate unacceptable LOS F operations at the intersection of Mathilda Avenue/SR 237 Westbound Ramps in the PM peak hour under Background plus Project Conditions. The critical delay is projected to increase by more than four seconds and the critical V/C ratio is projected to increase by more than 0.01 between the Background No Project and Background plus Project Scenarios; therefore the project is considered to have a **significant** impact based on the City's impact criteria.

The identified improvements for the Mathilda Avenue/Moffett Park Drive intersection would also mitigate the impacts identified for the Mathilda Avenue/SR 237 Westbound Ramp intersection, since they include the elimination of this intersection. Payment of the City's TIF would constitute the project's fair share contribution.

Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps

The addition of project traffic degrade operations from acceptable LOS E- to unacceptable LOS F during the PM peak hour at the intersection of Mathilda Avenue/SR 237 Eastbound Ramps in the PM peak hour under Background plus Project Conditions; therefore the project is considered to have a **significant** impact based on the City's impact criteria. The cycle length at this signal would likely be adjusted with the Mathilda Avenue/SR 237 Westbound Ramps project mentioned above; if the cycle length is changed from 65 seconds to between 70 and 120 seconds, the intersection will operate at LOS E and the impact will be reduced to a **less-than-significant** level. Additionally, the Mary Avenue overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the AM peak hour and 23 percent in the PM peak hour; the intersection would operate acceptably with these volume reductions. Traffic would shift onto the new Mary Avenue overcrossing, affecting Mary Avenue north of Maude Avenue. Payment of the City's TIF would constitute the project's fair share contribution.

Int. 21. Ellis Street/Manila Drive

Under Background plus Project Conditions, the addition of project traffic is projected to exacerbate unacceptable PM peak hour operations and increase the critical delay by more than four seconds and the critical V/C ratio by more than 0.01; thus based on the City of Mountain View's threshold for significant impacts the project is considered to have a **significant** impact.

The addition of a westbound left-turn lane would reduce the PM impact to a **less-than-significant** level. With this improvement the intersection is projected to operate at LOS A during the AM peak hour and LOS C during the PM peak hour. Of the total growth at the intersection from the existing condition, roughly 13% is generated by the Project in the AM peak hour and 15% is generated by the Project in the PM peak hour.

BACKGROUND PLUS PROJECT FREEWAY SEGMENT LEVELS OF SERVICE

Freeway segments of US 101 and SR 237 were analyzed during the AM and PM peak hours to calculate the amount of project traffic projected to be added to these freeway segments. Capacities of 2,300 vehicles per hour per lane (vphpl) for freeway segments with three or more lanes and capacities of 2,200 vphpl for freeway segments with two lanes were used in the freeway analysis. To be conservative, no project trips were assigned to HOV lanes.

As discussed under Existing Conditions, VTA requires analysis of freeway segments when the proposed development project is expected to add traffic equal to at least one percent of a freeway segment's capacity. Since the number of trips added under Existing plus Project Conditions is the same as under Background plus Project Conditions, the results in **Table 9** are also applicable to this scenario. Therefore, the addition of project trips under Background plus Project Conditions will not degrade operations from acceptable to unacceptable service levels as shown in **Table 9**.

BACKGROUND PLUS PROJECT FREEWAY IMPACTS

The proposed project would not add trips greater than one percent of the freeway segment capacity to any freeway segments already operating at LOS F; therefore, the project has a **less-than-significant** impact at the identified study freeway segments and no mitigation measures are required.

5. CUMULATIVE CONDITIONS

This chapter presents the results of the level of service calculations under Cumulative Conditions with and without the project. Traffic volumes for Cumulative No Project Conditions comprise existing volumes multiplied by a growth factor per the City of Sunnyvale's most recent traffic model update, plus traffic generated by all foreseen development projects that would affect the transportation system in the study area, including "approved but not yet built" and "not occupied," as well as pending development projects. Approved, not occupied, and pending projects account for local growth, while the growth factor accounts for regional growth. Cumulative plus Project Conditions are defined as Cumulative No Project Conditions plus traffic generated by the proposed project.

CUMULATIVE NO PROJECT TRAFFIC VOLUMES

Cumulative Traffic Growth

Growth factors for local roads, collectors, and arterial roadways that were developed based on the City of Sunnyvale's travel demand forecasting model as summarized in **Table 10** in **Chapter 4** under Background Conditions were also used to estimate regional growth for Cumulative Conditions. The growth rates were applied to existing year 2011 volumes for a five-year time horizon to estimate regional traffic growth to the year 2016.

Approved, Not Occupied and Pending Projects

Vehicle trips from "approved but not yet built" and "not occupied" developments projects and from pending development projects in the study area were added. Projects in the Cities of Sunnyvale, Mountain View, Santa Clara, and Cupertino were included. Trip generation estimates were obtained from their respective traffic reports or estimated based on trip generation rates published in the Institute of Transportation Engineers *Trip Generation* (8th Edition). The trips for each of the projects were then assigned to the roadway network based on the relative locations of complementary land uses, as well as, existing and estimated future travel patterns. **Appendix C** contains a list of approved and not occupied projects from each City and their trip generation estimates.

The trips for each of the approved, not occupied, and pending development projects were added to the existing volumes, which were multiplied by the annual growth rates discussed above to represent Cumulative No Project Conditions, as shown on **Figure 13**.

CUMULATIVE IMPROVEMENTS

There are no approved and funded transportation network improvements that were assumed to be constructed prior to cumulative horizon year of 2016. Therefore, the existing roadway network was used for the cumulative analysis.

CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

Trips from the 125,000-s.f. expansion of Building D at Moffett Park and the 200,000 s.f. Ariba Campus expansion (**Figure 9**) were added to the Cumulative No Project volumes on **Figure 13**. The results are shown on **Figure 14**.

CUMULATIVE INTERSECTION LEVELS OF SERVICE

Table 12 presents the level of service calculations for the study intersections under Cumulative No Project and Cumulative plus Project Conditions. **Appendix B** contains the corresponding calculation sheets.

Signalized Intersections

Under Cumulative plus Project Conditions the following four signalized intersections are projected to operate at unacceptable service levels during the identified peak hours.

- Int. 8. Enterprise Way/Manila Drive-Moffett Park Drive: the addition of project traffic exacerbates unacceptable LOS E operation and degrades operation to LOS F during the AM peak hour
- Int. 11. Mathilda Avenue/Moffett Park Drive: the addition of project traffic exacerbates unacceptable LOS F operations during the AM and PM peak hours
- Int. 12. Mathilda Avenue/SR 237 Westbound Ramps: the addition of project traffic exacerbates unacceptable LOS F operations during the PM peak hour
- Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps: the addition of project traffic exacerbates unacceptable LOS F operations during the PM peak hour

These are the same four signalized intersections that were projected to operate at unacceptable service levels under Background Plus Project Conditions.

Unsignalized Intersections

Under Cumulative plus Project Conditions, three unsignalized intersections are projected to operate at unacceptable service level during the identified peak hours.

- Int. 2. Enterprise Way/Building D Site Access (South): during the PM peak hour the addition of project traffic degrades intersection operation from acceptable LOS D to unacceptable LOS E
- Int. 3. Enterprise Way/11th Avenue: during the AM peak hour the addition of project traffic degrades intersection operation from acceptable LOS C to unacceptable LOS E
- Int. 21. Ellis Street/Manila Drive: during the PM peak hour the addition of project traffic exacerbates unacceptable LOS F operations

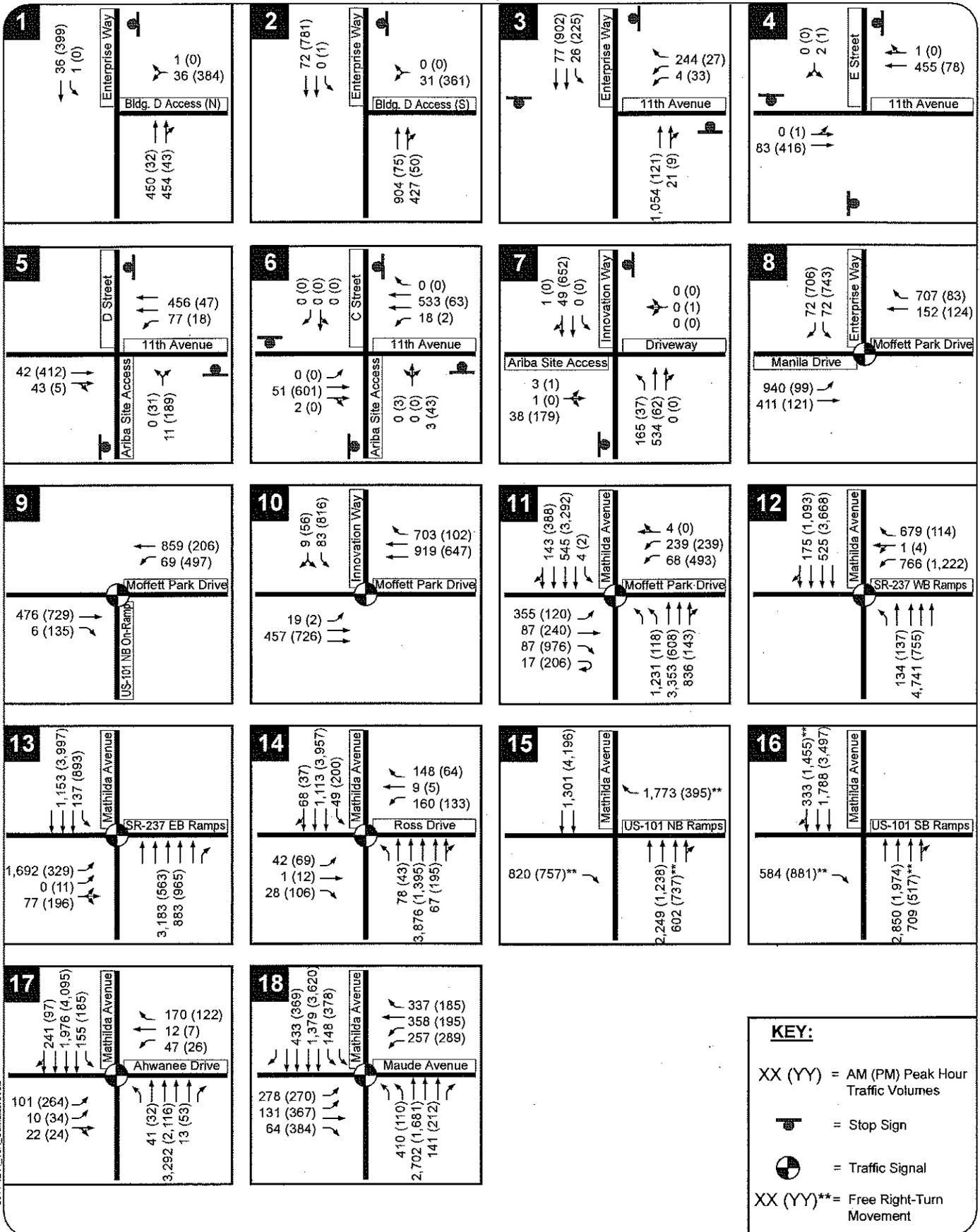
These are the same three unsignalized intersections that were projected to operate at unacceptable service levels under Background Plus Project Conditions.

The remaining unsignalized intersections are projected to operate at acceptable LOS. The Enterprise Way/Building D Site Access (South), Enterprise Way/11th Avenue, and Ellis Street/Manila Drive intersections satisfy the peak-hour signal warrant during at least one peak hour. **Appendix E** contains the peak-hour signal warrants.

Again, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a traffic signal. The responsible state or local agency should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization. On private roads (Enterprise Way), the project sponsor is responsible for the monitoring of actual traffic conditions.

FIGURE 13A

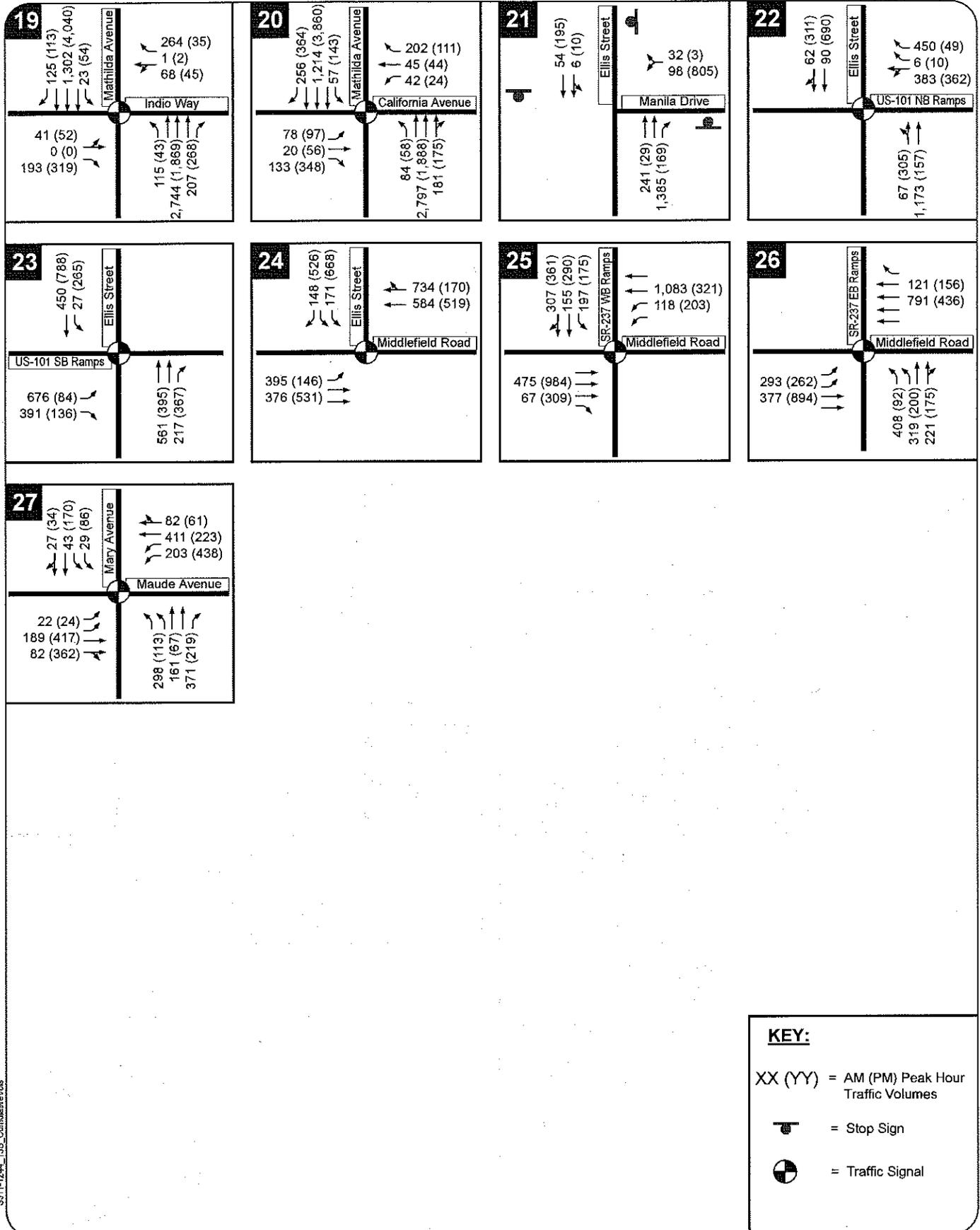
CUMULATIVE NO PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR VOLUMES



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FIGURE 13B

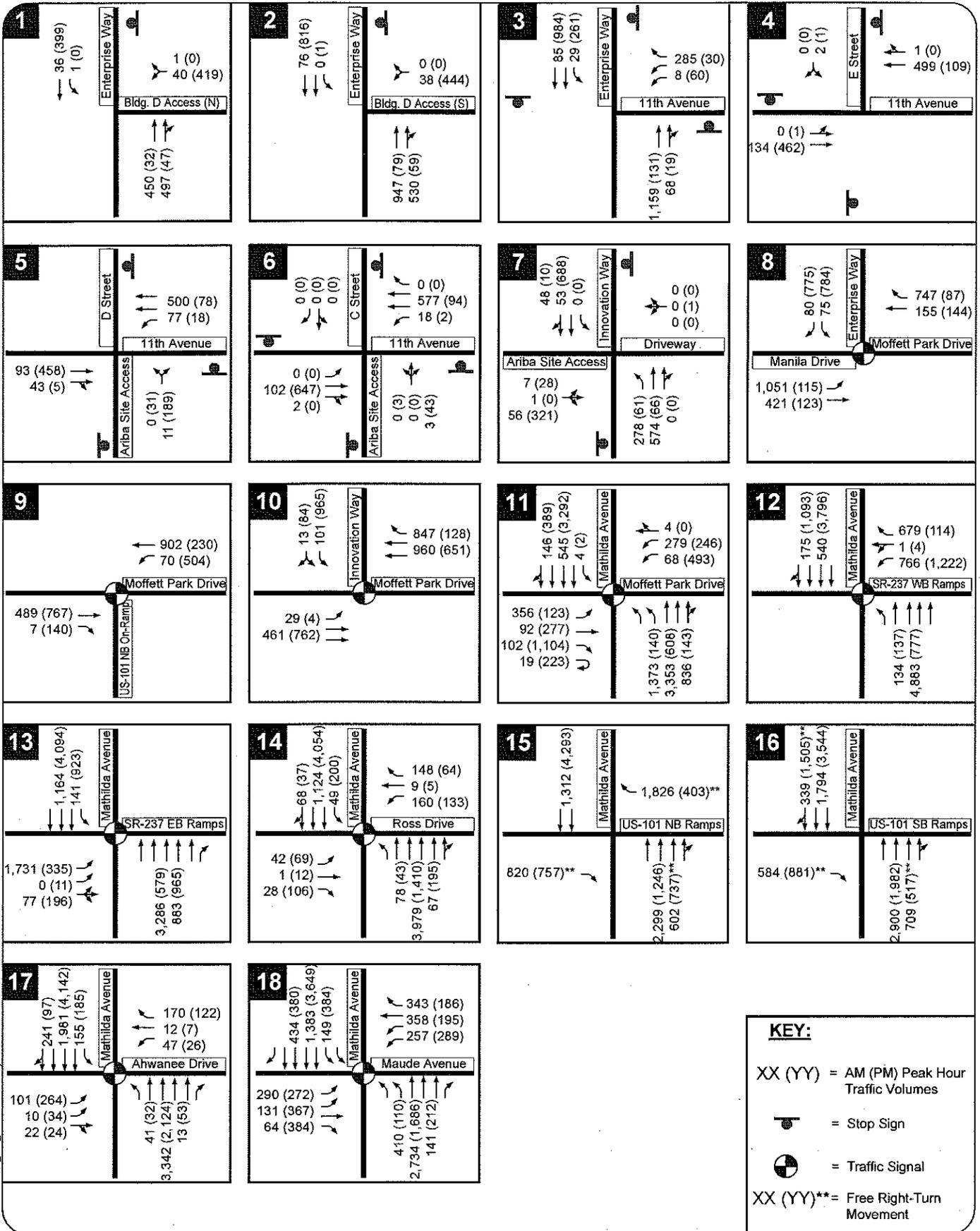
CUMULATIVE NO PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR VOLUMES



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FIGURE 14A

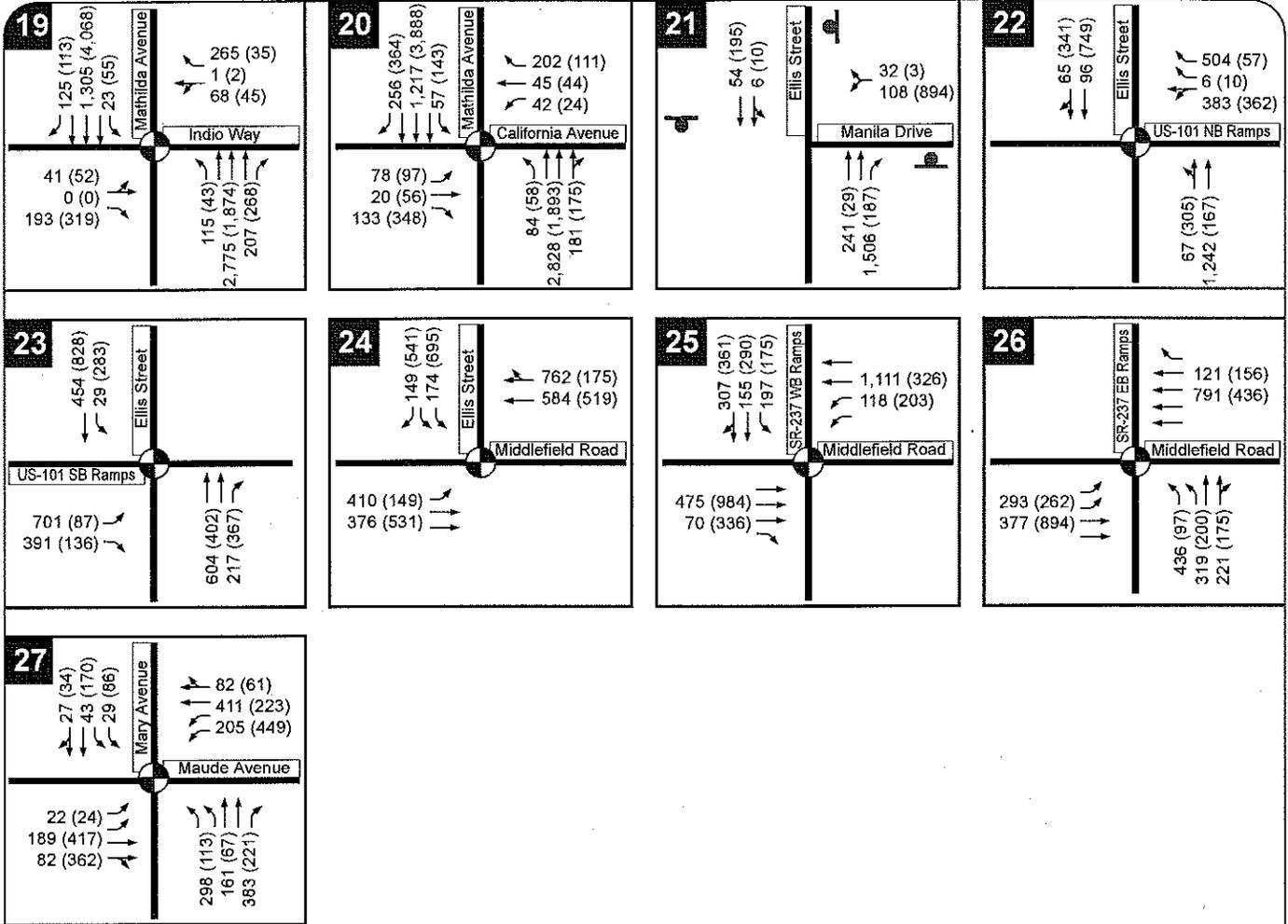
CUMULATIVE PLUS PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR VOLUMES



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FIGURE 14B

CUMULATIVE PLUS PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROLS, AND PEAK HOUR VOLUMES



KEY:
 XX (YY) = AM (PM) Peak Hour Traffic Volumes
 = Stop Sign
 = Traffic Signal

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TABLE 12
CUMULATIVE INTERSECTION LEVELS OF SERVICE

	Intersection	Peak Hour ¹	Inter-section Control	Cumulative Conditions		Cumulative plus Project Conditions				
				Delay ²	LOS ³	Delay ²	LOS ³	Δ in Crit. V/C ⁴	Δ in Crit. Delay ⁵	Signal Warrant Met? ⁶
1	Enterprise Way/Building D Site Access (North)	AM	Side-Street Stop	14.8	B	15.3	B	N/A	+0.5	No
		PM		23.5	C	27.2	D	N/A	+3.7	No
2	Enterprise Way/Building D Site Access (South)	AM	Side-Street Stop	27.1	D	32.7	D	N/A	+5.6	No
		PM		27.3	D	49.3	E	N/A	+22.0	Yes
3	Enterprise Way/11 th Avenue	AM	All-Way Stop	23.5	C	40.2	E	+0.144	+21.7	Yes
		PM		14.1	B	16.8	C	+0.081	+2.7	No
4	E Street/11 th Avenue	AM	All-Way Stop	8.9	A	9.2	A	+0.031	+0.3	No
		PM		8.7	A	8.9	A	+0.031	+0.3	No
5	D Street/Ariba Site Access/11 th Avenue	AM	All-Way Stop	8.8	A	9.1	A	+0.031	+0.4	No
		PM		9.5	A	9.8	A	+0.036	+0.5	No
6	C Street/Ariba Site Access/11 th Avenue	AM	All-Way Stop	9.5	A	10.0	B	+0.039	+0.6	No
		PM		10.3	B	10.9	B	+0.039	+0.7	No
7	Innovation Way/Ariba Site Access	AM	Side-Street Stop	9.3	A	10.7	B	N/A	+1.4	No
		PM		16.5	C	20.4	C	N/A	+3.9	No
8	Enterprise Way/Manila Drive/Moffett Park Drive	AM	Signal	62.2	E	92.2	F	+0.102	+51.6	N/A
		PM		13.7	B	15.5	B	+0.051	+2.3	N/A
9	US 101 Northbound On-Ramp/Moffett Park Drive	AM	Signal	3.4	A	3.4	A	+0.025	+0.2	N/A
		PM		13.9	B	14.5	B	+0.027	+1.6	N/A
10	Innovation Way/Moffett Park Drive	AM	Signal	6.3	A	6.9	A	+0.261	+1.3	N/A
		PM		14.3	B	15.2	B	+0.071	+2.8	N/A
11	Mathilda Avenue/Moffett Park Drive**	AM	Signal	129.3	F	137.1	F	+0.025	+12.9	N/A
		PM		234.3	F	274.4	F	+0.101	+63.0	N/A
12	Mathilda Avenue/SR 237 Westbound Ramps**	AM	Signal	66.6	E	73.1	E	+0.020	+8.2	N/A
		PM		139.8	F	149.4	F	+0.022	+11.4	N/A
13	Mathilda Avenue/SR 237 Eastbound Ramps**	AM	Signal	37.8	D+	39.3	D	+0.011	+4.1	N/A
		PM		86.7	F	92.8	F	+0.021	+11.0	N/A
14	Mathilda Avenue/Ross Drive**	AM	Signal	12.6	B	12.5	B	+0.012	+0.8	N/A
		PM		70.8	E	79.3	E-	+0.020	+12.6	N/A
15	Mathilda Avenue/US 101 Northbound Ramps**	AM	Uncontrolled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		PM		N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	Mathilda Avenue/US 101 Southbound Ramps**	AM	Uncontrolled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		PM		N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	Mathilda Avenue/Almanor Avenue/Ahwanee Avenue**	AM	Signal	21.4	C+	21.3	C+	+0.007	+0.9	N/A
		PM		22.2	C+	22.4	C+	+0.007	+1.7	N/A
18	Mathilda Avenue/Maude Avenue*	AM	Signal	50.7	D	51.2	D-	+0.010	+1.9	N/A
		PM		32.1	C-	32.2	C-	+0.005	+0.9	N/A
19	Mathilda Avenue/Indio Way**	AM	Signal	16.7	B	16.7	B	+0.006	+0.5	N/A

**TABLE 12
CUMULATIVE INTERSECTION LEVELS OF SERVICE**

Intersection	Peak Hour ¹	Inter-section Control	Cumulative Conditions		Cumulative plus Project Conditions				
			Delay ²	LOS ³	Delay ²	LOS ³	Δ in Crit. V/C ⁴	Δ in Crit. Delay ⁵	Signal Warrant Met? ⁶
	PM		21.2	C+	21.8	C+	+0.006	+1.2	
20 Mathilda Avenue/California Avenue**	AM	Signal	19.0	B-	19.1	B-	+0.006	+1.3	N/A
	PM		43.8	D	45.2	D	+0.005	+2.5	
21 Ellis Street/Manila Drive***	AM	All-Way Stop	8.4	A	8.5	A	+0.014	+0.1	Yes Yes
	PM		60.4	F	95.1	F	+0.118	+42.3	
22 Ellis Street/US 101 Northbound Ramps***	AM	Signal	19.5	B-	20.1	C+	+0.024	+2.5	N/A
	PM		25.4	C	25.8	B	+0.028	+2.1	
23 Ellis Street/US 101 Southbound Ramps***	AM	Signal	21.1	C+	21.5	C+	+0.031	+1.2	N/A
	PM		13.8	B	13.9	B	+0.026	+1.2	
24 Ellis Street/Middlefield Road***	AM	Signal	22.2	C+	23.9	C	+0.029	+4.7	N/A
	PM		23.9	C	24.1	C	+0.012	+0.6	
25 SR 237 Westbound Ramps/Middlefield Road***	AM	Signal	15.8	B	15.7	B	+0.009	+0.3	N/A
	PM		19.5	B-	19.2	B-	+0.017	+1.1	
26 SR 237 Eastbound Ramps/Middlefield Road***	AM	Signal	20.0	B-	20.0	C+	+0.000	+0.2	N/A
	PM		14.8	B	14.8	B	+0.000	+0.1	
27 Mary Avenue/Maude Avenue	AM	Signal	27.6	C	27.7	C	+0.008	+0.5	N/A
	PM		26.6	C	26.7	C	+0.005	+0.3	

Notes:

- 1 AM = morning peak hour, PM = afternoon peak hour.
- 2 Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections using methodology described in the 2000 HCM, with adjusted saturation flow rates to reflect Santa Clara County Conditions.
- 3 LOS = level of service. LOS calculations conducted using the TRAFFIX level of service analysis software package.
- 4 Change in the critical volume-to-capacity ratio (V/C) between Background and Background plus Project Conditions.
- 5 Change in critical movement delay between Background and Background plus Project Conditions.
- 6 Signal warrant based CA MUTCD Warrant 3, Peak Hour (Urban Area)
- * CMP intersection with LOS E threshold.
- ** Regionally significant intersection with LOS E threshold.
- *** City of Mountain View intersection.

Source: Fehr and Peers, 2011.

Qualitative Evaluation of Synchro/SimTraffic Analysis for Mathilda Avenue Corridor

The MPSP EIR presents future year analysis for the Mathilda Avenue corridor under 2020 General Plan Conditions. Though this scenario presents a further horizon year than the 2016 analysis presented in this report, the information from that analysis was used to qualitatively assess operations in the Mathilda Avenue corridor. Based on the Synchro analysis, the individual intersections in the study corridor would operate at LOS D or better, with the exception of the Mathilda Avenue/Moffett Park Drive intersection. This is similar to the TRAFFIX service levels presented in Table 12, though the analysis for this report also indicates that the Mathilda Avenue/SR 237 Westbound Ramps would operate unacceptably. Based on the MPSP corridor analysis, the overall signal system corridor was estimated to operate at LOS D and C during the AM and PM

peak hour, respectively. It should be noted that the 2020 General Plan analysis presented in the MPSP includes major roadway improvements (such as the Mary Avenue extension) that were not included in this report.

The 2006 Moffett Towers TIA also evaluated the Mathilda Avenue corridor using Synchro analysis software. The Project scenario presented in the 2006 report is comparable to the Cumulative plus Project scenario used for this report. According to the Synchro LOS calculations that were performed as part of the 2006 Moffett Towers TIA, the following intersections are projected to operate at a lower (worse) LOS rating than the calculated TRAFFIX LOS under Cumulative No Project Conditions:

- Mathilda Avenue/Maude Avenue (LOS F vs. LOS C-, PM peak)
- Mathilda Avenue/Indio Way (LOS E vs. LOS C+, PM peak)

The different level of service rating can be attributed to the input parameters for the two software programs. The Synchro software program utilizes the actual signal timing parameters, whereas the TRAFFIX software program calculates and optimizes the signal timings based on the volumes and lane geometry.

CUMULATIVE INTERSECTION IMPACTS AND MITIGATION MEASURES

This section of the report evaluates the intersection LOS results presented in **Table 12** against the City of Sunnyvale's, City of Mountain View's, and VTA's criteria for significant impacts and presents mitigation measures for identified impacts.

Int. 2. Enterprise Way/Building D Site Access (South)

Under Cumulative plus Project Conditions the Enterprise Way/Building D Site Access (South) intersection is projected to operate at LOS E and meet the MUTCD peak hour volume warrant during the PM peak hour. Because Enterprise Way is a private roadway, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for signalization. The project's impact will be **less-than-significant** based on City standards with the installation of a traffic signal.

Alternatively, the project's impact at the Enterprise Way/Building D Site Access (South) can be mitigated to **less-than-significant** levels with the provision of a fifty-foot refuge lane for the westbound left-turn movements. This mitigation would require some modifications to the existing raised median to accommodate the alternative mitigation measure. With this alternative mitigation the intersection would operate at LOS C and D during the AM and PM peak hours, respectively.

Additionally, although VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips, the Moffett Towers TDM program is required to reduce peak hour trips by 30 percent, based on the guidelines from the MPSP. With a 30 percent reduction in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be **less-than-significant**; however, the peak hour volume warrant would still be met.

Int. 3. Enterprise Way/11th Avenue

Under Cumulative plus Project Conditions the Enterprise Way/11th Avenue intersection is projected to operate at LOS E and meet the MUTCD peak hour volume during the AM peak hour. Because Enterprise Way is a private roadway, the project applicant should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to determine the need for signalization. The project's impact will be **less-than-significant** based on City standards with the installation of a traffic signal (the traffic signal is already built at this location and will simply need to be put in full operation).

Additionally, although VTA guidelines only allow for a maximum 9.5 percent reduction on vehicle trips, the Ariba Campus TDM program is required to reduce peak hour trips by 15 percent. With a 15 percent reduction in vehicle trips, the intersection would operate at LOS D, causing the impact at this intersection to be **less-than-significant**; however, the peak hour volume warrant would still be met.

Int. 8. Enterprise Way/Manila Drive-Moffett Park Drive

The intersection of Enterprise Way/Manila Drive-Moffett Park Drive is projected to operate deficiently under Cumulative No Project Conditions. Under Cumulative plus Project conditions, unacceptable AM and PM peak hour operations would be exacerbated with the addition of project traffic. Since the critical delay increases by more than four seconds and the critical V/C ratio increases by more than 0.01 between the Cumulative No Project and Cumulative plus Project Scenarios, the project is considered to have a **significant** impact at the Enterprise Way/Manila Drive-Moffett Park Drive intersection based on the City's impact criteria.

The 2006 Moffett Towers TIA also identified a significant impact at this intersection. The 2006 report recommended that the project contribute a fair share of funds to the proposed extension of Mary Avenue to 11th Avenue over US 101 and SR 237. As estimated in the *Mary Avenue Overcrossing Final Traffic Operations Report*, this improvement would decrease volume at the Enterprise Way/Manila Drive-Moffett Park Drive intersection by nearly 25 percent; such a decrease in traffic volume would improve operations at the intersection to LOS C during the AM peak hour. The Mary Avenue Extension project is programmed in the VTA's *VTP 2035* list of constrained projects and is included in the City's TIF program (discussed in Existing Conditions chapter). Thus, construction of the Mary Avenue extension would mitigate the project impact to a **less-than significant** level and payment of the City's TIF would represent the project's fair share contribution.

As an alternative to the Mary Avenue Overcrossing, the eastbound through lane on Manila Drive could be converted to a shared through/left-turn lane, thus enabling two lanes of traffic to turn left onto Enterprise Way. This improvement would also require the signal phasing on Manila Drive-Moffett Park Drive to be converted from protected left-turn phasing to split phasing to accommodate the shared through/left-turn lane. With this improvement the intersection is projected to operate at LOS D+ during the AM peak hour and LOS C+ during the PM peak hour and the impact would become **less-than-significant**.

Int. 11. Mathilda Avenue/Moffett Park Drive

The intersection of Mathilda Avenue/Moffett Park Drive is projected to operate deficiently under Cumulative No Project Conditions. Under Cumulative plus Project conditions, unacceptable AM and PM peak hour operations would be exacerbated with the addition of project traffic. Since the critical delay increases by more than four seconds and the critical V/C ratio increases by more than 0.01 between the Cumulative No Project and Cumulative plus Project Scenarios, the project is considered to have a **significant** impact at the Mathilda Avenue/Moffett Park Drive intersection based on the City's impact criteria.

As estimated in the *Mary Avenue Overcrossing Final Traffic Operations Report*, the Mary Avenue overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the AM peak hour and 23 percent in the PM peak hour. Traffic would shift onto the new Mary Avenue overcrossing, affecting Mary Avenue north of Maude Avenue. Construction of the Mary Avenue overcrossing, along with reconfiguration of the SR 237/Mathilda Avenue ramp intersections, would reduce the impact to a **less-than-significant level**. Payment of the City's TIF would constitute the project's fair share contribution. These improvements consist of:

- Re-aligning Moffett Park, east of Mathilda Avenue, to connect to 5th Avenue via Bordeaux Avenue;
- Shifting the SR 237 Westbound Off-ramp 150 feet to the north to align with Moffett Park/Mathilda Avenue;
- Removal of SR 237 Westbound On-ramp; and,

- Construction of a direct southbound right-turn on-ramp from Mathilda Avenue to US 101 north

These improvements are programmed in both the City's TIF and the VTA's VTP 2035 list of constrained projects.

Int. 12. Mathilda Avenue/SR 237 Westbound Ramps

The addition of project traffic will exacerbate unacceptable LOS F operations at the intersection of Mathilda Avenue/SR 237 Westbound Ramps in the PM peak hour under Cumulative plus Project Conditions. The critical delay is projected to increase by more than four seconds and the critical V/C ratio is projected to increase by more than 0.01 between the Cumulative No Project and Cumulative plus Project Scenarios; therefore the project is considered to have a **significant** impact based on the City's impact criteria.

The identified improvements for the Mathilda Avenue/Moffett Park Drive intersection would also mitigate the impacts identified for the Mathilda Avenue/SR 237 Westbound Ramp intersection, since they include elimination of this intersection. Payment of the City's TIF would constitute the project's fair share contribution.

Int. 13. Mathilda Avenue/SR 237 Eastbound Ramps

Under Cumulative plus Project Conditions, the addition of project traffic at the intersection of Mathilda Avenue/SR 237 Eastbound Ramps is projected to exacerbate unacceptable PM peak hour operations and increase the critical delay by more than four seconds and the critical V/C ratio by more than 0.01; thus based on the City of Mountain View's threshold for significant impacts the project is considered to have a **significant** impact.

The cycle length at this signal would likely be adjusted with the Mathilda Avenue/SR 237 Westbound Ramps project mentioned above; if the cycle length is changed from 65 seconds to between 80 and 120 seconds, the intersection will operate at LOS E and the impact will be reduced to a **less-than-significant** level. Additionally, the Mary Avenue overcrossing would shift nearly 13 percent of the northbound Mathilda Avenue traffic to Mary Avenue in the AM peak hour and 23 percent in the PM peak hour; the intersection would operate acceptably with these volume reductions. Traffic would shift onto the new Mary Avenue overcrossing, affecting Mary Avenue north of Maude Avenue. Payment of the City's TIF would constitute the project's fair share contribution.

Int. 21. Ellis Street/Manila Drive

Under Cumulative plus Project Conditions, the addition of project traffic is projected to exacerbate unacceptable PM peak hour operations and increase the critical delay by more than four seconds and the critical V/C ratio by more than 0.01; thus based on the City of Mountain View's threshold for significant impacts the project is considered to have a **significant** impact.

The addition of a westbound left-turn lane would reduce the PM impact to a **less-than-significant** level. With this improvement the intersection is projected to operate at LOS A during the AM peak hour and LOS C during the PM peak hour. Of the total growth at the intersection from the existing condition, roughly 11% is generated by the Project in the AM peak hour and 15% is generated by the Project in the PM peak hour.

CUMULATIVE FREEWAY IMPACTS

As discussed under Existing Conditions, VTA requires analysis of freeway segments when the proposed development project is expected to add traffic equal to at least one percent of a freeway segment's capacity. Since the number of trips added under Existing plus Project Conditions is the same as under Background plus Project Conditions, the results in **Table 9** are also applicable to this scenario. Therefore, the addition of project trips under Background plus Project Conditions will not degrade operations from acceptable to unacceptable service levels as shown in **Table 9**.

6. SITE ACCESS AND ON-SITE CIRCULATION

Figures 2a and 2b show the proposed site plans for the Ariba and Moffett Towers projects indicating the location of the project driveways and the internal circulation system that supports auto, pedestrian, and bicycle traffic. Future site access to/from each project site and the internal circulation within each project site are discussed below. Figures 15a and 15b show recommendations for the Ariba and Moffett Towers site plans based on site access and circulation for vehicles, pedestrians, bicyclists, and transit users.

DES Architects & Engineers provided Fehr & Peers with drafts of the site plans on March 16, 2011. Fehr & Peers communicated directly with DES regarding some site modifications, including circulation within the new parking garage and pedestrian access from the surrounding roadway network. These comments were addressed and the site plans shown in this report are current as of April 11, 2011. The City of Sunnyvale will require a detail review of the final site plans once they are available.

ACCESS AND CIRCULATION REVIEW

Ariba Campus Expansion

The internal circulation of the proposed garage was reviewed for dead-end aisles and parking spaces that would be difficult to maneuver in and out of. There is one dead-end aisle on the ground level of the proposed garage, though sufficient turnaround space has been provided to facilitate vehicular circulation.

The new parking garage will be primarily constructed on an existing surface parking lot, though the garage would also eliminate a pedestrian walkway that currently meanders from the south-east corner of the project site at the Moffett Park Drive/Innovation Way intersection to the existing Building 3. There is limited pedestrian activity on Moffett Park Drive and Innovation Way (no cross walks are provided at that intersection and no sidewalks existing on Moffett Park Drive east of Innovation way and on the east side of Innovation Way) and the removal of the pedestrian walkway is not considered significant, since it does not result in added walk time or inconvenience for pedestrians. Pedestrian access to the Moffett Park light rail station is not impacted by the removal of the walkway. A more direct pedestrian access is provided closer to the station and closer to the center of the project site.

Driveway Queue Storage Analysis

Since the new parking garage will be constructed off the site's entrance/exit with Innovation Way, most of the project traffic will now access the site from the Innovation Way entrance. Based on the LOS results presented in Tables 8 and 11, the site access driveway is projected to operate at LOS C or better under Existing plus Project, Background plus Project Conditions, and Cumulative plus Project Conditions; thus the number of driveways is sufficient to accommodate the amount of project traffic. Queues of vehicles turning left into and out of the site at the Innovation Way driveway were evaluated to determine if sufficient storage lengths are provided. The storage capacity was analyzed under Cumulative plus project conditions, since overall intersection volumes are higher in this scenario and it presents the most conservative approach.

To estimate the maximum queue the approaching and conflicting traffic volumes were used in addition to the peak hour factor, speed limit, and distance to the closest traffic signal. The purpose of the analysis was to estimate maximum inbound driveway queuing. Three methods were considered:

1. The HCM 2000 Method described in Chapter 17 of the *Highway Capacity Manual*,
2. The Uniform Arrival Method, and

3. The Queue Length Estimation Method as described in a November 2001 *ITE Journal* article⁵.

The HCM Method and Uniform Arrival Method both estimate a maximum queue of one vehicle for each movement for both the AM and PM peak hours. These queue length methods typically underestimate unsignalized queue lengths. Therefore, the Queue Length Estimation Method, which is based on field data and accounts for platooning caused by adjacent signals, was used to estimate maximum queue length for the project driveway.

Based on the assumptions listed above, the northbound left-turn from Innovation Way into the project site will serve an estimated maximum queue of five vehicles during the AM peak hour and four vehicles during the PM peak hour. **Appendix F** includes the queue length calculation sheets. Assuming a length of 25 feet to accommodate each vehicle, the northbound left-turn storage lane should be 125 feet long. **The current northbound left-turn pocket on Innovation Way is approximately 75 feet long and thus should ideally be extended by an additional 50 feet to accommodate anticipated project traffic. However, there are some right-of-way constraints with the existing light-rail tracks just south of the Innovation Way entrance. Therefore, the northbound left-turn pocket on Innovation Way should be extended up to 50 feet to the extent feasible within the right-of-way.**

The estimated queue for the exit driveway onto Innovation Way is six vehicles, thus requiring a storage capacity of 150 feet. The proposed driveway throat depth at the Innovation Way driveway is approximately 200 feet and thus the site has sufficient storage capacity to accommodate project traffic.

Signing and Striping

As proposed the garage entrance off the Innovation Way driveway will be slightly offset from the opposing entrance to the existing surface parking lot and parking structure. **To better facilitate vehicle circulation at this intersection, entrance approaches should be signed and stop controlled.**

Mary Avenue Extension

The proposed site plan for the Ariba campus does not show the future Mary Avenue extension connection to 11th Avenue; though the project applicant has allowed for future right-of-way for the Mary Avenue Extension project within the current layout of the project site as shown in **Figure 16**.

Moffett Towers Campus Expansion

The proposed new garage for the Moffett Towers project will be constructed at the very northern border of the campus, while Building D will actually be constructed towards the southern border of the site. Based on the current layout of the entire campus, most employees for Building D will likely use the existing parking garage that is closer to the building, while Buildings G and F are closer to the proposed garage. To ensure that both the existing and proposed garages are evenly and efficiently utilized, **the project applicant should consider adding a parking management program.** Such a program could either assign parking based on building (i.e. Buildings D, E, and H park in the existing garage and buildings F and G park in the proposed garage. Parking garage access can be re-assessed as the tenants begin to fill the buildings.

The entire Moffett Towers campus between 11th Avenue and 5th Avenue has six driveways on Enterprise Way. Full access driveways are provided toward the southern and northern borders of the site, with the northern driveway providing full access to the proposed parking garage. All other driveways are restricted to right-n/right-out movements only by a raised median on Enterprise Way.

⁵ "Estimation of Maximum Queue Lengths at Unsignalized Intersections", Gard, John, *ITE Journal*, November 2001.

The internal circulation of the proposed garage was reviewed for dead-end aisles and parking spaces that would be difficult to maneuver. There are no dead-end aisles in the proposed garage or any parking spaces that would be difficult to maneuver.

Garage Access

The northern full access driveway provides not only access to the proposed garage, but also to an existing surface parking lot and the existing garage. To distribute vehicles and facilitate vehicle flow in and out of the northern end of the project site, **ideally a secondary access would be provided from the proposed garage to 5th Avenue; however this is a private roadway with restricted access and this is not a feasible improvement.**

Based on the LOS results presented in **Tables 8 and 11**, the northern full access site access driveway is projected to operate at LOS D or better under Existing plus Project, Background plus Project Conditions, and Cumulative plus Project Conditions. The southern full access driveway is projected to operate at LOS E under Background plus Project Conditions and Cumulative plus Project Conditions.

The number of left-turns out of the driveway conflicting with vehicles that have already exited the northern driveway and are continuing south causes the driveway to operate unacceptably. The number of driveways is sufficient to accommodate project traffic, though the southern driveway may have to be signal-controlled at some point in the future. The project sponsor should undertake regular monitoring of actual traffic conditions and accident data and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

Driveway Queue Storage Analysis

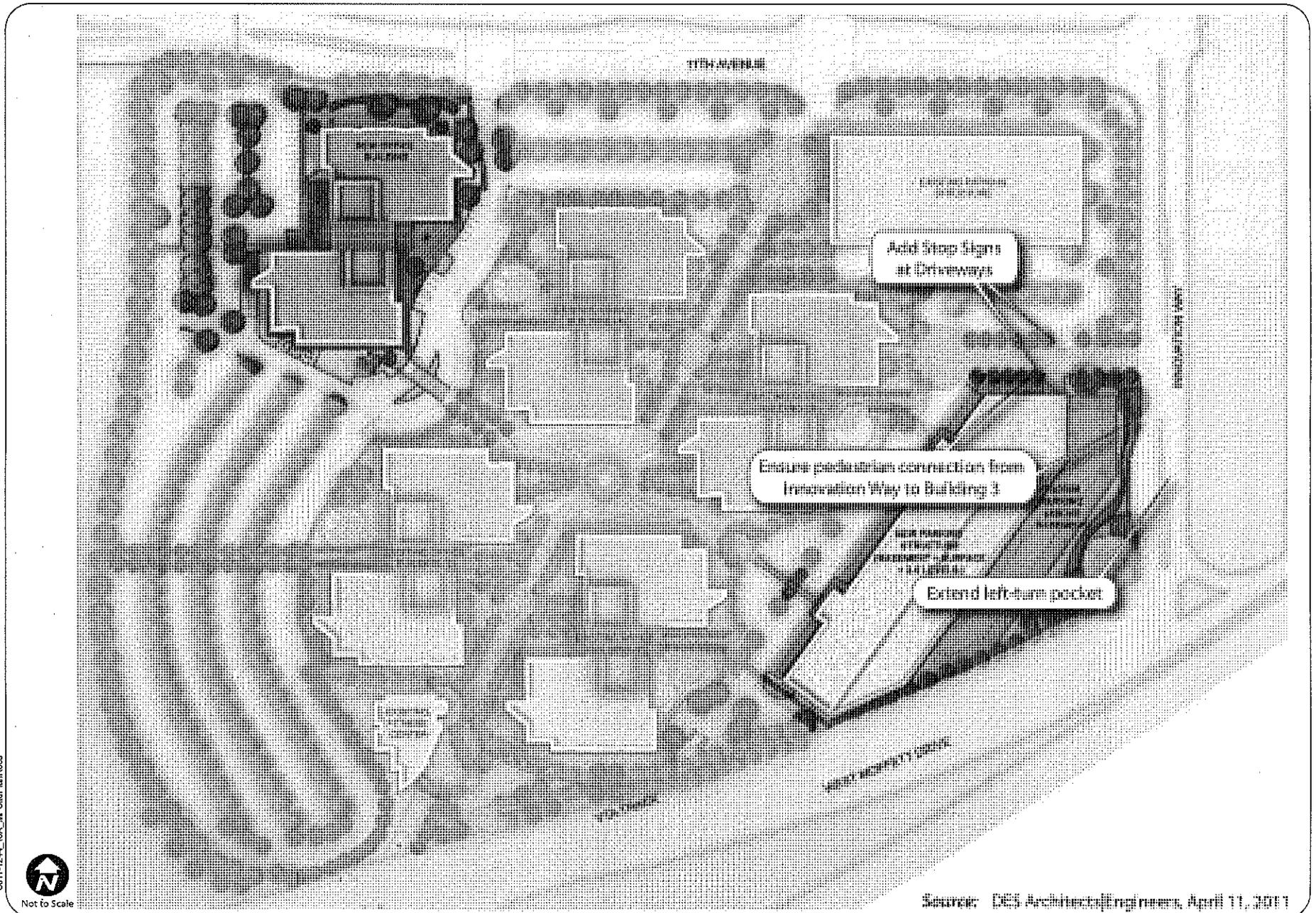
Queues were evaluated at the Enterprise Way full access driveways to determine if sufficient storage lengths are provided for vehicles exiting the site. Due to the restricted access at the 5th Avenue/Enterprise Way intersection only minimal left-turn vehicles will access the site from Enterprise Way and the queue analysis is limited to evaluating on-site queues. The storage capacity was analyzed under Cumulative plus Project conditions, since overall intersection volumes are higher in this scenario and it presents the most conservative approach.

The estimated queues for the exit driveways onto Enterprise Way are 8 vehicles for the north driveway and 10 vehicles for the south driveway, requiring a storage capacity of 200 feet and 250 feet, respectively. The proposed driveway throat depth is 350 feet at the northern driveway and 250 feet at the southern driveway; thus the site has sufficient storage capacity to accommodate project traffic.

Signing and Striping

As proposed the garage will have two entries/exits onto the drive aisles that provide access to northern full access driveway. **To better facilitate vehicle circulation the garage exits onto the main drive aisles should be signed as stop controlled, as shown in Figure 15b.** Stop signs should also be placed at the westbound approach of the southern garage access driveway, as well as at the south end of each driveway aisle that connects to the main access driveway leading to Enterprise Way.

ARIBA CAMPUS EXPANSION SITE PLAN RECOMMENDATIONS

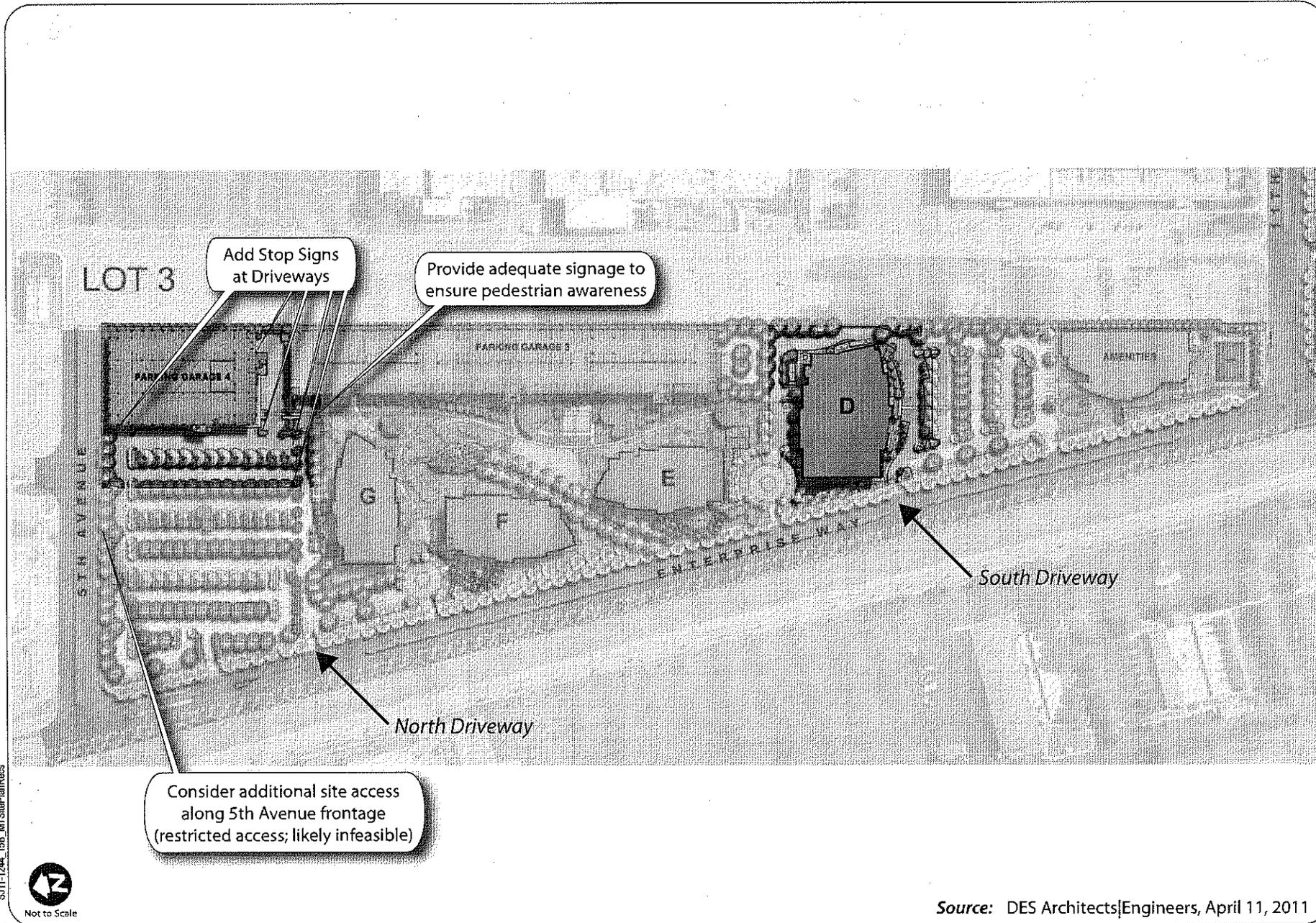


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Not to Scale

MOFFETT TOWERS EXPANSION SITE PLAN RECOMMENDATIONS



ARIBA CAMPUS EXPANSION SITE PLAN WITH POTENTIAL FUTURE MARY AVENUE EXTENSION PROJECT

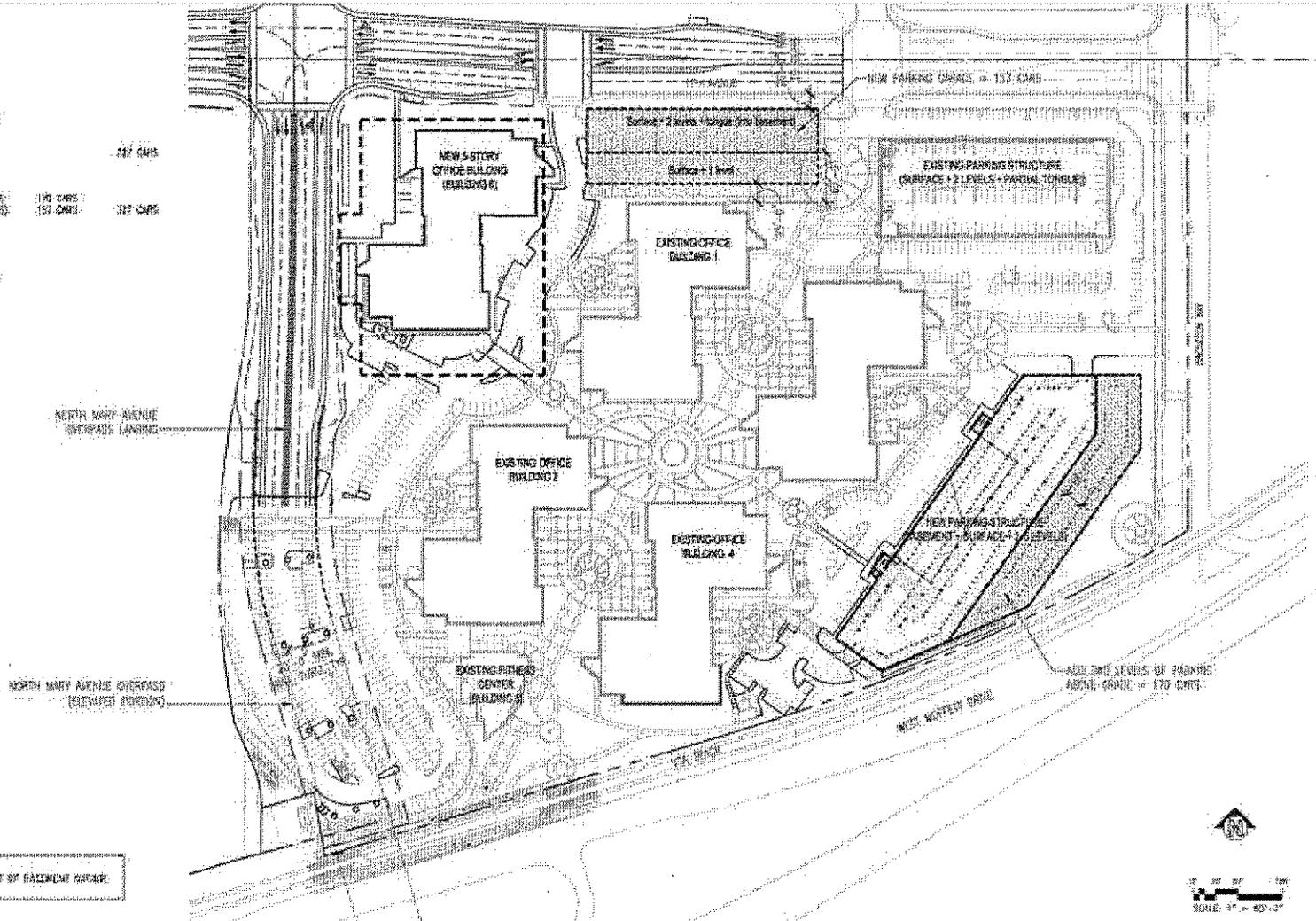
PARKING DATA

PARKING REQUIREMENT FOR NON-RESIDENT PARKING REQUIREMENTS:

- LINE OF SURFACE PARKING STALLS (SEE 10'-0" NORTH OVERPASS) 347 CARS

SPACING PROVIDED:

- TWO NEW LEVELS AT PROPOSED GARAGE 170 CARS
- NEW PARKING GARAGE (MARKING INDICATED) 157 CARS



NEW BUILDING AT MOFFETT PARK
 SUNNYVALE, CA.

PROPOSED SITE PLAN (POST NORTH MARY AVENUE OVERPASS)

PLANNING/DESIGN SUBMITTAL: 02/21/2011
 PLANNING/DESIGN SUBMITTAL: 03/19/2011
 PLANNING/DESIGN SUBMITTAL: 04/11/2011

2B



Project Number: 201014

S:\11-1244_16_ArribaSitePlan



Source: DES Architects|Engineers, April 11, 2011

PEDESTRIAN AND BICYCLE ACCESS AND CIRCULATION

This section of the report addresses both off-site and on-site pedestrian access and circulation for the Ariba and Moffett Towers projects.

Off-Site Pedestrian Evaluation

Sidewalks would be provided on Enterprise Way, 11th Avenue, and 5th Avenue along the project frontages. Pedestrian connections would be provided between the proposed buildings, parking lots, and parking garages. A pedestrian pathway would link the light rail station located on Manila Drive to the new building at the Ariba Campus and to the 11th Avenue/Enterprise Way sidewalks that continue to Building D at Moffett Towers. The proposed pedestrian path between the Ariba Campus buildings and the light rail station would cross through the parking lot with a diagonal alignment. While this alignment would create greater exposure for pedestrians to traffic circulating in the parking areas and around the site, there is a clearly marked crosswalk at the southeast corner of the building that will aid pedestrian travel through the site. Sidewalks are also included in the City's TIF program.

Ariba On-Site Pedestrian Evaluation

The new parking garage on the Ariba campus removes a pedestrian connection from the northeast corner of the Innovation Way/Moffett Park Drive intersection. While the direct connection is removed, pedestrians will still have access around the garage and the increase in potential for pedestrian-vehicle conflicts is minimal. Additionally, if the Mary Avenue Extension is completed and it connects to 11th Avenue, the project applicant has allowed for future right-of-way on-site. Pedestrian and bicycle access would only be helped by the Mary Avenue Extension.

Pedestrian access between the garage and the Ariba office buildings will be provided via three pedestrian walkways. Two of these walkways will be provided at existing pedestrian paths and one new pedestrian access will be constructed as part of the proposed project. On-site pedestrian access is considered adequate.

Moffett Towers On-Site Pedestrian Evaluation

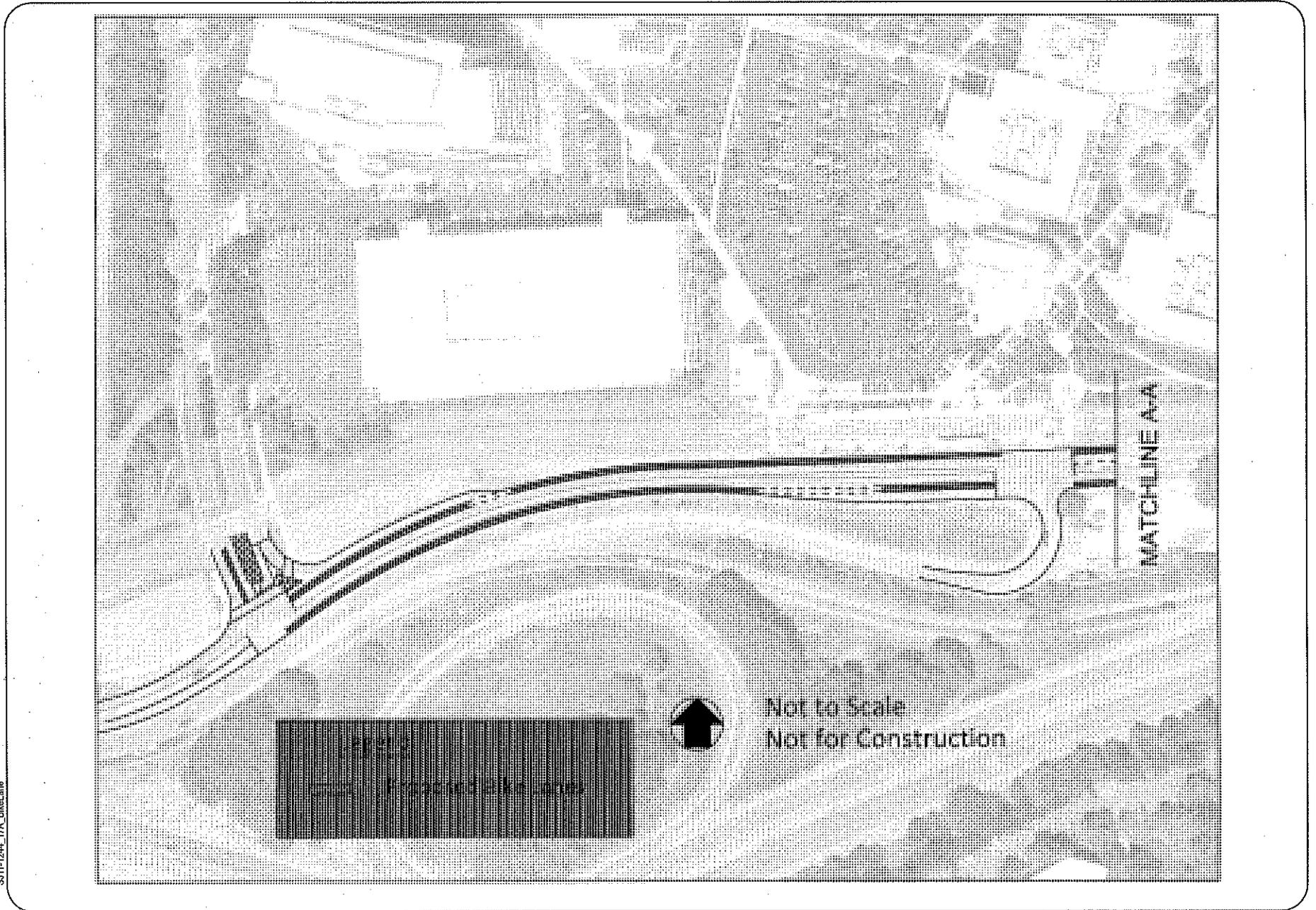
Pedestrian access between the proposed new garage and the Moffett Towers office buildings will be provided via one direct pedestrian path. This path crosses both the end of the ramp of the new garage, as well, as the north driveway for the existing garage. To minimize conflicts between pedestrians and vehicles, the pedestrian walkways should be adequately signed and include other treatments to highlight the presence of pedestrians. With such improvements, pedestrian access within the site is considered adequate.

Bicycle Access Evaluation

The project sites have bicycle access via the bicycle lanes on 11th Avenue and Enterprise Way; however, no bicycle lanes are provided on Moffett Park Drive east of Enterprise Way, which provides access to 11th Avenue and Enterprise Way. While less than ideal, the roadway is wide enough for bicyclists to share the road with vehicles, but re-striping the road to accommodate bike lanes could be considered if safety becomes an issue. The City has identified the construction of bike lanes on Moffett Park Drive as a future bicycle improvement; a conceptual design, shown in **Figure 17**, and cost estimate, detailed in Appendix G, have been developed as part of this study. Due to the lack of available right-of-way between the light-rail tracks and the SR-237 westbound on-ramp, no bike lane was added between Innovation Way and Mathilda Avenue. Sharrows and signage will be used to alert vehicles to the potential presence of bicyclists in the Moffett Park Drive segment between Mathilda Avenue and Innovation and the City will continue to study the possibility of adding a bike lane in this segment. The cost estimate for the bicycle lane between Enterprise Way and Mathilda Avenue is approximately 105,000 dollars, which includes pavement rehabilitation, and the project will pay its fair-share contribution to this improvement.

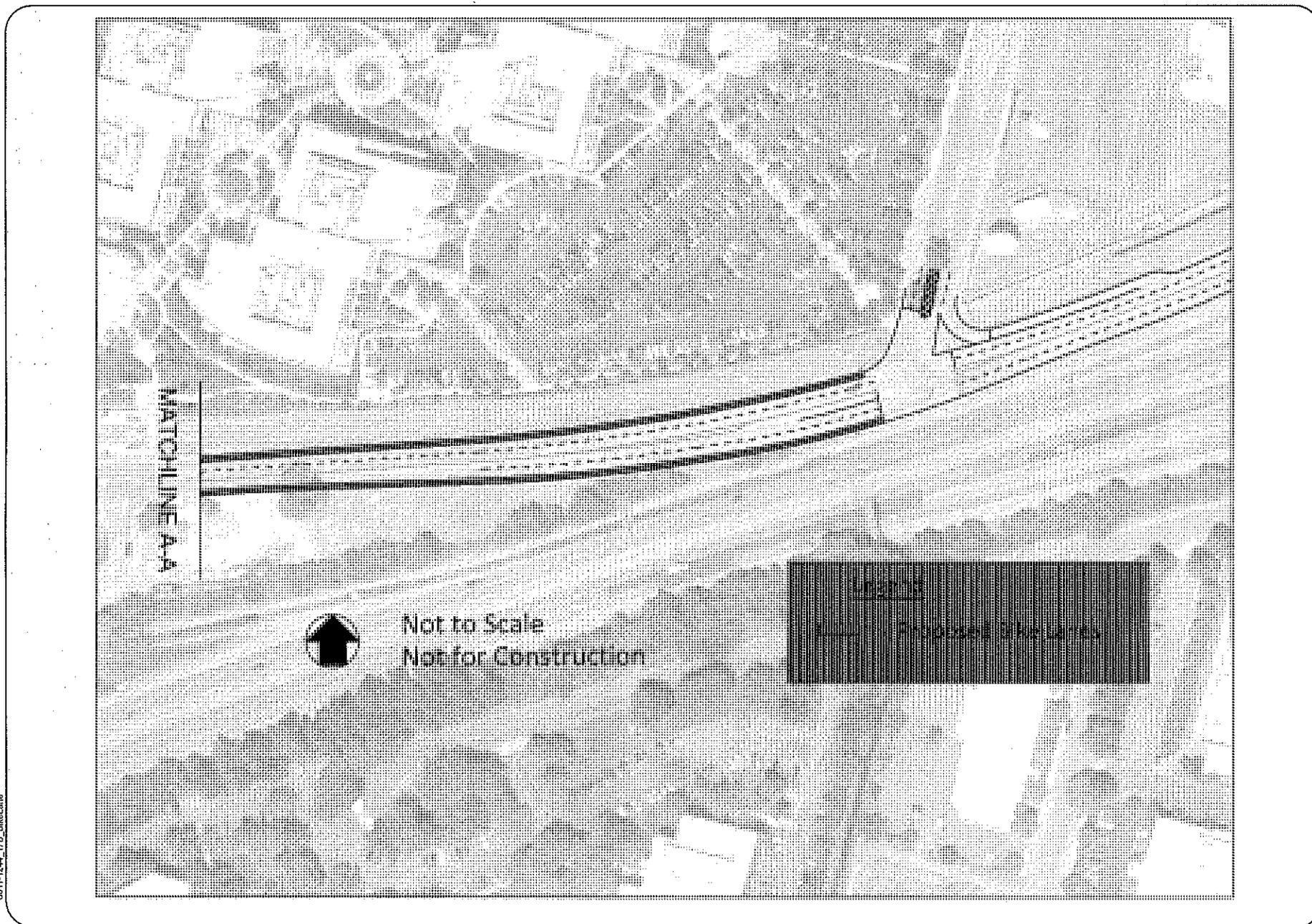
Overall, because the project is an expansion to recent construction, most of the existing infrastructure appropriately accommodates bicyclists and pedestrians.

MOFFETT PARK DRIVE BICYCLE LANES CONCEPTUAL DESIGN



SI11-1244-17A_BikeLanes

MOFFETT PARK DRIVE BICYCLE LANES CONCEPTUAL DESIGN



SJ11-1244_17B_BikeLane

TRANSIT ACCESS

Transit impacts are considered significant if the proposed project conflicts with existing or planned transit facilities or generates potential transit trips and does not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops. Based on these criteria, the project would not have a potentially significant impact on transit service.

The existing load factors (average number of riders per trip) for Light rail Line 902 and Routes 26, 54, 120, 121, 122, 321, and 328 were provided by VTA. Light rail trains have seated capacities of 65 per car and buses have seated capacities of 38. The load factor for Line 902 at the Moffett Park Station is 0.34 (22 people). For Routes 26 and 54, the load factors are 0.49 (19 people) and 0.33 (13 people), respectively. The express routes have load factors between 0.38 (14 people) and 0.52 (20 people).

The transit service within the immediate project area operates well below capacity, and additional trips generated by the proposed project could be accommodated by existing light-rail and bus service. Existing service on light rail and Route 54 is adequate even if the full 30% TDM reduction were shifted to just these public transit lines and not to carpools, bicyclists, pedestrians, and other transit lines. The area also has a well-used shuttle system (see *Existing Conditions* and **Figure 5**) that would be able to accommodate additional riders.

The Lockheed Martin Transit Center, where most of the available transit service is focused, would not be readily accessible to pedestrians and bicyclists generated by the proposed project because the facility is located approximately one mile from the project sites. Pedestrians and bicyclists would need to take 11th Avenue to Innovation Way to Mathilda Avenue to 5th Avenue to reach the transit center because 5th Avenue has restricted access. While Route 54 operates along Mathilda Avenue and runs closer to the project site than the transit center, it can be accessed only via the same circuitous path.

PARKING ASSESSMENT

The MPSP provides off-street parking and bicycle requirements for the Moffett Park area.

Vehicle Parking

The MPSP requires general office and corporate headquarters land uses with the MPSP area to provide a minimum off-street parking supply at a rate of one space per 300 s.f. of gross floor area; or 3.3 spaces per 1,000 s.f. and a maximum of one space per 250 s.f. of gross floor area (4 spaces per 1000 s.f.). Based on the City of Sunnyvale's Municipal Code (section 19.46.050) up to 50 percent of the spaces can be designed for compact cars. **Table 13** summarizes the proposed parking supply and parking requirements for the Ariba and Moffett Towers expansion projects.

**TABLE 13
VEHICLE PARKING REQUIREMENTS**

Project Site	Project Size	Parking Requirement			Proposed Parking Supply	Meet Parking Requirement?
		New Development ¹	Parking to be Removed ²	Total Required ³		
Ariba Addition	200,000	667	563	1,230	1,233	Yes
Moffett Towers – Building D Addition	125,000	417	250	667	667	Yes

Notes:

- 1 MPSP requires minimum parking supply ratio of 1 space per 300 s.f. of gross floor area.
- 2 Construction of building addition and parking garage will remove parking from existing surface parking lots
- 3 Total Parking Required = New Development + Parking to be Removed.

Source: Fehr & Peers, April 2011.

Based on the requirements of the MPSP and to account for existing spaces to be displaced, the project would be required to provide an additional 1,230 parking spaces at the Ariba campus and an additional 667 at the Moffett Towers campus. The Ariba site proposes to provide an additional 1,233 parking spaces and thus exceeds the parking requirement by 3 parking spaces. Similarly, the Moffett Towers project will provide an additional 667 parking spaces and exactly meets the required parking supply. As outlined in Table 13, the total new parking proposed based on the current site plans for the Ariba and Moffett Towers campuses is sufficient The City's parking requirements.

Bicycle Parking

The MPSP requires office uses to provide one bicycle parking facility per 6,000 s.f. of gross floor area. Of that requirement 75 percent needs to be Class I parking facilities and 25 percent Class II facilities. Class I facilities protect the entire bicycle from theft, vandalism, and inclement weather and are appropriate for long-term storage. Examples include bike lockers, rooms with key access, guarded parking areas, and valet/check-in parking. Class II parking facilities include bicycle racks to which the frame and at least one wheel can be secured with a user-provided lock. The MPSP bicycle requirements are the same as recommended by the VTA in their TIA Guidelines.

The project will need to supply 34 additional bicycle spaces on the Ariba campus and 21 additional bicycle spaces for Building D at the Moffett Towers campus. Of these, 75 percent (26 and 16 spaces, respectively) will be Class I bicycle lockers and remaining 25 percent (8 and 5 spaces, respectively) will be Class II bicycle facilities. With the provision of these bicycle parking facilities the project will meet City and MPSP guidelines.

As shown on the Ariba site plan in Figure 2a, the project proposes to provide both Class I and Class II bicycle parking facilities at one of the entrances to the office building. This will allow for increased natural surveillance and provide convenient access for bicycle riders to the new Ariba office building.

As proposed, the Building D of the Moffett Tower project will provide both Class I and Class II bicycle parking in the ground floor level of the parking garage. The proposed garage is at the other end of the Moffett Towers campus from Building D, the bicycle parking may not be conveniently accessible by bicyclists. It is recommended that based that the project be conditioned to provide, safe convenient, accessible bicycle parking for Building D, consistent with the VTA Bicycle Technical Guidelines and in close proximity to building entrances.

7. CONSTRUCTION IMPACTS

Construction for both the Ariba and Moffett Towers expansion projects are anticipated to occur approximately during the same time and are expected to occur over a one-year period. This section of the report addresses construction-related impacts of the proposed projects, specifically as they relate to expected traffic and parking impacts. General recommendations on construction-related mitigations, such as limiting times when trucks would be permitted to travel to/from the sites and restricting routes to prevent impacting neighboring communities, are provided.

TRAFFIC OPERATIONS

Mathilda Avenue is the City designated truck route that provides the most direct access to the project sites. In general truck access to the site should be limited to Mathilda Avenue, Moffett Park Drive, Enterprise Way, 11th Avenue, and Innovation Way, since these provide the most direct access.

As shown in **Table 8** all of the study intersections near the project site operate at LOS C or better under Existing plus Project Conditions, and the amount of traffic added by the project is greater than the amount of construction traffic. Therefore, the addition of construction traffic would not be significant regarding intersection operations. However, as discussed under Existing Conditions the intersections of the Mathilda Avenue corridor between Moffett Park Drive and Almanor Avenue are closely spaced and the corridor experiences operational issues beyond simple intersection LOS primarily due to vehicle weaving; therefore truck access to the site should be restricted during peak commute times (7 AM to 9 AM and 4 PM to 6 PM) to limit potential impacts to the operations of Mathilda Avenue.

PARKING IMPACTS

Parking impacts related to construction of the new office buildings and garages are evaluated in terms of parking space restrictions associated with the construction activities, storing construction materials and equipment on site, and parking for construction workers.

Ariba Campus

Construction of the Ariba project will eliminate over 560 surface parking spaces at the office building and garage construction sites. From current observations, the existing parking lot is not fully occupied. However, the loss of 560 spaces will reduce the number of spaces for tenants at the Ariba site and results in an impact. The project applicant should work with the adjacent Moffett Towers site (or other site) to determine if employees could park there temporarily during construction. The Moffett Towers site has both surface parking and a garage that have excess capacity to accommodate parking from the Ariba site during construction. There are direct pedestrian walkways between the Moffett Towers and Ariba site that would facilitate the parking usage at the Moffett Towers site.

Moffett Towers Campus

Construction of the Moffett Towers project will eliminate 250 surface parking spaces at the garage site. Most of the Moffett Towers campus is currently vacant and parking at the site is minimal; thus there is excess capacity to accommodate construction staging and parking and there will not be any significant impacts during construction.

PROJECT DATA TABLE

	EXISTING	PROPOSED	REQUIRED/ PERMITTED
General Plan	Moffett Park Specific Plan	Same	Moffett Park Specific Plan
Zoning District	MP-TOD	Same	MP-TOD
Lot Size (s.f.)	28.698 acres 1,250,085 sf.	Same	22,500 sf. min.
Gross Floor Area (s.f.)	Approved – 875,058 Built – 667,102	1,000,058	1,000,068 max.
Lot Coverage (%)	18.7%	25%	45% max.
Floor Area Ratio (FAR)	70%	80%	80% max. w/Green Building incentives
No. of Buildings On-Site	4	5	N/A
Distance Between Buildings	N/A	70'	32' min.
Building Height (ft.)	130'	130'	130' max.
No. of Stories	8-story	8-story	N/A
Setbacks			
North	5 th - 456'	5 th - 20'	15' min.
West	Enterprise - 45'	Enterprise - 35'	15' min.
East	Adjacent lot - 20'	Adjacent lot - 10'	None
South	11 th - 120'	11 th - 120'	15' min.
Landscaping (sq. ft.)			
Total Landscaping	387,734 sf. (38% based on developed site area)	357,004 sf.	250,017 sf. (20% min.)
Frontage Width (ft.)	Enterprise Way = 45' 11 th = 15'	Same	15 ft. min.
Landscaping Buffer (ft.)	Enterprise Way = 45' 11 th = 15'	Same	10 ft. min.

	EXISTING	PROPOSED	REQUIRED/ PERMITTED
% Based on Floor Area	28%	Same	10% min.
% Based on Parking Lot	33.5%	Same	20% min.
Parking Lot Area Shading (%)	50% in 15 years	Same	50% min. in 15 years
Water Conserving Plants (%)	70% min.	Same	70% min.
Parking			
Total Spaces	2,805 spaces (1/300sf.)	3,217 spaces (1/300sf.)	3,200 min. (1/300sf.)
Standard Spaces	1,407	1,615	1,600
Compact Spaces/ % of Total	1,333 (48%)	1,602 (50%)	1,600 50% max.
Accessible Spaces	39	48	48 min.
Aisle Width (ft.)	26'	26'	26' min.
Bicycle Parking	145	187	187 min.
Stormwater			
Impervious Surface Area (s.f.)	1,000,876 sf.	1,031,606 sf.	---
Impervious Surface (%)	80.06%	82.5%	---

Starred items indicate deviations from Sunnyvale Municipal Code requirements.