DRAFT

ENVIRONMENTAL IMPACT REPORT

Murphy Ranch Residential Project

City of Milpitas

June 2007

PREFACE

The document has been prepared by the City of Milpitas as the Lead Agency, in conformance with the California Environmental Quality Act (CEQA). This Environmental Impact Report (EIR) provides environmental review appropriate for the approval of the proposed Murphy Ranch Residential Project.

Purpose of the EIR

In accordance with CEQA, this EIR provides objective information regarding the environmental consequences of the proposed project to the decision makers who will be considering and reviewing the proposed project. The CEQA Guidelines contain the following general information on the role of an EIR and its contents:

> **§15121(a). Informational Document**. An EIR is an informational document, which will inform public agency decision makers, and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR, along with other information that may be presented to the agency.
>
> **§15151. Standards for Adequacy of an EIR**. An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently considers environmental consequences. An evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

All documents referenced in this EIR are available for public review in the office of the Planning Department, 455 E. Calaveras Boulevard, Milpitas, California, on weekdays during normal business hours.

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SUMMARY

The project proposes construct up to 285 single-family attached dwelling units and 374 apartments on an approximately 22-acre property in the City of Milpitas.

The following is a brief summary of significant impacts and mitigation measures addressed within the body of this EIR. The complete project description and discusion of impacts and mitigation measures can be found in the Section II of this EIR.

Significant Impacts	Mitigation Measures
	Hydrology
Implementation of the project would result in an increase in the amount of stormwater runoff compared to existing conditions which will contribute to an existing deficiency in the capacity of the existing storm drainage system.	A 42-inch storm drain bypass line will be installed parallel to the existing 72-inch storm drain line pursuant to the City Stormdrain Master Plan to provide adequate capacity to convey stormwater runoff from the project site to the pump station. **Less Than Significant With Mitigation**
Construction activities will result in increased erosion which could cause the degradation of water quality within Coyote Creek and San Francisco Bay.	Burlap bags filled with drain rock will be installed around storm drains to route sediment and other debris away from the drains. 2. Earthmoving or other dust-producing activities would be suspended during periods of high winds. 3. All exposed or disturbed soil surfaces would be watered at least twice daily to control dust as necessary. 4. Stockpiles of soil or other materials that can be blown by the wind would be watered or covered. 5. All trucks hauling soil, sand, and other loose materials would be covered and all trucks would be required to maintain at least two feet of freeboard. 6. All paved access roads, parking areas, staging areas and residential streets adjacent to the construction sites would be swept daily (with water sweepers). 7. Vegetation in disturbed areas would be replanted as quickly as possible. 8. All unpaved entrances to the site would be filled with rock to knock mud from truck tires prior to entering City streets. A tire wash system may also be employed at the request of the City. 9. A Storm Water Permit will be administered by the Regional Water Quality Control Board. Prior to construction grading for the proposed land uses, the project proponent will file a “Notice of Intent” (NOI) to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP) which addresses measures that would be included in the project to minimize and control construction and post-construction runoff. Measures will include, but are not limited to, the aforementioned RWQCB mitigation. (see Page 34) **Less Than Significant with Mitigation**

Significant Impacts	Mitigation Measures
Vegetation and Wildlife	
Construction activities could result in the abandonment of active raptor nests.	1. Construction shall be scheduled to avoid the nesting season to the extent feasible. The nesting season for most birds, including most raptors, in the San Francisco Bay area extends from February through August. 2. If it is not possible to schedule demolition and construction between September and January, then pre-construction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. This survey shall be completed no more than 14 days prior to the initiation of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the ornithologist will inspect all trees and other possible nesting habitats immediately adjacent to the construction areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by construction, the ornithologist, in consultation with CDFG, will determine the extent of a construction-free buffer zone to be established around the nest, typically 250 feet, to ensure that raptor or migratory bird nests will not be disturbed during project construction. **Less Than Significant With Mitigation**
Implementation of the proposed project could result in a take of Burrowing Owls.	1. No Burrowing Owls would be evicted from burrows during the nesting season (February 1 through August 31). Eviction outside the nesting season may be permitted as a means to avoid take, pending evaluation of eviction plans and receipt of formal written approval from the CDFG authorizing the eviction. 2. A protected area 250 feet in radius, within which no activity will be permissible, will be maintained between project activities and nesting burrowing owls or individual resident owls. This protected area will remain in effect between February 1 and August 31, or at the CDFG discretion and based upon monitoring evidence, until any young owls are foraging independently. In the non-nesting season, a protected area 50 meters (165 feet) in radius, within which no new construction activity will be permissible, will be maintained between project activities and burrows occupied by Burrowing Owls. Any development within these protected areas would be approved beforehand by the CDFG. **Less Than Significant with Mitigation**

Significant Impacts	Mitigation Measures
Transporation	
Implementation of the proposed project would have a significant impact on the intersection of McCarthy Blvd/Tasman Drive by causing the intersection to fall from LOS D to LOS E during the AM Peak Hour.	The southbound lanes of McCarthy Boulevard will be re-striped, to the satisfaction of the City's Director of Public Works. The existing configuration is two left-turn lanes, one through lane, and one shared right/through lane. The shared right/through lane would changed to a designated right-turn only lane, allowing the intersection to operate at LOS D in the AM Peak Hour and LOS C in the PM Peak Hour. An overlap phase for the southbound right turn movement would also be included at the McCarthy Boulevard/Tasman Drive. **Less Than Significant with Mitigation**
Air Quality	
Implementation of the proposed project would result in sensitive receptors being exposed to toxic air contaminants due to the project's proximity to an existing pump station.	Prior to issuance of occupancy permits the pump station diesel engines will be upgraded to electric engines with backup emergency generators by the applicant, or at the City's option retrofitted, to meet the ATCM 2009 requirements for diesel emissions. The City of Milpitas staff will review and approve the retrofit of the existing engines or the purchase and installation of the new engines. **Less Than Significant with Mitigation**
Construction of the proposed project would result in short-term air quality impacts associated with dust generation.	The following dust control measures will be implemented during all construction phases: 1. Water all active construction areas at least twice daily and more often during windy periods. 2. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. 3. Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. 4. Sweep daily (preferably with water sweepers) all paved access roads on-site, parking areas and staging areas at construction sites. 5. Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets. 6. Hydroseed or apply non-toxic soil stabilizers to inactive construction areas. 7. Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.). 8. Limit traffic speeds on unpaved roads to 15 mph. 9. Install sandbags or other erosion control measures to prevent silt runoff to public roadways. 10. Replant vegetation in disturbed areas as quickly as possible. **Less Than Significant with Mitigation**

Cumulative Impacts

The proposed project will not result in any cumulative impacts.

Alternatives to the Proposed Project

A. NO PROJECT ALTERNATIVE

The CEQA Guidelines [§15126(d)4] require that an EIR specifically discuss a "no project" alternative, which should address both "the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project is not approved, based on current plans and consistent with available infrastructure and community services." Since the project site is a vacant lot with prior approval for industrial development, the alternative to the City approving the currently proposed project would be to maintain the site as is, or to develop the site under the existing industrial land use designation. If the project site were to remain vacant, there would be no impacts. The property is privately owned and it is likely, however, that the property owner will continue to pursue development of the land given its location in the urbanized area of Santa Clara County.

Development with industrial land uses could result in fewer impacts than the proposed project. The impact on the local roadway system would vary because the origin of the trips would be different. Because the City has more jobs then employed residents, many employees must commute from outside the City. Increasing the number of jobs in the City will increase the number of employees commuting from other cities and possibly have a more severe impact on local and regional traffic. The proposed project will place housing within close proximity to a major regional job center, which could possibly reduce commute distances for some employees. Assuming a 0.35 FAR, the industrial land use would generate approximately 2,338 daily trips[1]. Of these 2,338 daily trips, 339 trips would be in the AM Peak Hour and 362 would be in the PM Peak Hour. The proposed project will generate approximately 4,524 daily trips. Of these 4,524 daily trips, 362 AM Peak Hour Trips and 430 PM Peak Hour trips, therefore, the proposed project will generate more traffic than the assumed industrial land use.

Development of an industrial land use on-site would avoid the air quality impacts because no housing would be located adjacent to the existing City of Milpitas Bellew Storm Pump Station. Employees would not be on-site for a sufficient number of hours to be significantly impacted by the operation of the pump station.

The proposed project site is a vacant parcel in an industrial area of Milpitas that is currently underutilized. Development of the parcel with the approved industrial land uses or industrial/R&D at a higher density than previously approved would add more jobs to the City and add to the jobs/housing imbalance. While the .35 FAR discussed above would be similar to development in the area, new R&D development in north San José, Fremont, and Santa Clara has been approved at higher intensities in recent years. The proposed project would have a beneficial impact on the jobs/housing imbalance by increasing the housing supply in the City of Milpitas.

[1] Based on the Institute of Transportation Engineers Trip Generation Manual, 7th edition, using an average daily rate of 6.97 per 1,000 square feet of industrial development.

Conclusion: Implementation of the "No Project" alternative would avoid the significant traffic and air quality impacts identified in this EIR. The No Project alternative could, however, contribute to the jobs/housing imbalance in the City. This alternative does not meet any of the objectives of the proposed project.

B. REDUCED DENSITY ALTERNATIVE

Implementation of the proposed project would result in a significant LOS impact to the intersection of McCarthy Boulevard and Tasman Drive. Mitigation has been proposed to reduce this impact to a less than significant level. The impact, however, can be avoided by reducing the overall size of the project. *Hexagon Transportation Consultants* has calculated that the project would have to be reduced in size by 61 percent to avoid impacting the McCarthy/Tasman intersection. Possible reduction scenarios include eliminating all of the single-family units and 79 apartment units or eliminating all the apartment units and 64 single-family units.

In addition to avoiding the significant LOS impact, reduction of the total number of residential units would allow for more open space on the project site and greater setbacks between the residential units and the City of Milpitas Bellew Storm Pump Station. The setbacks would reduce the air quality impacts of the proposed project to a less than significant level.

Conclusion: Implementation of Alternative B would reduce and/or avoid the significant traffic and air quality impacts identified in this EIR. This alternative does not meet Objective 2 of the project, providing housing for a variety of income levels, because either the single-family units or the apartment units would need to be eliminated.

C. SITE DESIGN ALTERNATIVE

Implementation of the proposed project will place residential units within close proximity to the City of Milpitas Bellew Storm Pump Station. This station is operated by three 750 horsepower diesel engines. The exposure of future residents to the exhaust from these engines is concluded to be a significant air quality impact. The apartment development could be redesigned so that there is a greater setback between the pump station and the residences. Currently the parking structure is proposed to be located in the center of the apartment complex, which puts the residences within 120 feet of the pump station. By relocating the parking structure to the northwest corner of the site, the residences would be set back approximately 240 feet from the pump station. In addition, air handling systems could be designed to filter intake air to reduce exposure of diesel exhaust to residents[2].

Redesign of the apartment project and installation of air intake filters will reduce the impact to future residents caused by the pump station compared to the proposed project, but it will not reduce the impact to a less than significant level.

Conclusion: Implementation of Alternative C would reduce the significant air quality impacts identified in this EIR, but not to a less than significant level. This alternative meets all of the project objectives.

[2] Donald Ballanti, Certified Meteorologist, May 2006.

D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines state that an EIR shall identify an environmentally superior alternative. Based on the above discussion, the environmentally superior alternative is Alternative B, because all of the project's significant environmental impacts would be avoided. Alternative B would not meet all of the objectives of the proposed project.

Areas of Known Controversy

There are no known areas of controversy for this project.

SECTION 1.0 INTRODUCTION AND PURPOSE

1.1 OVERVIEW

The proposed project site is a 21.73-acre property was once part of a larger property known as the Shaughnessy-Murphy Ranch. Prior to the early 1990s, the ranch was actively farmed and had several historic buildings[1] including housing and structures associated with the ranch operations. In 1993 the buildings were removed and much of the larger ranch property was developed with industrial buildings. The project site remained vacant and is currently an undeveloped parcel that is regularly disked. Nothing has been developed on the project site since the ranch operations ceased.

The project proponent is proposing to develop the approximately 22-acre parcel with 659 dwelling units and associated open space areas. This EIR has been prepared to analyze the proposed Murphy Ranch Residential Project.

1.2 PROJECT LOCATION

The proposed project site is a vacant property located at the southwest corner of Technology Drive and Murphy Ranch Road in the City of Milpitas. The project site is bounded by Technology Drive, Murphy Ranch Road, Coyote Creek, and the City of Milpitas Murphy Ranch Storm Pump Station. (See Figures 1 and 2)

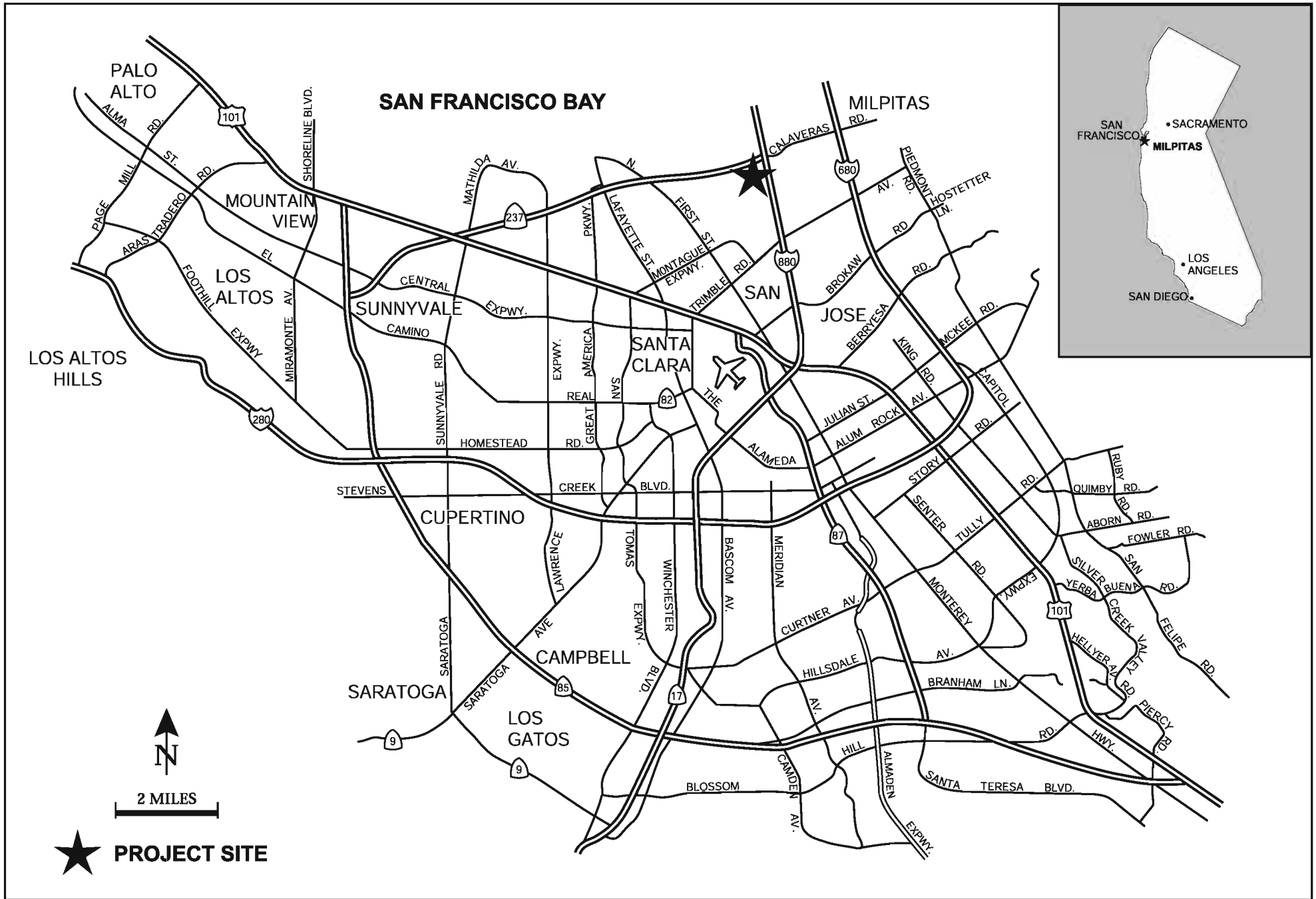
1.3 STATEMENT OF PURPOSE AND NEED/PROJECT OBJECTIVES

Pursuant to CEQA Guidelines Section 15124 the Lead Agency must identify the purpose of the EIR and the discretionary actions required by the Lead Agency. The purpose of this EIR is stated in the project objectives below. The discretionary actions required are listed under Section I.D., *Uses of the EIR*.

The stated objectives of the project proponent are to:

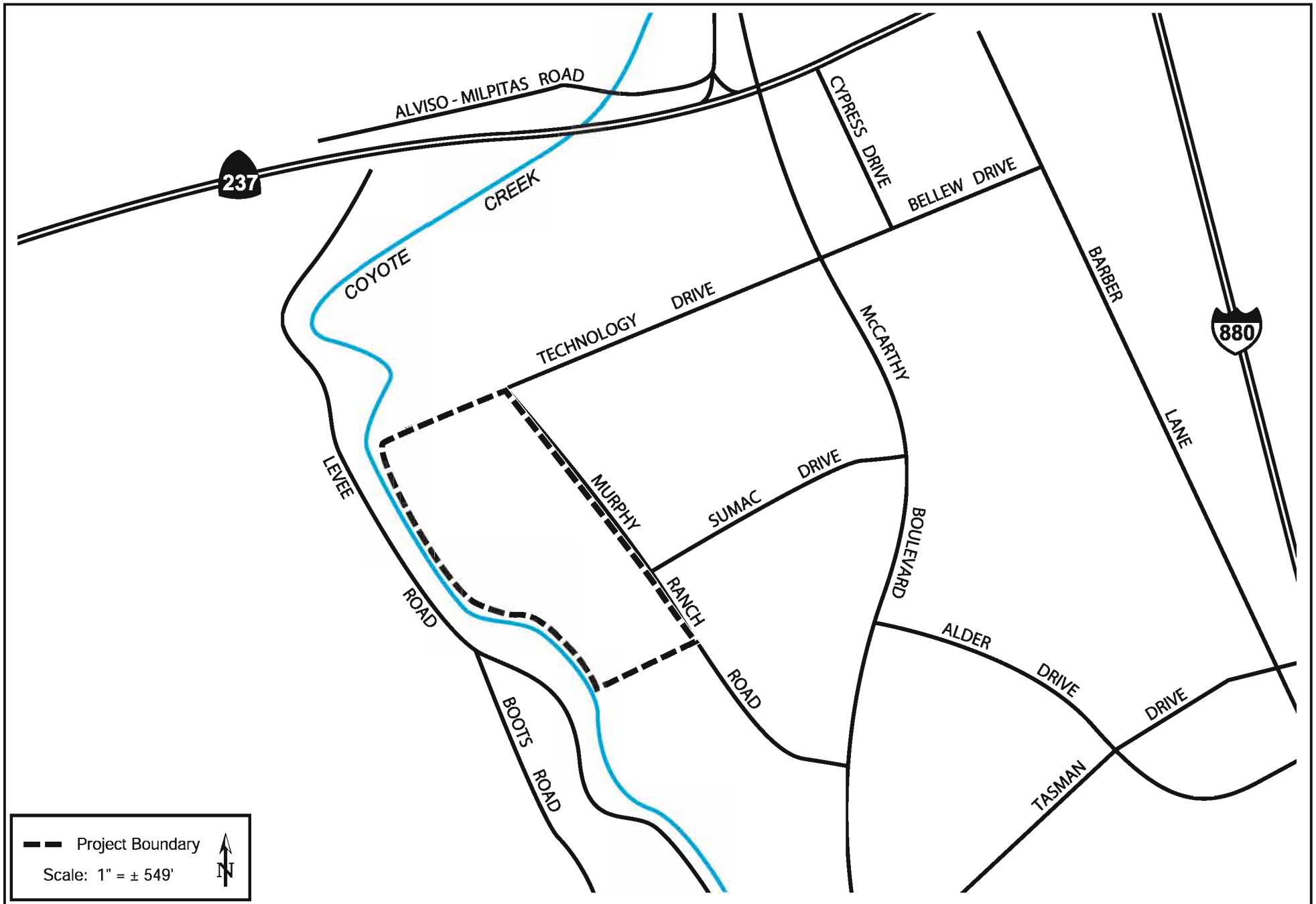
1. Develop a well-designed, economically feasible residential community consisting of for-sale townhouses and rental apartments, which incorporate smart growth elements by being pedestrian-oriented and located close to employment, retail, and mass transit facilities.
2. Provide needed housing in the City of Milpitas, including housing for various income levels to aid the City in providing for its regional fair share housing needs and attaining a jobs/housing balance.
3. Provide public open space and access to the Coyote Creek Regional Trail System.
4. Provide the City of Milpitas with needed rental and for-sale housing while utilizing existing infrastructure and without eliminating habitat or open space areas within the City.

[1] The historic buildings previously on-site were eligible for the National Register.



REGIONAL MAP

FIGURE 1



VICINITY MAP

FIGURE 2

1.4 USES OF THE EIR

This Environmental Impact Report (EIR) is intended to provide the City of Milpitas, other public agencies, and the general public with the relevant environmental information needed in considering the proposed project.

The City of Milpitas anticipates that discretionary actions by the City, including but not limited to the following, may need to rely upon this EIR:

1. General Plan Amendment
2. Rezoning
3. Tentative Map
4. Site and Architectural Review
5. Planned Development Permit
6. Any additional necessary approvals for implementation of development of the project

SECTION 2.0 DESCRIPTION OF THE PROPOSED PROJECT

The project will consist of two separate developments, hereinafter referred to as Murphy Ranch South and Murphy Ranch North. The Murphy Ranch South development will be on the southern portion of the project site and will consist of 285 for-sale single-family attached dwelling units (townhouses) on 14.15 acres. The Murphy Ranch North development will be on the northern portion of the project site and will consist of 374 rental apartment units on 7.58 acres. The two developments are described in detail below. Site plans for both developments are shown on Figures 3 and 4.

Murphy Ranch South Development

The proposed Murphy Ranch South Development will be attached three-story, three-bedroom townhouses with attached two car garages.

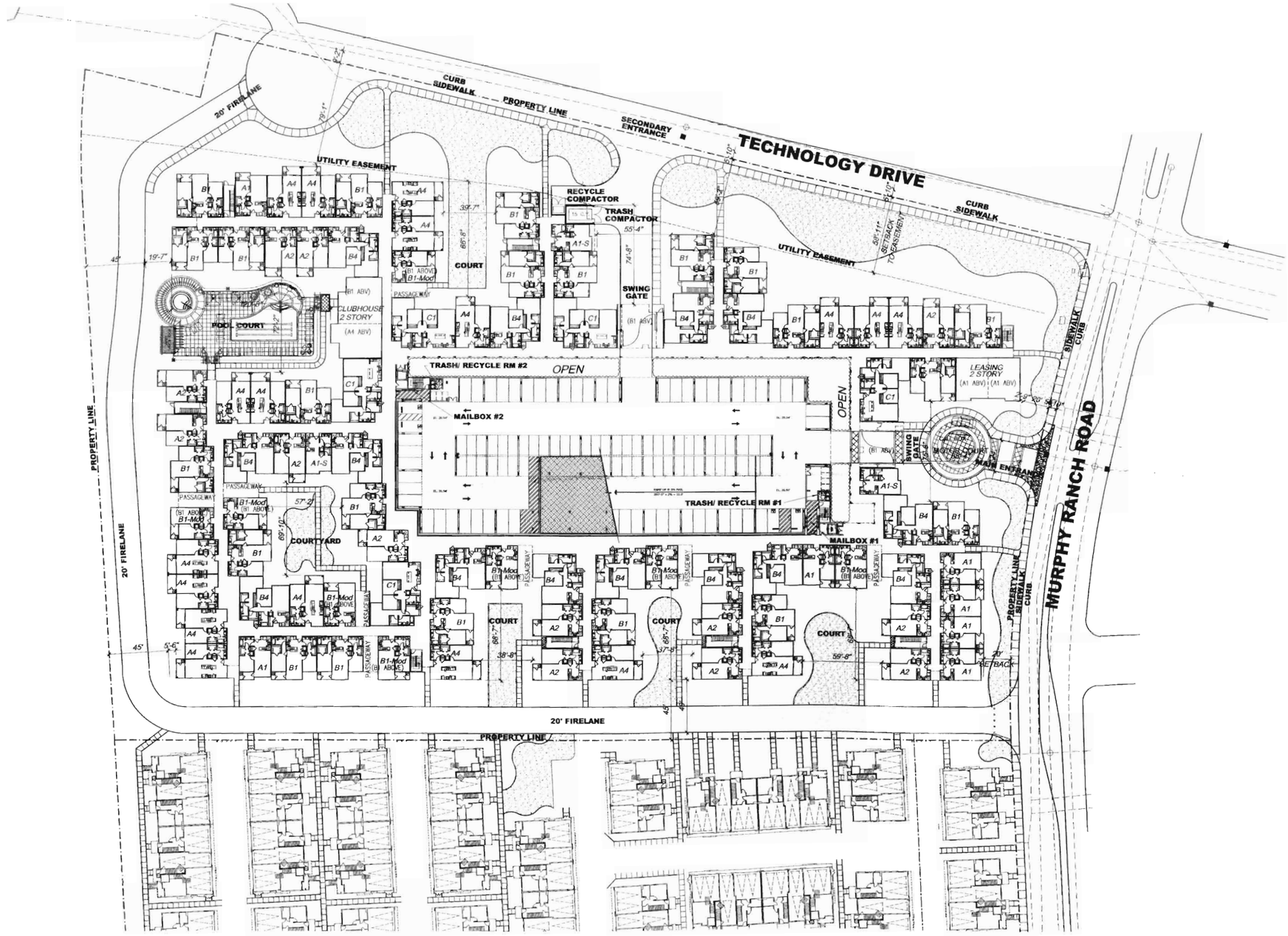
The Murphy Ranch South Development will have a total of 685 parking spaces. The City of Milpitas Municipal Code requires 2.0 parking spaces per townhouse unit and makes no distinction between parallel and tandem spaces. In addition, the project must include guest parking equivalent to 20 percent of the total required resident parking. To meet City requirements, the project will provide 685 parking stalls, which exceeds the City's requirement by one space. Of the 685 parking spaces, 570 will be private parking for residents in two-car garages attached to each dwelling unit. There are three different floor plan options for the proposed townhouses. Two of the floor plans provide a standard two-car garage; the third floor plan provides a tandem two-car garage. The remaining 115 parking spaces will be guest parking located on the interior circulation roads (Streets A, B and C) of the site and in surface parking stalls.

The internal circulation road is accessed by two driveways on Murphy Ranch Road. These driveways connect to the main circulation road which is 36 feet wide. The main circulation road does not provide direct access to any of the proposed residences (i.e., private driveways are not entered from it). Several secondary roads provide access to the individual townhouses off the main circulation road. The secondary access roads will be 20 feet wide.

The residential buildings fronting Murphy Ranch Road will be set back from the roadway a minimum of 10 feet. Residential buildings on the north and west boundaries of the project site will be set back 10 and 20 feet from the Murphy Ranch North Development property line and from Coyote Creek respectively. The developer is proposing to improve 1.1-acres on the southern portion of the site adjacent to the Hetch-Hetchy right-of-way as a public park. The park will separate the residential development from the adjacent industrial property. The project proponent will offer to dedicate the park to the City. If the City does not accept dedication of the park, the park will be maintained by a homeowners association. No public parking is proposed for the park. The project will not encroach on the Hetch-Hetchy right-of-way. In addition to the public park, the townhouses will have a communal pool and spa located in the center of the project site, adjacent to Street B.

SITE PLAN

FIGURE 3



SITE PLAN

FIGURE 4

Murphy Ranch North Development

The apartments will consist of eight studio units, 166 1-bedroom units, 180 2-bedroom units, and 20 3-bedroom units. The apartment buildings will be four stories with a five-story parking garage in the interior of the site. Most of the residential buildings are clustered around open courtyards intended for recreational use. Other recreational amenities include a two-story clubhouse and a pool.

The Murphy Ranch North development is proposed with 760 parking stalls in the five-story parking garage which includes roof level parking for a total of six parking levels. The City of Milpitas Municipal Code requires 1.0 parking stall per studio unit, 1.5 parking stalls per unit for 1-bedroom apartments and 2.0 parking stalls per unit for 2- and 3-bedroom apartments. In addition, the project must include guest parking equivalent to 15 percent of the total required resident parking. The project will provide 661 resident parking stalls and 99 guest parking stalls within the parking structure, which exceeds the City's requirement by four spaces. An additional 24 parking spaces are proposed on Technology Drive, but are not counted toward the parking requirement because they will be located on a public street.

The parking structure will have two entrances controlled by gates. The main entrance will be off of Murphy Ranch Road. This driveway will include a circular motor court with a call box to allow visitors to request access into the parking structure. The secondary access will be from Technology Drive and will serve residents only.

The residential buildings fronting Murphy Ranch Road will be set back from the roadway a minimum of 20 feet. Residential buildings on the south and west boundaries of the project site will be set back 45 feet from the boundary with the Murphy Ranch South Development and from Coyote Creek. This 45-foot setback includes a 20 foot wide fire lane that wraps around the apartment complex (on the south and west boundaries) connecting Murphy Ranch Road to Technology Drive. A 59-foot setback is proposed along the northern property line to accommodate the existing utility easement.

General Plan/Zoning

The entire project site is currently designated *Industrial Park* and zoned *MP-Industrial Park.* The project proposes a General Plan Amendment to *Multi Family High Density* and a zoning change to a Planned Development that incorporates the *R3 – Multi-Family High Density* for the townhouse portion of the site (Murphy Ranch South) and *R4 – Multi-Family Very High Density* for the apartment portion of the site (Murphy Ranch North). Necessary approvals for development of the project include approval of the aforementioned General Plan Amendment and zoning change as well as approval of a tentative subdivision map. The project will also require Site and Architectural Review.

SECTION 3.0 CONSISTENCY WITH ADOPTED PLANS AND POLICIES

In conformance with Section 15125(d) of the CEQA Guidelines, the following section discusses the consistency of the proposed project with relevant adopted plans and policies.

3.1 Regional Plans and Policies

Bay Area 2000 Clean Air Plan

The 1982 Bay Area Air Quality Plan and 2000 Clean Air Plan (2000 CAP) establish regional policies and guidelines to meet the requirements of the federal Clean Air Act, as amended through 1990. The Bay Area is a non-attainment area for ozone and PM_{10}, since federal standards are exceeded for these pollutants.

The Bay Area 2000 Clean Air Plan also identifies measures and improvements to help the Bay Area comply with the State's ozone standard, and is the current regional strategy for improving air quality. The Plan proposes the adoption of transportation, mobile source and stationary source controls on a variety of pollutant sources to offset population growth and provide improvement in air quality. The consistency of the proposed project with this regional plan is primarily a question of the consistency with population/employment assumptions utilized in developing the Plan. The 2000 CAP was based on the City's General Plan in effect at the time the CAP was approved and the Association of Bay Area Governments (ABAG) *Projections '98*.

Consistency: As discussed in Section II.H., *Transportation and Circulation*, the project will increase the amount of traffic on local streets and freeways compared to the existing land use. This increase in traffic would be a source of increased air pollution emissions, which would contribute to exceedences of regional air quality standards. Construction activities associated with future development would also generate temporary air quality pollution impacts. The provision of a significant number of housing units in close proximity to the job centers of north Santa Clara County and to existing and planned transit facilities is compatible with the overall goals and policy direction of the 2000 CAP. However, since this site was not designated residential, the additional housing units reflected in the proposed General Plan Amendment is not consistent with the current assumptions reflected in the adopted 2000 CAP.

State Water Quality Control Board National Pollutant Discharge Elimination System Permit

The Federal Clean Water Act requires local municipalities to implement measures to control construction and post-construction pollution entering local storm drainage systems to the maximum extent practicable. To comply with the requirements of the Federal Clean Water Act, the State Water Resources Control Board (SWRCB) implemented a National Pollution Discharge Elimination System (NPDES) permit for the Santa Clara Valley. Subsequent to implementation of the permit, the San Francisco Regional Water Quality Control Board (RWQCB) issued a Municipal Storm Water NPDES Permit to fifteen co-permittees. The fifteen co-permittees are the City of San José, twelve other municipalities within the Santa Clara Basin watershed area, the County of Santa Clara, and the Santa Clara Valley Water District (SDVWD). Two programs, the Nonpoint Source Pollution Program and the Santa Clara Valley Urban Runoff Pollution

Prevention Program (SCVURPPP), have been implemented under the NPDES permit to regulate construction and post-construction runoff.

Nonpoint Source Pollution Program

In 1988 the SWRCB adopted the Nonpoint Source Management Plan in an effort to control nonpoint source pollution in California. In December 1999, the Plan was updated to comply with the requirements of Section 319 of the Clean Water Act and Section 6217 of the Coastal Zone Act Reauthorization Amendment of 1990. The Nonpoint Source Management Program requires individual permits to control discharge associated with construction activities. The Nonpoint Source Program is administered by the RWQCB under the NPDES General Permit for Construction Activities. Projects must comply with the requirements of the Nonpoint Source Program if:

- they disturb one or more acres of soil; or
- if they disturb less than one acre of soil but are part of a larger development that, in total, disturbs one acre or more of soil.

The NPDES General Permit for Construction Activities requires the developer to submit a Notice of Intent (NOI) to the RWQCB and to develop a Stormwater Pollution Prevention Plan (SWPPP) to control discharge associated with construction activities.

Consistency: The proposed development would increase storm water runoff, but development on the site will conform to the requirements of the City of Milpitas Stormwater C.3 Guidebook and the countywide National Pollutant Discharge Elimination System (NPDES) permit regarding erosion and sedimentation control during construction (See Section II.D., *Hydrology*).

Santa Clara Valley Urban Runoff Pollution Prevention Program

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) was developed by the RWQCB to assist co-permittees in implementing the provisions of the NPDES permit. This program was also designed to fulfill the requirements of Section 304(1) of the Federal Clean Water Act, which mandated that the Environmental Protection Agency develop NPDES application requirements for storm water runoff. The Program's Municipal NPDES storm water permit includes provisions requiring regulation of storm water discharges associated with new development that creates or adds 10,000 square feet or more of impervious surfaces and development of an area-wide watershed management strategy. The permit also identifies recommended actions for the preservation, restoration, and enhancement of the San Francisco Bay Delta Estuary.

Consistency: As discussed in Section II.D., *Hydrology,* the proposed project includes applicable Best Management Practices to ensure that there is no increase in erosion or sedimentation that could impact local waterways. The implementation of erosion control and storm water management practices during and after project construction will be in accordance with the SCVURPPP, NPDES permit requirements, and the City's Stormwater C.3 Guidebook. The proposed project would not result in an impact upon the conservation and restoration of streams and riparian zones or areas of special or unique ecological significance. For these reasons, the proposed project would be consistent with the SCVURPPP and NPDES permit process.

Santa Clara County Congestion Management Program

The Santa Clara Valley Transportation Authority (SCVTA) oversees the Santa Clara County *Congestion Management Program* (CMP), last updated in July 1995. The relevant State legislation requires that all urbanized counties in California prepare a CMP in order to obtain each county's share of increased gas tax revenues. The CMP legislation requires that each CMP contain five mandatory elements: 1) a system definition and traffic level of service (LOS) standard element; 2) a transit service and standards element; 3) a transportation demand management and trip reduction element; 4) a land use impact analysis element; and 5) a capital improvement element. Santa Clara County's CMP includes the five mandated elements and three additional elements, including a county-wide transportation model and database element, an annual monitoring and conformance element, and a deficiency plan element.

The Santa Clara County CMP includes intersections within Milpitas that are identified as CMP intersections. The CMP intersections in the immediate vicinity of the project site that would be affected by future project traffic would include Abel Street/SR 237, Milpitas Blvd/SR 237, and McCarthy Blvd/O'Toole and Montague Expressway.

The CMP also includes freeway segments. The five CMP freeway segments analyzed include:

- I-880: Dixon Landing Road to SR 237/Calaveras Boulevard
- I-880: SR 237/Calaveras Boulevard to Great Mall Pkwy/Tasman Drive
- I-880: Great Mall Pkwy/Tasman Drive to Montague Expressway
- I-880: Montague Expressway to Brokaw Road
- SR 237: Zanker Road to McCarthy Boulevard

Consistency: As discussed in Section II.H, *Transportation and Circulation*, the proposed project will comply with the provisions of the CMP.

3.2 Local Plans and Policies

City of Milpitas General Plan

The Milpitas General Plan is a comprehensive, long-term plan that represents the City's official development policy. The following is a summary of major strategies and policies that apply to the proposed project.

Land Use Element

The Land Use Element correlates land use policies contained in the other elements of the Milpitas General Plan. Land Use designations on the General Plan diagram and building densities and intensity standards contained in the Land Use Element, provide a basis for determining future traffic conditions and the need for capital facilities, such as street improvements, parks, and schools.

Policy 2.a-I-1: New developments should not exceed the building intensity limits established in the General Plan for *MFVHD (Multi-Family Very High Density).*[2]

[2] Unless permitted pursuant to access-mandated density bonuses for affordable housing as shown on page 2-11 of the Milpitas General Plan.

Policy 2.a-I-2: Promote development within the incorporated limits which acts to fill-in the urban fabric rather than providing costly expansion of urban services into outlying areas.

Policy 2.a-I-12: Use zoning for new residential developments to encourage a variety and mix in housing types and costs.

Policy 2.a-I-13: Geographically disperse similar development types throughout the community so that denser districts are not concentrated within a single area of the City.

Policy 2.b-I-2: Consider locating housing in close proximity to industrial developments where they can be served by existing city services and facilities.

Policy 2.b-I-3: Provide housing opportunities in Milpitas by meeting the City's regional fair-share housing obligations.

Consistency: The proposed building intensity is consistent with General Plan policies for housing of this type at this location. The proposed project will develop an underutilized parcel at an infill location within the City limits and would be served by existing city services and facilities. This development would help to disperse housing throughout the City. It will provide a mix of single-family attached and high density housing to serve a variety of housing needs in close proximity to existing and planned jobs and will help the City meet its fair share housing obligation. The project, therefore, is consistent with the aforementioned policies of the General Plan Land Use Element.

Policy 2.a-I-3: Encourage economic pursuits which will strengthen and promote development through stability and balance.

Policy 2.a-I-5: Maintain policies that promote a strong economy which provides economic opportunities for all Milpitas residents within existing environmental, social, fiscal, and land use constraints.

Policy 2.a-I-7: Provide opportunities to expand employment, participate in partnerships with local businesses to facilitate communication, and promote business retention.

Policy 2.b-I-2: Consider locating housing in close proximity to industrial developments where they can be served by existing city services and facilities.

Consistency: Based on the City of Milpitas Staff Report to City Council the proposed conversion of industrial land to residential use would discourage economic development growth in the City by removing prime industrial sites for future high-tech value added companies and add land uses that are an economic drain on the City. The conversion of industrial land to residential uses would also diminish economic opportunities for Milpitas residents because sites for future jobs would be replaced by housing. Job expansion at nearby high tech firms would be discouraged if they anticipate complaints from nearby residents. Locating residents adjacent to some of Milpitas' most important industrial firms will discourage business expansion and business retention. Lastly, the proposed residential project is not located within easy walking

distance from parks, schools, libraries, neighborhood commercial uses, or day care. The project, therefore, is inconsistent with the aforementioned polices of the General Plan Land Use Element.

Circulation Element

The Circulation Element is systematically and reciprocally correlated with the Land Use Element, which includes policies related to the physical framework for development that the circulation system is designed to serve. It is also related to the recreational plans and policies identified in the Open Space and Environmental Conservation Element.

Policy 3.a-I-1: Strive to maintain CMP LOS standards and goals for the CMP Roadway System in Milpitas.

Consistency: As stated in Section II.C., *Transportation*, the project will comply with the standards in the CMP. The CMP also encourages housing at infill locations, near job centers. This project supports that goal.

Open Space & Environmental Conservation Element

The purpose of the Conservation Element is to assure the conservation, development, and use of natural resources including water, forests, soils, rivers, fisheries, wildlife, minerals, and other natural resources. Similarly, the purpose of the Open Space Element is to assure the continued availability of land for the managed production of resources, to protect the enjoyment of scenic beauty and ensure provision of recreation, to identify and preserve lands whose indiscriminate development could compromise public health and safety, and to preserve natural resources.

Policy 4.a-I-1: Provide five acres of neighborhood and community parks for every 1,000 residents outside of the Midtown Specific Plan Area, and 3.5 acres of special use parks for every 1,000 residents within the Midtown Specific Plan Area.

Policy 4.a-I-2: For areas outside the Midtown Specific Plan Area, require land dedication or in lieu fees equivalent to the five acres/1,000 resident standard, but allow credit for private open space for up to two acres/1,000 residents for private open space provided in accordance with the criteria specified in the Subdivision Regulations.

Policy 4.d-P-1: Implement a comprehensive municipal stormwater pollution-prevention program in compliance with requirements of the Water Board's stormwater NPDES permit.

Policy 4.d-P-8: Applicable projects shall incorporate facilities (BMPs) to treat stormwater before discharge from the site. The facilities shall be sized to meet regulatory requirements.

Policy 4.d-P-12: Construction sites shall incorporate measures to control erosion, sedimentation, and the generation of runoff pollutants to the maximum extent practicable. The design, scope and location of grading and related activities shall be designed to cause minimum disturbance to terrain and natural features. (Title II, Chapter 13

of the Municipal Code includes requirements for control of erosion and sedimentation during grading and construction.)

Consistency: The proposed project, which is outside the Midtown Specific Plan area, will comply with the City's residential park requirement (see Section III., *Public Facilities and Services* of this document) and the provisions of the NPDES permit (see Section II.D., *Hydrology* of this document). The project, therefore, is consistent with the Open Space Element of the General Plan.

Seismic and Safety Element

The purpose of the Seismic and Safety Element is to protect the community from any unreasonable risks associates with the effects of seismic hazards identified pursuant to Chapter 7.8 of the Public Resources Code and other geologic hazards.

Policy 5.a-I-3: Require projects to comply with the guidelines prescribed in the City's Geotechnical Hazards Evaluation manual.

Consistency: The proposed project will comply with the requirements of the Uniform Building Code for Seismic Zone 4 (see Section II.C., *Geology and Soils* of this document) which addresses all the geotechnical hazards outlined in the City's *Geotechnical Hazards Evaluation Manual*. The project will comply with the Seismic Safety Element of the General Plan.

Noise Element

The Noise Element provides an understanding of existing and future noise conditions in the Planning Area, establishes a basis for evaluating potential noise level impacts on future development, and includes policy statements to guide public and private planning to attain and maintain acceptable noise levels.

Policy 6-I-4: Where actual or projected rear yard and exterior common open space noise exposure exceeds the "normally acceptable" levels for new single-family and multi-family residential projects, use mitigation measures to reduce sound levels in those areas to acceptable levels.

Policy 6-I-5: All new residential development (single family and multi-family) and lodging facilities must have interior noise levels of 45 dB DNL or less. Mechanical ventilation will be required where use of windows for ventilation will result in higher than 45 dB DNL interior noise levels.

Policy 6-I-13: Restrict the hours of operation, technique, and equipment used in all public and private construction activities to minimize noise impact. Include noise specifications in requests for bids and equipment information.

Consistency: As discussed in Section II.J., *Noise*, the proposed project will comply with the Noise Element of the General Plan.

4.1 LAND USE

4.1.1 Existing Setting

The following discussion identifies the existing conditions on and adjacent to the proposed project site.

Existing Land Use and Zoning

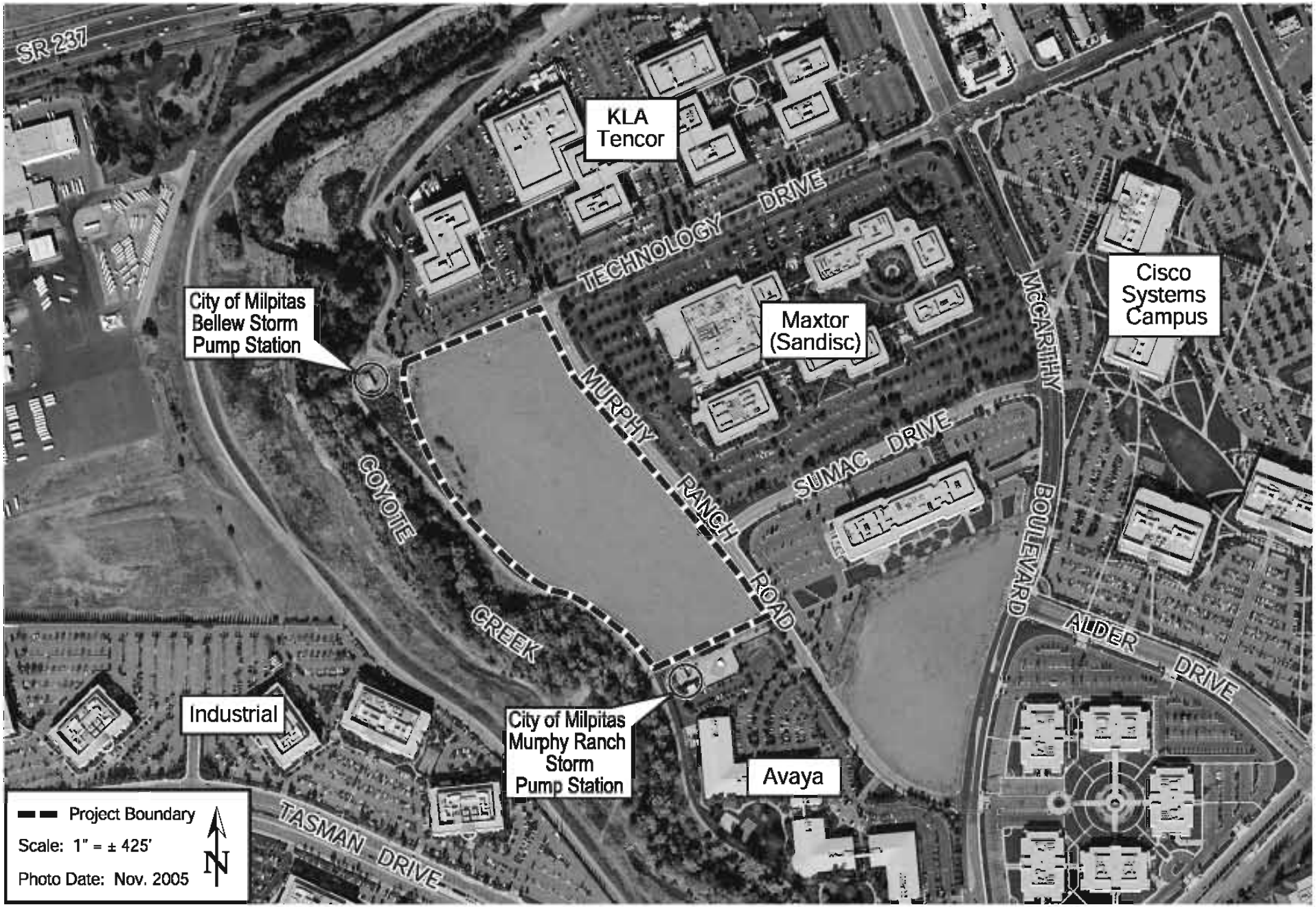
The project site is an approximately 22-acre property located on the west side of Murphy Ranch Road between Technology Drive and McCarthy Boulevard in the City of Milpitas. The site is currently a vacant dirt lot and has been since 1993 when the Shaughnessy-Murphy Ranch house was demolished and the agricultural lands cleared (see Section II.G., *Cultural Resources*).

The entire project site is currently designated *Industrial Park* and zoned *MP-Industrial Park.* Land uses allowed under the *Industrial Park* designation include research, professional, packaging, and distribution facilities in a park-like setting, free from noise, odor, and other such nuisances.

Surrounding Land Uses

The project site is bounded on the west by Coyote Creek. The creek is separated from the project site by a dense riparian corridor and a 10 foot tall earthen levee (as measured from the ground surface of the project site) located within the Santa Clara Valley Water District (SCVWD) right of way. There is a creek trail located on the top of the levee. The centerline of the creek is the Milpitas City boundary with San José. West of the creek is a vacant parcel and an industrial park. To the north of the project site is Technology Drive and the City of Milpitas Bellew Storm Pump Station. On the north side of Technology Drive is the KLA Tencor industrial park which is comprised of five two-story office/industrial buildings and a surface parking lot. The east side of the project site is bounded by Murphy Ranch Road. On the east side of Murphy Ranch Road is the Maxtor industrial park[3], Sumac Drive, and a vacant lot. The Maxtor property contains five five-story office/industrial buildings and a surface parking lot. The southern boundary of the site is adjacent to the Hetch-Hetchy right-if-way. Immediately south of the Hetch-Hetchy right-of-way is the City of Milpitas Murphy Ranch Storm Pump Station, a Prudential Insurance office, and the Avaya industrial park. The Prudential property contains one one-story office building and the Avaya property is comprised of three two-story office/industrial park buildings, a surface parking lot, and extensive landscaping and open space areas. (see Figure 5)

[3] The Maxtor property is currently owned by Seagate and is occupied, in part, by SanDisk. For the purposes of this analysis, the property will be referred to as the Maxtor property.



AERIAL PHOTOGRAPH AND SURROUNDING LAND USES

FIGURE 5

4.1.2 Land Use Impacts

4.1.2.1 Thresholds of Significance

For the purposes of this EIR, a land use impact is considered significant if the project would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with an applicable habitat conservation plan or natural community conservation plan;
- Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural lands;
- Conflict with existing zoning for agricultural use, or a Williamson Act Contract;
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use;
- Induce substantial population growth in an area, either directly or indirectly;
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.1.2.2 Policy Conflicts

As discussed is Section I.F., *Consistency with Adopted Plans and Policies*, the proposed project would discourage economic development growth in the City by removing prime industrial sites for future high-tech value added companies and add land uses that are an economic drain on the City. The conversion of industrial land to residential uses would also diminish economic opportunities for Milpitas residents because sites for future jobs would be replaced by housing. Job expansion at nearby high tech firms could be discouraged if the businesses anticipate complaints from nearby residents. Locating residents adjacent to some of Milpitas' most important industrial firms may discourage business expansion and business retention. Lastly, the proposed residential project is not located within easy walking distance of parks, schools, libraries, neighborhood commercial uses, or day care. The project, therefore, is inconsistent with polices 2.a-I-3, 2.a-I-5, 2.a-I-7, and 2.b-I-2 of the General Plan Land Use Element.

The project, as proposed, is inconsistent with polices 2.a-I-3, 2.a-I-5, 2.a-I-7, and 2.b-I-2 of the General Plan Land Use Element. The project's nonconformance with these policies would not result in a significant environmental impact. **(Less Than Significant Impact)**

4.1.2.3 Land Use Conflicts

Land use conflicts can arise from two basic causes: 1) a new development or land use may cause impacts to persons or the physical environment in the vicinity of the project site or elsewhere; or 2) conditions on or near the project site may have impacts on the persons or development

introduced onto the site by the new project. Both of these circumstances are aspects of land use compatibility. Potential incompatibility may arise from placing a particular development or land use at an inappropriate location, or from some aspect of the project's design or scope. Depending on the nature of the impact and its severity, land use compatibility conflicts can range from minor irritations and nuisance to potentially significant effects on human health and safety. The discussion below distinguishes between potential impacts *from* the proposed project *upon* persons and the physical environment, and potential impacts *from* the existing surroundings *upon* the project itself.

4.1.2.4 Impacts to the Project

Implementation of the proposed project would place a residential development in an existing industrial area and adjacent to a diesel powered pump station. Due to the size of the diesel powered engines (three 750 horse power engines) that power the pump station, the amount of exhaust generated by these engines could result in long-term impacts to nearby residents. See Section II.I., *Air Quality* for a complete discussion.

The businesses that surround the project site are industrial/office with no outdoor operations or storage. The Avaya Industrial Park to the south of the project site does, however, have a two-bay loading dock on the north end of their property that faces the project site.

Implementation of the proposed project would place a residential development in an industrial area and within one mile of several hazardous materials users. See Section F, *Hazards & Hazardous Materials* for a complete discussion.

4.1.2.5 Open Space Impacts

The proposed project site has been undeveloped for the last 13 years. It is not designated in the City's General Plan for open space; it is planned for urban development. The site is privately owned but it functions as visual open space, as does the vacant parcel to the southeast of the project site. The only publicly accessible open space in the project area is the creek trail on the top of the Coyote Creek levee. Development of the project site will not preclude use of the Coyote Creek trail because the site is private property with no designated access to the trail. In addition, the trail can be accessed through the Hetch-Hetchy right of way, the proposed park at the south end of the project site, and the pump station right of way north of the project site[4]. Therefore, implementation of the proposed project would result in the loss of private land that is visual open space, but will not result in a loss of usable public open space, or land planned by the adopted General Plan as permanent open space.

Implementation of the proposed project will have a less than significant impact on open space. **(Less Than Significant Impact).**

[4] While there is no designated public access through the Hetch Hetchy right-of-way or the pump station right-of-way, there is no fencing or other barriers to prevent the public from accessing the trail through these facilities.

4.1.2.6 Agricultural Impacts

The proposed project site was used as farmland until 14 years ago when the site was cleared. Because the site is still vacant, the land may be viable farmland. It is, however, smaller than is generally found among farms in the County. The site is not designated by the California Resources Agency as Farmland of any type, and is not the subject of a Williamson Act contract.

While the project site was designated Unique Farmland[5] in the City's General Plan in 1992, agricultural operations on the property ceased in 1993 and since that time the City has approved the site for industrial development. The property is currently designated *Industrial* Park in the City's General Plan and zoned *MP-Industrial* Park. Any future use of the property for active agriculture is unlikely.

Because the project will not conflict with existing agricultural zoning or a Williamson Act contract, or convert prime farmland to non-agricultural uses, implementation of the proposed project will have a less than significant impact on farmland. **(Less Than Significant Impact)**

4.1.2.7 Population and Housing Impacts

The jobs/housing ratio quantifies the relationship between the number of housing units required as a result of local jobs and the number of residential units available in the City. When the ratio reaches 1.0, a balance is struck between the supply of local housing and local jobs. The jobs/housing ratio is determined by dividing the number of local jobs by the number of employed residents that can be housed in local housing.

According to the Association of Bay Area Governments (ABAG) *Projections 2005*, the population in the year 2000 in the City of Milpitas's Sphere of Influence was 62,810 in 17,167 households. For 2020, the projected population is 82,400 in 22,740 households. The average number of persons per household in Milpitas in 2000 was 3.47.

The City of Milpitas is a job-rich city, and one of the fastest growing employment centers in Santa Clara County. Although Milpitas had a deficiency of jobs per employed resident in 1980, the City achieved a ratio of 1.34 jobs per employed resident in the year 2000. Despite this increase in jobs, only 21% of the workers in Milpitas actually live in the City.[6]

The proposed project would construct 659 residential units on the 22 acre site. The average household size in Milpitas is currently 2.7 residents per unit. Therefore, the proposed project is expected to provide housing for approximately 1,779 residents, at a density of 30 dwelling units/acre. (Since many of the units are multi-family and 176 are studio and one-bedroom units, this number may be conservatively high)

The potential increase of more than 1,779 residents would add to the City's population by approximately three percent. This increase, however, represents an incremental portion of the

[5] Unique Farmland refers to land of lesser quality soils used for the production of specific economic value crops.
[6] Milpitas General Plan, Land Use Element, 2.3. March 19, 2002.

19,590 new residents in Milpitas predicted by the year 2020 in the report *Projections 2005*. Therefore, the proposed project would induce substantial population growth in the project area.

The proposed project would create additional residential development and will incrementally improve the jobs/housing balance in the City. Providing housing opportunities for more of the City's workers may help to ease overall traffic congestion, commute times, and regional air pollution levels. The population increase from the proposal represents a less than significant impact.

Since the project site has not been used for residential purposes in the past, the proposed project will not displace existing housing or people.

Implementation of the proposed project would help improve to the City's jobs/housing imbalance. **(Less Than Significant Impact)**

4.1.3 Mitigation and Avoidance Measures for Land Use Impacts

No mitigation is required or proposed.

4.1.4 Conclusion

Implementation of the proposed project will have a less than significant land use impact. (Less Than Significant Impact)

4.2 VISUAL AND AESTHETICS

4.2.1 Existing Setting

The project site is approximately 22-acres located on the west side of Murphy Ranch Road between Technology Drive and McCarthy Boulevard in the City of Milpitas. The site is currently a vacant dirt lot (see Photo 1). Coyote Creek, which is west of the site, flows between elevated levees approximately 10 feet tall. While the levees are covered only with ground cover, the riparian corridor within the levees is densely vegetated with very large trees, and both the riparian vegetation and the levee are visible from Murphy Ranch Road and the surrounding land uses. North of the project site are Technology Drive and the City of Milpitas Bellew Storm Pump Station. Technology Drive is a two-lane public street with no sidewalks or landscaping west of Murphy Ranch Road. The pump station is housed in a small concrete building set on a cement pad at the western end of Technology Drive. On the north side of Technology Drive is the KLA Tencor industrial park which is comprised of five two-story industrial office buildings and a surface parking lot. The buildings have a stucco façade and large windows on the second floor (See Photo 2). The east side of the project site is bounded by Murphy Ranch Road, a two-lane public street with sidewalks and landscaping along the eastern side. Also on the east side of Murphy Ranch Road is the Maxtor industrial park, Sumac Drive, and a vacant lot. The Maxtor property is developed with five two-story buildings and a surface parking lot. The Maxtor buildings have a stucco façade with floor to ceiling windows on the first floor. The southern boundary of the site is adjacent to the City of Milpitas Murphy Ranch Storm Pump Station (which is very similar to the City of Milpitas Bellew Storm Pump Station in size and appearance), a Prudential Insurance office, and the Avaya industrial park (see Photo 3). The Prudential property is comprised of one one-story office building and the Avaya property is comprised of three two-story brick industrial/office buildings, a surface parking lot, and extensive landscaping and open space areas. The landscaping and open spaces areas are on the west side of the buildings and not visible from Murphy Ranch Road.

The project area is not located within a designated scenic area, as note on Figure 4-6 of the City of Milpitas General Plan. In addition, the project site is not located adjacent to a scenic corridor or a scenic connector. The project site is, however, located adjacent to Coyote Creek. The creek's riparian corridor has been designated as visually significant vegetation.

4.2.2 Visual Impacts

4.2.2.1 Thresholds of Significance

For the purposes of this EIR, a visual impact is considered significant if the project would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Photo 1 - View of the project site, looking west from Murphy Ranch Road.

Photo 2 - View of KLA Tencor site, looking north from Technology Drive.

PHOTOS 1 AND 2

Photo 3 - View of Avaya site, looking south from southern property line of the project site.

PHOTO 3

4.2.2.2 Visual and Aesthetics

The proposed project will allow 30 to 55 foot tall residential buildings to be constructed on a site that is currently undeveloped. The proposed development would be surrounded by industrial buildings which are, on average, more than 60 feet away from any of the proposed residential units and are approximately 30 feet tall (two stories). The residential buildings would have a varying setback of approximately 10 to 20 feet from the Murphy Ranch Road. The surrounding industrial buildings have much larger setbacks because the surface parking lots are located between the roadway and the buildings. The proposed project will have comparable perimeter landscaping (i.e., similar vegetation) along Murphy Ranch Road to the industrial developments, which have trees and lawn areas.

The visual character of Murphy Ranch Road will be altered slightly by placing residential buildings in close proximity to the roadway. The proposed residential buildings will, however, be similar in height and comparably landscaped to the surrounding development.

The proposed project will develop a currently vacant lot. Because the site is undeveloped, properties to the east of the site currently have a view of the Coyote Creek riparian corridor (an area designated as visually significant vegetation) and levee. While the proposed project will block some of the existing view that the employees of the industrial buildings east of the project site (Maxtor) have of the riparian corridor and the 10 foot tall dirt levee, the project will not completely block the view of the riparian corridor (in particular, near the park) and will not have a substantial adverse effect on this scenic resource. **(Less Than Significant Impact)**

4.2.2.3 Shade and Shadow

As stated above, future residential buildings on the project site will be 30 to 55 feet tall. The parking garage in the center of the Murphy Ranch North development will be between 50 and 60 feet tall. The apartment complex will shade portions of Technology Drive and Murphy Ranch Road during the winter months. Shading a public street, however, is not an adverse environmental impact. It is also possible that the buildings will shade a small portion of the levee near the City of Milpitas Bellew Storm Pump Station during the winter months. The shading of the levee will not preclude its use a recreational trail and, as a result, there will be a less than significant shade/shadow impact on existing public recreational areas.

The proposed residential development will not result in significant shade and shadow or aesthetic impacts to the adjacent land uses. **(Less Than Significant Impact)**

4.2.2.3 Light and Glare

The project would include outdoor security lighting on the site, along walkways, driveways, and entrance areas. This outside lighting would likely be high-pressure sodium lighting. Lighting would increase the level of illumination in the area, but would be consistent with the existing lighting provided on the land uses surrounding the site. No lights will shine directly into the riparian corridor. Based on the consistency with lighting on nearby sites also adjacent to Coyote Creek, the project would not result in significant light and glare impacts.

4.2.3 Mitigation and Avoidance Measures

No mitigation is required or proposed.

4.2.4 Conclusion

Implementation of the proposed project will have a less than significant visual impact. (Less Than Significant Impact)

4.3 GEOLOGY AND SOILS

The following discussion is based a geotechnical investigation prepared by *Treadwell & Rollo* in August 2004. The complete report can be found in Appendix A of this report.

4.3.1 Existing Setting

4.3.1.1 On-Site Geologic Conditions

Soils

The project site is located in the Santa Clara Valley, a relatively flat alluvial basin, bounded by the Santa Cruz Mountains to the southwest and west, the Diablo Mountain Range to the east, and San Francisco Bay to the north. In Milpitas, the soil is comprised of clay soils that contain groundwater at shallow depths (less than 25 feet). The subsurface conditions make the project area subject to high shrink/swell[7] potential[8]. These soil conditions may present geotechnical constraints to foundation design and construction.

Borings taken on the project site determined that the soil is comprised of eight to ten feet of soft to medium stiff silt and low-plasticity clay with varying sand content, referred to as the weak silt and clay layer. The weak silt and clay layer is underlain by very stiff to hard clay extending to depths of 18 to 33 feet below the ground surface (bgs).

Seismicity

The San Francisco Bay Area is classified as Zone 4 for seismic activity, the most seismically active region in the United States. Strong ground shaking can therefore be expected at the site during moderate to severe earthquakes in the general region. The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well defined, active fault zones of the San Andreas Fault system, which regionally trends in a northwesterly direction.

The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (formerly known as a Special Studies Zone). Fault rupture through the site, therefore, is not anticipated.

The major active faults in the project area are the Hayward, Calaveras, and San Andreas faults. The San Andreas Fault is approximately 14 miles southwest of the site, the Hayward Fault is approximately six miles northeast of the site, and the Calaveras Fault is approximately seven miles east of the site. Due to the close proximity of the site to the aforementioned faults, any groundshaking, ground failure, or liquifaction caused by an earthquake could cause damage to structures. The Association of Bay Area Governments (ABAG) predicts that there is a 67 percent probability that one or more major earthquakes will occur in the San Francisco region within the next 30 years. It is probable that a large earthquake would induce strong to very strong ground shaking on the project site during the life of the project.

[7] Soils with shrink/swell potential swell when wet and shrink when drying.
[8] U.S. Department of Agriculture, Soil Conservation Service, Soils of Santa Clara County, August 15, 1968.

Liquefaction

Liquefaction is the transformation of water saturated soil from a solid to a liquid state during ground shaking. Soils most susceptible to liquefaction are loose to moderately dense, saturated granular soils with poor drainage, such as silty sands or sands and gravels capped by or containing seams of impermeable sediment.

Analysis of the soil layers on the project site indicates that the layers of stiff to very stiff silt and sandy silt and medium dense silty sand (at depths of 18 to 48 feet bgs) will liquefy following a large earthquake on a nearby fault. None of the liquefiable layers appear to be vertically or laterally continuous across the site. The consulting geologist estimates that the liquefaction-induced differential settlement will be approximately one-half inch over a horizontal distance of 30 feet.

Lateral Spreading

Lateral spreading occurs when a continuous layer of soil liquefies at depth and the soil layers above move toward an unsupported face, such as a shoreline slope of creek channel, or in the direction of a regional slope or gradient. Based on the discontinuous nature and depth of potentially liquefiable layers, the site has a low probability of lateral spreading.

Mineral Resources

The Santa Clara Valley was formed when sediments derived from the Santa Cruz Mountains and the Mt. Hamilton-Diablo Range were exposed by continued tectonic uplift and regression of the inland sea that had previously inundated this area. As a result of this process, the topography of the City is relatively flat and there are no significant mineral resources.

4.3.1.2 Uniform Building Code

The Uniform Building Code is a model code used in most western US states. This model code is adopted by each state with amending regulations added to make changes applicable to that jurisdiction. California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code, is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns

Notwithstanding, the national model code standards adopted into Title 24 apply to all occupancies in California except for modifications adopted by state agencies and local governing bodies.

4.3.2 Geologic and Soils Impacts

4.3.2.1 Thresholds of Significance

For the purposes of this EIR, a geologic impact is considered significant if the project would:

- expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), landslides, or expansive soils;
- cause substantial erosion or siltation;
- expose people or property to major geologic hazards that cannot be mitigated through the use of standard engineering design and seismic safety techniques.
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

4.3.2.2 Geologic Impacts to the Project Site

The project site includes moderate to highly expansive soils, which may expand and contract as a result of seasonal or man-made soil moisture conditions. Expansive soil conditions have the potential to damage structures and improvements on the project site. The site is also located in a seismically active region and, therefore, strong ground shaking is expected during the lifetime of the proposed project. While no active faults are known to cross the project site, groundshaking on the site could damage buildings and threaten the welfare of the residents. Furthermore, soils on the project site have a moderately high potential for liquefaction.

Geologic conditions on the project site will require that the proposed structures be designed and built in conformance with the requirements of the Uniform Building Code for Seismic Zone 4. Geologic and soils impacts resulting from conditions on the site can be mitigated by utilizing standard engineering and construction techniques. With incorporation of these measures the project will not expose people or property to significant impacts associated with the geologic conditions of the site. Slope instability, erosion, or landslide related hazards will be minimal due to the flat topography of the site.

Buildings will be designed and constructed in accordance with the design-level geotechnical investigation prepared for the site, which will identify specific design features that will be required for the project, including site preparation, compaction, trench excavations, foundation and subgrade design, drainage, and pavement design. The geotechnical investigation shall be reviewed and approved by the City prior to issuance of a building permit for the project.

The proposed project will be built in conformance with the requirements of the Uniform Building Code for Seismic Zone 4 and, therefore, will not expose people or property to significant impacts associated with the geologic conditions of the site. **(Less Than Significant Impact)**

4.3.2.3 Mineral Resources

The proposed project site is within a developed urban area and it does not contain any known or designated mineral resources. Implementation of the proposed project will not result in the loss of availability of any known mineral resources.

Implementation of the proposed project will not result in the loss of known mineral resources within the City of Milpitas. **(Less Than Significant Impact)**

4.3.3.2 Mitigation and Avoidance

There is no mitigation required or proposed.

4.3.4 Conclusion

Implementation of the proposed project will have a less than significant geologic and soils impact. (Less Than Significant Impact)

4.4 HYDROLOGY

The following information is based on FEMA Flood Insurance Rate Maps and the Stormwater Control Plan prepared by *Carlson, Barbee & Gibson, Inc*. The complete stormwater control plan can be found in Appendix B of this report.

4.4.1 Existing Setting

4.4.1.1 Flooding

Based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps, the project site is within Zone X. Flood Zone X is defined as areas of a 500-year flood, or areas of a 100-year flood with average depths of less than one foot or with drainage areas of less than one square mile. The map also notes that the project site is within an area protected from the 100 year flood by a levee, dike, or other structure subject to possible failure or overtopping during large floods.

4.4.1.2 Storm Drainage System

The City of Milpitas owns and maintains the storm drainage system which serves the project site. There are four 18-inch storm drains which carry water from the site to the storm drain main in Murphy Ranch Road. The storm drain line in Murphy Ranch Road is a 39-inch to 48-inch line that connects to a 72-inch storm drain line in Technology Drive. This line discharges into Coyote Creek through the pump station located near the northwest corner of the project site. Coyote Creek carries the runoff into San Francisco Bay. There is no overland release of stormwater directly into any water body from the project site.

One of the four 18-inch lines has a total capacity of 12.9 cubic feet per second (cfs) and the other three 18-inch lines have a total capacity of 10.5 cfs each. The storm drain line in Murphy Ranch Road has a capacity of 57 cfs to 81 cfs as the line increases in size near the connection to the line in Technology Drive. The 72-inch line in Technology Drive has a current capacity of 232 cfs.

4.4.1.3 Water Quality

The water quality of Coyote Creek is directly affected by pollutants contained in stormwater runoff from a variety of urban and non-urban uses. Stormwater from urban uses contains metals, pesticides, herbicides, and other contaminants, including oil, grease, asbestos, lead, and animal wastes. Currently, Coyote Creek is listed on the California 303(d) list[9] and the Total Maximum Daily Load (TMDL)[10] high priority schedule.

Under existing conditions, the project site is entirely covered with permeable surfaces. Runoff from the site may currently contain sediments and debris.

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[9] The Clean Water Act, section 303, establishes water quality standards and TMDL programs. The 303(d) list is a list of impaired water bodies.

[10] A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. The TMDL high priority schedule denotes the most severely impaired water bodies on the 303(d) list.

The Santa Clara Valley Urban Runoff Pollution Prevention Project was developed in accordance with the requirements of the revised 1995 San Francisco Bay Basin Water Quality Control Plan, for the purpose of reducing water pollution associated with urban storm water runoff. The State Water Resources Control Board (SWRCB) also administers the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities, which is intended to reduce construction-related stormwater pollution.

The SWRCB NPDES General Permit for Construction Activities requires Stormwater Pollution Prevention Plans (SWPPPs) to control discharge associated with construction activities for sites 10,000 square feet or larger. Development on such sites is required to submit a Notice of Intent (NOI) to the SWRCB and prepare a SWPPP prior to construction.

The City of Milpitas is a co-permittee to the Santa Clara Valley Urban Runoff Pollution Prevention Program's NPDES permit for municipal storm water discharges, issued by the Regional Water Quality Control Board (RWQCB). The NPDES permit includes requirements for water quality monitoring, identification and elimination of illicit connections and illegal dumping to the storm drainage system, increases to the municipal storm drainage system and street cleaning and public education programs.

The proposed project is located adjacent to Coyote Creek and is required to meet all Santa Clara Valley Water District requirements for riparian setbacks and access easements.

4.4.1.4 Groundwater

Borings from the project site found groundwater at depths ranging from 10.5 to 14.5 feet below the ground surface (bgs). Groundwater levels will typically fluctuate seasonally depending on the water level in Coyote Creek.

4.4.2 Hydrology Impacts

4.4.2.1 Thresholds of Significance

For the purposes of this EIR, a hydrology, drainage, or flooding impact is considered significant if the project would:

- violate any water quality standards or waste discharge requirements;
- substantially deplete 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 (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;

- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- 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; or
- inundation of the site by seiche, tsunami, or mudflow.

4.4.2.2 Flood and Storm Drainage Impacts

The project site is located within a 500-year flood hazard zone or a 100-year flood zone with water depths of less than one foot. Within the project area Coyote Creek is designated a 100-year flood zone. The project site, however, is outside the Coyote Creek 100-year flood zone because of the levees. Therefore, the proposed project would not expose persons and property to impacts from such a flood and will not impede flood flows across the site.

Implementation of the proposed project will not expose people or structures to flood hazards or redirect flood flows. **(Less Than Significant Impact)**

Implementation of the proposed project will result in a substantial increase in impervious surfaces (0.0 percent to 71 percent), which will increase the amount of runoff entering the storm drainage system. Currently, runoff from the site is calculated to be 3.1 cubic feet per second (cfs) during a 10-year or standard rainfall year event and 4.8 cfs during a 100-year storm event. Development under the current industrial land use designation is estimated to increase runoff by 21.9 cfs in a standard rainfall year and 32 cfs during a 100-year storm. Nevertheless, the proposed project must be compared to the existing conditions, which is an undeveloped site. Implementation of the proposed project would increase the runoff rate to 19.5 cfs for a 10-year event and 28.6 cfs for a 100-year event, a net increase of 16.4 cfs and 23.8 cfs respectively.

The existing storm drainage system does not have sufficient capacity to accommodate the increase in runoff from the project site.

Implementation of the proposed project would result in an increase in the amount of stormwater runoff compared to existing conditions which will contribute to an existing deficiency in the capacity of the existing storm drainage system. **(Significant Impact)**

4.4.2.3 Water Quality Impacts

Operational Impacts

Because the project will add more than 10,000 square feet of impervious surface area to the project site, the project must comply with the City of Milpitas Stormwater C.3 requirements and

the SWRCB NPDES permit. In order to meet C.3. and NPDES requirements, the project will include the following measures to reduce runoff pollutant loads.

1. Pathway and patio runoff will be routed to landscape infiltration areas. Excess water that is not absorbed into the ground will be conveyed to the on-site storm drainage system.
2. A landscape swale will be installed along the north and west boundaries of the site parallel to the fire lane. Runoff from the drive aisle will sheet flow into the landscape swale and then flow to a drain area connected to the on-site storm drainage system.
3. Structural stormwater treatment systems will be installed in the on-site storm drainage lines prior to the points of connection to the public storm drainage system in Murphy Ranch Road.
4. Oil-grease separators will be installed in the parking structure to treat runoff mixed with vehicle hydrocarbons.

For the purpose of this analysis the project site has been divided into eight drainage areas. Drainage areas A – E will drain into structural stormwater treatment units (i.e., filter systems located within the on-site storm drainage system) and drainage areas F – H will drain into landscape treatment areas. Table 1 below shows the minimum flow (for structural treatment areas) or surface area (for landscape treatment areas) for each drainage area and the capacity of the stormwater treatment unit for that area.

TABLE 1
Stormwater Treatment Capacity

Drainage Area	Minimum Flow/Surface Area	Capacity
A	0.81 cfs	1.10 cfs
B	0.65 cfs	0.70 cfs
C	0.57 cfs	0.70 cfs
D	0.38 cfs	0.70 cfs
E	0.22 cfs	0.70 cfs
F	2,130 square feet	3,960 square feet
G	1,300 square feet	4,360 square feet
H	70 square feet	540 square feet

As shown in Table 1, the proposed treatment facilities will have sufficient capacity to treat all the stormwater runoff entering the storm drainage system. In addition, all projects in the City of Milpitas are required to record an Operation & Management agreement to insure continued maintenance and performance of post-construction measures. Therefore, even with a net increase in runoff of 2.16 cfs, implementation of the proposed treatment measure will result in a less than significant impact on water quality.

With the BMPs proposed in the Stormwater Control Plan, implementation of the proposed project will not result in an increase in stormwater pollutants discharged from the site and the project will have a less than significant impact on water quality. **(Less Than Significant Impact)**

Construction Impacts

The proposed project site is currently undeveloped with exposed soil, so there is some potential for erosion runoff and wind. Because the site is relatively flat erosion is minimal from water. Wind erosion probably occurs during and after the periodic disking[11] done to control weeds. Construction activities including excavation and grading will result in piles of loose soil and will increase the potential for erosion and sedimentation until paving and planting are completed. Once construction is complete and all disturbed soil surfaces have been planted, erosion from the site and associated sedimentation entering Coyote Creek will be minimal.

Construction activities will result in increased erosion which could cause the degradation of water quality within Coyote Creek and San Francisco Bay. **(Significant Impact)**

4.4.2.4 Groundwater Impacts

Depth to groundwater at the project site is anticipated to be 10.5 to 14.5 feet below the ground surface. The project site is 100 percent permeable and may contribute to recharging of the underground aquifers but it is not a primary recharge area. In addition, the City of Milpitas does not rely on groundwater for domestic water needs and reduction of the possible recharge area on the project site will not affect the City's ability to provide water to its own residents. Other cities around Milpitas do rely on groundwater, but designated recharge areas have been established to help maintain the groundwater supply. As a result, the loss of approximately 15.45 acres of permeable surface area on this site will have a less than significant impact on groundwater.

Implementation of the proposed project will have a less than significant impact on groundwater. **(Less Than Significant Impact).**

4.4.3 <u>Mitigation and Avoidance Measures</u>

4.4.3.1 General Plan Policies

The programs and policies of the City of Milpitas General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Development on-site will be subject to General Plan programs and policies, including the following:

- *Water Quality and Conservation Element Policy 4.d-P-1:* Implement a comprehensive municipal stormwater pollution prevention program in compliance with requirements of the Water Board's stormwater NPDES permit.

Project Specific Mitigation Measures

The following measures, based on Regional Water Quality Control Board Best Management Practices, have been included in the project to reduce construction-related water quality impacts. All mitigation will be implemented prior to the start of earthmoving activities on-site and will continue until the construction is complete.

[11] To turn and loosen soil.

- Burlap bags filled with drain rock shall be installed around storm drains to route sediment and other debris away from the drains.

- Earthmoving or other dust-producing activities shall be suspended during periods of high winds.

- All exposed or disturbed soil surfaces shall be watered at least twice daily to control dust as necessary.

- Stockpiles of soil or other materials that can be blown by the wind shall be watered or covered.

- All trucks hauling soil, sand, and other loose materials shall be covered and all trucks would be required to maintain at least two feet of freeboard.

- All paved access roads, parking areas, staging areas and residential streets adjacent to the construction sites shall be swept daily (with water sweepers). In addition, a tire wash system may be required.

- Vegetation in disturbed areas shall be replanted as quickly as possible.

- All unpaved entrances to the site shall be filled with rock to knock mud from truck tires prior to entering City streets. A tire wash system may also be employed at the request of the City.

- A Storm Water Permit will be administered by the Regional Water Quality Control Board. Prior to construction grading for the proposed land uses, the project proponent will file a "Notice of Intent" (NOI) to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP) which addresses measures that would be included in the project to minimize and control construction and post-construction runoff. Measures will include, but are not limited to, the aforementioned RWQCB mitigation.

- The project proponent will submit a copy of the draft SWPPP to the City of Milpitas for review and approval prior to start of construction on the project site. The certified SWPPP will be posted at the project site and will be updated to reflect current site conditions.

- When construction is complete, a Notice of Termination (NOT) for the General Permit for Construction will be filed with the Regional Water Quality Control Board and the City of Milpitas. The NOT will document that all elements of the SWPPP have been executed, construction materials and waste have been properly disposed of, and a post-construction storm water management plan is in place as described in the SWPPP for the site.

The following measures, based on Regional Water Quality Control Board Best Management Practices, have been included in the project to reduce post construction water quality impacts.

- As part of the mitigation for post-construction runoff impacts addressed in the SWPPP, the project will implement regular maintenance activities (i.e., sweeping, maintaining vegetative swales, litter control, and other activities as specified by the City) at the site to prevent soil, grease, and litter from accumulating on the project site and contaminating surface runoff. Storm water catch basins will be stenciled to discourage illegal dumping.

- In compliance with Section XI-16-6 of the Milpitas Municipal Code, the project shall include Permanent Stormwater Pollution Prevention Measures in order to reduce water quality impacts of urban runoff from the entire project site for the life of the project. These measures will include:

  - Landscape designs for stormwater treatments that meet the requirements of Provision C.3. of the City's NPDES permit will be submitted with the Site Development Plans and must be approved by the Planning Department prior to issuance of building permits. The landscape design will include, but is not limited to, bio-swales within the open space areas of the project.

  - Due to the limited area available for landscape stormwater treatment on the apartment site, mechanical separators will be installed in all stormwater drains serving the project site. The separators will be located downstream of the inlets (on-site) and upstream of the connection to the public storm drainage system.

The following mitigation measures have been included in the project to reduce storm water drainage impacts:

- The proposed project will be required to record an Operation & Management (O&M) agreement with the City to insure continued maintenance and performance of post-construction measures.

- A 42-inch storm drain bypass line will be installed parallel to the existing 72-inch storm drain line pursuant to the City Stormdrain Master Plan to provide adequate capacity to convey stormwater runoff from the project site to the pump station.

4.4.4 Conclusion

With implementation of the identified General Plan policies and mitigation measures listed above, the project will result in less than significant impacts on storm water quality. The project will not deplete the groundwater supply, substantially alter the existing drainage pattern, substantially degrade water quality, or subject residents to flood hazards or increase storm water runoff beyond the capacity of the existing stormwater drainage system. (Less Than Significant Impact with Mitigation)

4.5 VEGETATION AND WILDLIFE

The following information is based in part on a Burrowing Owl survey prepared by *H.T. Harvey & Associates* in November 2005 (see Appendix C).

4.5.1 Existing Setting

4.5.1.1 Overview of Habitat Found on the Project Site

The proposed project site is a vacant parcel with no vegetation. The site is an open field of bare dirt that is disked regularly.

4.5.1.2 Special Status Species

Special Status species are those plants and animals listed under state and federal Endangered Species Acts (including candidate species); plants listed on the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (1994); and animals designated as Species of Special Concern by the California Department of Fish and Game. There are no special status plant species or trees on the project site.

Special Status Animal Species

Most special status animal species occurring in the Bay Area use habitats that are not present on the project site. Salt marsh, freshwater marsh, ponds, and serpentine grassland habitats are not present within or immediately adjacent to the site. However, the open field could be used by ground squirrels and, subsequently, Burrowing Owls.

Burrowing Owls

A reconnaissance-level survey was performed on November 3rd 2005 (during the non-breeding season) to determine if Burrowing Owls occupy the project site. No Burrowing Owls or secondary evidence of their presence (i.e., feathers, prey remains, etc.) were observed. Ground squirrels[12], however, do occupy the site and conditions on the site are suitable for foraging by owls making this site consistent with owl foraging, nesting, and roosting habitat. A previous survey in January 2001 found two owls on the site.

4.5.2 Vegetation and Wildlife Impacts

4.5.2.1 Thresholds of Significance

For the purposes of this EIR, a vegetation and wildlife impact is considered significant if the project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

[12] Burrowing Owls occupy ground squirrel burrows.

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- 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;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local ordinances protecting biological resources, such as a tree preservation ordinance; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.5.2.2 Vegetation, Habitats, and Wildlife

The proposed project is mostly a dirt lot with no vegetation. While it is adjacent to Coyote Creek, which has a substantial riparian corridor, the project site itself has no trees and does not provide nesting habitat for raptors or any other animals that may frequent the riparian habitat. There is a small area of low bushes directly adjacent to the northern pump station, but the vegetation in this area is not suitable raptor habitat. While there is no nesting habitat on-site, the project site may provide foraging habitat for raptors. The project area, however, has many foraging sites including the land within the creek right-of-way and vacant land to the west, north, and southeast of the site. Development of the project site will not significantly impact the raptors ability to forage and find food. There are no protected wetlands on the site. In addition, the site is disked regularly which restricts the growth of vegetation on the site.

Implementation of the proposed project will have a less than significant impact on trees and special-status vegetation, habitats, and wildlife species. **(Less Than Significant Impact)**

While the project itself will not significantly impact raptors or their habitat, mature trees within the riparian corridor may be utilized by nesting and/or foraging raptors. Nesting raptors (i.e., nests of falcons, hawks, eagles, or owls) are protected under provisions of the Migratory Bird Treaty Act and California Department of Fish and Game (CDFG) Code Sections 3503, 3503.5, and 2800.

The proposed project would not impact the riparian corridor. Construction disturbance near raptor nests can, however, result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes abandonment and/or loss of reproductive effort is considered a taking by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact.

Construction activities could result in the abandonment of active raptor nests. **(Significant Impact)**

Burrowing Owls

As stated above, there is currently no known population of Burrowing Owls on the project site though the site still provides possible habitat. The last recorded owl occupation on the project site occurred in 2001. A Mitigation Agreement (CDFG #1802-2001-011-3) was entered into by Townsend Milpitas LLC (the previous property owner) and the California Department of Fish and Game (CDFG) in January 2001 to provide mitigation for impacts to Burrowing Owls on the site. The Mitigation Agreement was assumed by Lucent Technologies in May 2001. In July 2001 Lucent purchased 26 mitigation credits at the Agua Fria Conservation Bank in Merced County, California to mitigate impacts to owls on the site. The City of Milpitas, as the Lead Agency, found that the agreement was acceptable as mitigation for impacts of losing habitat on this site.

Because of a previously executed agreement to purchase Burrowing Owl habitat in Merced County, implementation of the proposed project will have a less than significant impact on Burrowing Owl habitat. **(Less Than Significant Impact)**

The aforementioned mitigation agreement only covers the loss of Burrowing Owl habitat on the project site. It does not, however, mitigate for the loss of individual owls that may inhabit the site. The site is disked regularly to control weeds. Disking also destroys possible owl habitat by destroying squirrel burrows. Nevertheless, owls have been known to occupy disked land and it must be assumed that owls could occupy the site. If owls are located on-site, construction activities could result in a "take" (harming or destroying) of individual owls which would be a significant impact.

Implementation of the proposed project could result in a take of Burrowing Owls. **(Significant Impact)**

4.5.3 <u>Mitigation and Avoidance Measures</u>

4.5.3.1 General Plan Policies

The programs and policies of the City of Milpitas General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Development on-site will be subject to General Plan programs and policies, including the following:

- *Biotic Resources Policy 4.b.I.4:* Require a biological assessment of any project site where sensitive species are present, or where habitats that support known sensitive species are present.

4.5.3.2 Project Specific Mitigation Measures

The following mitigation measures will be implemented during construction to avoid abandonment of raptor nests:

- Construction shall be scheduled to avoid the nesting season to the extent feasible. The nesting season for most birds, including most raptors, in the San Francisco Bay area extends from February through August.

- If it is not possible to schedule demolition and construction between September and January, then pre-construction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. This survey shall be completed no more than 14 days prior to the initiation of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the ornithologist will inspect all trees and other possible nesting habitats immediately adjacent to the construction areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by construction, the ornithologist, in consultation with CDFG, will determine the extent of a construction-free buffer zone to be established around the nest, typically 250 feet, to ensure that raptor or migratory bird nests will not be disturbed during project construction.

The following mitigation measures will be implemented during construction to avoid take of Burrowing Owls:

- No Burrowing Owls would be evicted from burrows during the nesting season (February 1 through August 31). Eviction outside the nesting season may be permitted as a means to avoid take, pending evaluation of eviction plans and receipt of formal written approval from the CDFG authorizing the eviction.

- A protected area 250 feet in radius, within which no activity will be permissible, will be maintained between project activities and nesting burrowing owls or individual resident owls. This protected area will remain in effect between February 1 and August 31, or at the CDFG discretion and based upon monitoring evidence, until any young owls are foraging independently. In the non-nesting season, a protected area 50 meters (165 feet) in radius, within which no new construction activity will be permissible, will be maintained between project activities and burrows occupied by Burrowing Owls. Any development within these protected areas would be approved beforehand by the CDFG.

4.5.4 Conclusion

Implementation of the identified General Plan policies and proposed mitigation measures will reduce take of Burrowing Owls on-site to a less than significant level. (Less Than Significant With Mitigation)

4.6 HAZARDS & HAZARDOUS MATERIALS

The following information is based on a risk assessment prepared by *TRC Lowney* in June 2006 and a Phase I report prepared by *PES Environmental, Inc*. in August 2004. The reports can be found in Appendices D and E of this document, respectively.

4.6.1 Existing Setting

The proposed project site is located in an area of Milpitas that is predominately developed with industrial land uses. The following analyses were performed to evaluate the potential risk associated with locating a residential development in this area:

1. A drive-by survey was prepared to identify which facilities could possibly use, handle, or store significant amounts of hazardous materials within one-quarter mile (1,320 feet) of the project site.
2. A regulatory agency database report was obtained and reviewed to identify known hazardous materials users within one-quarter mile of the site.
3. A Phase I report (prepared in August 2004) was reviewed and compared to information obtained in the drive-by survey.

Based on this information 10 sites were identified that could possibly house hazardous materials and, as a result, present a risk to future residential development. Eight of the sites are located within a one-quarter mile radius. The other two sites are located just outside the one-quarter mile radius. All the identified users and their reported chemical inventories are listed in Table 2 below.

TABLE 2
Hazardous Materials Users in the Project Area

No.	Facility Name/ Distance from Project Site	Drive-by Observations	Database Review	Reported Chemical Inventories/File Review
1	Intersil 1/8 mile SE	Two office buildings, possible R&D use	This facility is not listed on any government database	No files available at the fire department
2	Murphy Ranch Pump Station 1/8 mile SE	Small concrete building with DOT placard on outside	On the Cortese, LUST, CA FID, and SWEEPS lists	HMMP on file dated 4/12/2004. Listed one 2,000 gallon diesel AST
3	Unknown Unmarked site on Sumac Drive, 1/8 mile E	Vacant office building	unknown	unknown

TABLE 2 *Continued* Hazardous Materials Users in the Project Area				
No.	**Facility Name/ Distance from Project Site**	**Drive-by Observations**	**Database Review**	**Reported Chemical Inventories/File Review**
4	Maxtor Corporation Building 1, FA Lab 1/8 mile NNE	Multiple office buildings, several cylindrical tanks stored in fenced area. No placards visible.	On the RCRA information list and listed as a small quantity generator of hazardous waste and in the toxic chemical release inventory system	HMMP on file dated 12/10/2006 listed small amounts of various hazardous materials (alcohols and acids) in liquid containers up to 62 gallons and various gases (compressed oxygen, nitrogen, and helium) in cylinders with up to 291 cubic foot capacities
5	KLA Tencor 1/8 miles N	Multiple office buildings, no placards posted	This facility was not listed in any government database	No files available at the fire department
6	Cisco Systems 1/4 mile SW	Large campus of office buildings and recreational areas, no placards posted	This facility was not listed in any government database	No files available at the fire department
7	Avaya 1/4 mile SE	Office building (R&D), no placards posted	This facility was not listed in any government database	No files available at the fire department
8	Unknown 855 Tasman Drive & 1020 McCarthy, 1/4 mile SE	Vacant office buildings	This facility was not listed in any government database	No files available at the fire department
9	PG&E – Los Esteros Substation 2,300 feet NNE	Power plant, several smoke/steam stacks, piping, cylinders, and tanks visible on property	This facility is listed on the HAZNET and LUST databases	HMMP on file dated 11/03/2003, listed large quantities of various chemical liquids including insulating, hydraulic, lubricating, and turbine oils (up to 6,513 gallons), battery and sulfuric acids (up to 5,000 gallons), aqueous ammonia (up to 10,000 gallons), nitrogen and carbon dioxide gases (up to 300 cubic feet, and diesel fuel (up to 320 gallons)

TABLE 2 *Continued* Hazardous Materials Users in the Project Area				
No.	**Facility Name/ Distance from Project Site**	**Drive-by Observations**	**Database Review**	**Reported Chemical Inventories/File Review**
10	Calpine – Agnews Cogeneration Facility 1,500 feet NNW	Power plant, some steam stacks, piping, various cylinders and holding tanks visible on property	This facility was not listed on any government database	HMBP dated 04/01/2004 listed 12,000 gallons anhydrous ammonia, 325 gallons oil/waste oil, 75 gallons corrosion inhibitor, alkaline additive and boiler chemicals, 150 cubic feet of carbon dioxide/monoxide and nitrogen, 1,600 gallons of sodium hypochlorite, up to 5,000 gallons of sodium hydroxide, 75 gallons sodium bromide, 5,000 gallons sulfuric acid and various 75 gallon containers of petroleum, oil, and gas.

Review of the chemical inventories of the above referenced facilities (provided by the Cities of Milpitas and San José) identified four facilities that reported hazardous materials in excess of the threshold planning quantities required for submittal of a Hazardous Materials Business Plan. Of the four facilities, two reportedly use materials that have the potential for off-site impacts if released at exterior locations. These facilities are the Los Esteros Substation and the Calpine Agnews Cogeneration Facility. The chemicals of concern (COCs) at the Los Esteros facility include a 5,000 gallon container of sulfuric acid and a 4,180 pound container of dichlorotrifluoroethane. The COC at the Calpine facility is a 60,000 pound container of liquefied ammonia gas.

4.6.1.2 Off-Site Sources of Soil and Groundwater Contamination

During the 2004 Phase I report study, the regulatory agency database was reviewed, and three Leaking Underground Storage Tank (LUST) sites were identified. The City of Milpitas Murphy Ranch Storm Pump Station, located near the southwest corner of the property, had a 2,000 gallon diesel underground storage tank (UST) which was removed in July 1995 and replaced with the existing aboveground storage tank (AST). Diesel fuel leaked from the UST resulted in approximately 475 cubic yards of soil contamination. The contaminated soil was excavated and disposed offsite. Monitoring wells determined that groundwater had not been impacted. The site was issued a regulatory case closure in November 1998.

The McCarthy Ranch at Bellow is a Santa Clara Valley Water District (SCVWD) owned site located near the northwestern property boundary. A 500 gallon gasoline UST was removed by the SCVWD in 1993 during levee construction activities. Gasoline leaked from the UST resulted in approximately 1,280 cubic yards of soil contamination. The contaminated soil was excavated and disposed offsite. Monitoring wells determined that groundwater had not been impacted. The Regional Water Quality Control Board issued a case closure in April 1996.

The property at McCarthy Boulevard and Magnolia Street (approximately 0.25 miles southeast of the project site) had three USTs containing diesel and gasoline which were removed in 1988. The contaminated soil was over-excavated, aerated on-site, and subsequently used as backfill. No contaminants were detected in groundwater monitoring wells installed at the UST site. The site was issued a regulatory case closure in June 1996.

Each of the three sites have been closed for more than ten years. Based on remediation activities and the lack of detectable contaminants in the groundwater, these sites will not significantly impact the soil or groundwater on the project site.

4.6.2 Hazardous Materials Impacts

4.6.2.1 Thresholds of Significance

For the purposes of this EIR, a hazardous materials impact is considered significant if the project would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- 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;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.6.2.2 Risk Assessment

Sulfuric Acid and Dichlorotrifluoroethane Release Analysis

Based on the COCs present at the Los Esteros and Calpine facilities, an off-site consequence analysis was prepared to assess the level of possible risk to future residential development. The sulfuric acid and dichlorotrifluoroethane stored at these facilities do not possess the necessary physio-chemical properties to qualify as chemicals that require federal Risk Management Planning (RMP) and/or California Accidental Release Program (CalARP) compliance.

Therefore, a release of these chemicals would not significantly impact the project site or pose a health risk to future residents. **(Less Than Significant Impact)**

Ammonia Release Analysis

As required by U.S. EPA and Cal/EPA, the operators of the Calpine facility conducted a screening level evaluation of possible impacts to the area and the facility as part of their compliance obligations under RMP and CalARP. The evaluation included worst case and alternative release scenarios. In accordance with RPM requirements, the worst case release scenario assumes that the entire contents of the ammonia tank (approximately 60,000 pounds) are released over a 10-minute period. The release was modeled using conservative (required) parameters so that possible risks are not underestimated. For the worst case scenario (Scenario l), Calpine estimated the distance to the toxic endpoint to be approximately 8.1 miles from the facility.

The toxic endpoint for ammonia is assumed to be the Emergency Response Planning Guideline 2 (ERPG-2) concentration. The ERPG-2 concentration is defined as the maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects. The current ERPG-2 concentration for ammonia is 150 parts per million (ppm).

In addition to the worst-case Scenario 1 release, Calpine conducted an alternative release scenario, Scenario 2, which assumed that a release occurs during the loading/unloading of ammonia from the tank. Scenario 2 assumed that a ten-minute release of 4,137 pounds of ammonia would occur. For this scenario, the distance to the toxic endpoint (ERPG-2) was estimated to be approximately 0.41 mile from the facility (the project site is approximately 0.35 miles from the Calpine facility). Therefore, under the alternative release scenario, ammonia concentrations on the project site would be approximately 150 ppm (or slightly higher) given that the site is approximately 300 feet from the toxic endpoint. Alternative release scenarios are generally considered more realistic with respect to probable release risks associated with chemical facilities.

TRC Lowney conducted additional screening level modeling to forecast concentrations at on the project site in the event of a release under the worst case scenario at the Calpine facility. At the project site, outdoor concentrations of ammonia could reach 80,000 ppm assuming a 60,000-pound release of ammonia from the Calpine facility under the worst-case conditions. Under a Scenario 2 release, outdoor concentrations of ammonia could reach 5,600 ppm at the project site. These results assume calm wind conditions with a wind speed of 1.5 meters per second (m/sec).

The results of the assessment, however, substantially change when the analysis assumes normal wind speeds and atmospheric conditions. Normal conditions assume a wind speed of 3.5 m/sec. Under normal atmospheric conditions, a worst-case release would result in outside concentrations at the project site of approximately 2,300 ppm. Under the Scenario 2 release, assuming normal wind speed and atmospheric conditions, outside concentrations at the project site are predicted to be approximately 160 ppm, which is roughly consistent with the findings of the CalARP screening level evaluation.

Calpine Agnews Cogeneration Facility Risk Reduction Program

While a release of ammonia at the Calpine facility would affect the project site to some degree (dependant on various conditions), a Risk Reduction Program is in place to reduce the risk of an outside release. The facility has completed a seismic evaluation; a hazard and operability study, and has developed mechanical integrity and management programs (standard hazard reduction practices) in compliance with RMP/CalARP. In addition, Calpine reports that it has had no ammonia related accidents in its operational history (beginning December 1990).

To reduce the risk associated with seismic activity, the facility has seismically anchored the ammonia tank, installed flexible lines from the tank to the piping system, and has completed additional seismic bracing upgrades for the ammonia piping system. In addition to seismic improvements, release reduction measures (mechanical and procedural) have also been implemented and emergency drills have been conducted with on-site emergency response personnel and the San José Fire Department.

The hazard and operability (HAZOP) study for this facility identifies potential release scenarios, consequences of the potential releases, severity and risk of each scenario, existing safeguards, and recommended risk reduction measures to be taken by the facility.

A worst case release could affect the project site, however, the likelihood of a worst case release occurring is significantly less than the alternative release scenario. Therefore, based on the most likely release scenario and the measures Calpine has taken to secure the ammonia, the *TRC Lowney* Risk Assessment concluded that the Calpine facility will have a less than significant impact on the proposed project. **(Less Than Significant Impact)**

4.6.3 Mitigation and Avoidance Measures for Hazardous Materials Impacts

No mitigation is required or proposed

4.6.4 Conclusion

Implementation of the proposed project would not expose residents to airborne contaminants or contaminated soil or groundwater. Therefore the project will have a less than significant impact hazardous materials impact. (Less Than Significant Impact)

4.7 CULTURAL RESOURCES

The following information is based on an archaeological literature review and an on-site subsurface survey prepared by *Holman & Associates* in December 2005. The report can be found in Appendix F of this document.

4.7.1 Existing Setting

4.7.1.1 Literature Review

An archaeological literature review was completed at the Northwest Information Center at Sonoma State University to determine if any known resources are located on the project site. The only formal survey found was completed in 1980. No known prehistoric sites are located within the project boundaries. The closest formally recorded prehistoric site is located southwest of the project site on the opposite side of Coyote Creek.

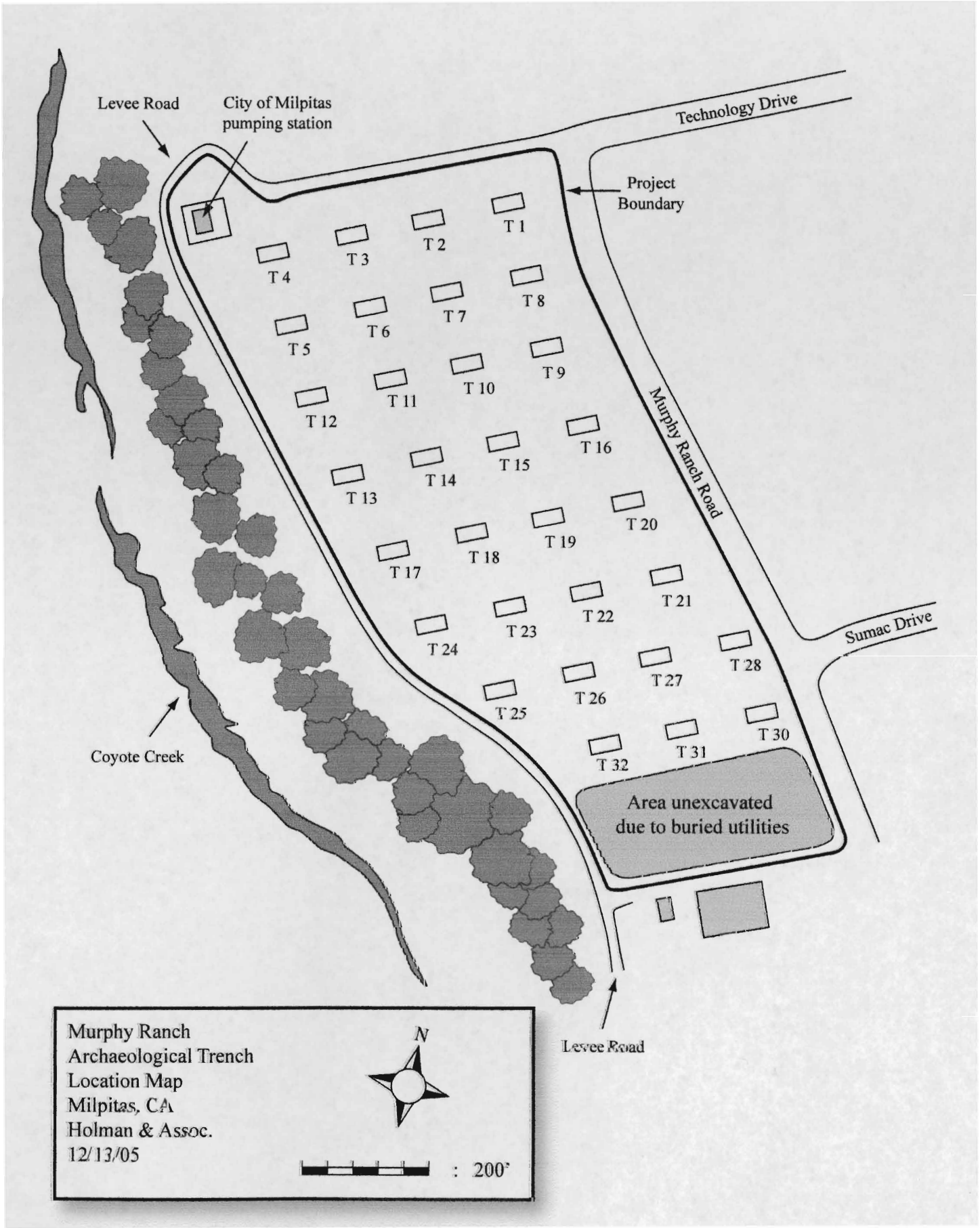
Historically, the project site has only been used for agricultural production. Prior to the early 1990s, there were several historic structures located on or adjacent to the project site associated with the agricultural land uses of the site. These structures were surveyed in 1980 and again in 1986. The former Shaughnessy-Murphy Ranch, which includes the project site, was found to be eligible for inclusion on the National Register during the 1986 survey. In 1993, the buildings on the Shaughnessy-Murphy Ranch were photo-documented and then subsequently removed, allowing development of some of the adjacent industrial buildings. Removal of the buildings eliminated the National Register eligibility of the project site.

4.7.1.2 Field Work Review

Due to the limited information about buried cultural resources in the area, a new analysis was prepared. The field work began with a visual inspection of the frequently disked property. No prehistoric cultural resources or historic deposits were seen inside the boundary of the project site during the visual inspection.

Once the visual inspection was completed, a backhoe excavation of the site was undertaken. The location of the backhoe trenches is shown in Figure 6. The entire site was examined with the exception of a utility corridor at the southern end of the project site. The trenches were dug to an average depth of two meters (six feet) below the ground surface.

The backhoe trenching operation confirmed that the project site was built up over time by slow moving flood waters from Coyote Creek which inundated the area for long periods of time. Despite the known historic ranch use of the site, no concentrations of historic material were seen anywhere inside the project site. In addition, no prehistoric artifacts were found during the trenching operation.



TRENCH LOCATION MAP FIGURE 6

4.7.2 Cultural Resources Impacts

4.7.2.1 Thresholds of Significance

For the purpose of this EIR, a cultural resources impact is considered significant if the project would:

- cause a substantial adverse change in the significance of a historical resource;
- cause a substantial adverse change in the significance of an archaeological resource;
- directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or
- disturb any human remains, including those interred outside of formal cemeteries.

4.7.2.2 Impacts to Prehistoric/Historic Resources

During the visual inspection and trenching operation on the project site, no evidence of historic or prehistoric resources was found. Therefore, it is unlikely that the site contains buried artifacts or human remains and that implementation of the proposed project will have a less than significant impact on cultural resources. No monitoring of earthmoving activities is recommended.

As stated above, the backhoe trenching operation revealed that the project site was built up over time by slow moving flood waters from Coyote Creek which inundated the area for long periods of time. It is possible, therefore, that if the site was prehistorically occupied, buried artifacts could be discovered below the two meter trenching depth. If deep trenching is required (deeper than six feet), there is a small probability that archaeological material may be encountered. In the event that any archaeological site indicators[13] are found, work will be stopped within 50 feet of the discovery until a qualified archaeologist has inspected the resource and made a determination of significance. If any resource is found to be significant, the archaeologist will prepare a cultural resources treatment plan which will outline the required method of recordation and preservation of the resource.

The proposed project will have a less than significant impact on prehistoric and historic resources. **(Less Than Significant Impact)**

4.7.3 Mitigation and Avoidance Measures for Cultural Resources

The project has incorporated the following guidelines:

- Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California, in the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner shall be notified and shall make a

[13] Archaeological site indicators can include but are not limited to: evidence of buried topsoil layers, evidence of fires (ash, charcoal, fire affected rock or earth), concentrations of stone, bone, or shellfish in buried topsoil horizons or layers or silt, artifacts of these materials, and burials, either human or animal.

determination as to whether the remains are Native American. If the Coroner determined that the remains are not subject to his authority, he shall notify the Native American Heritage Commission who shall attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to State law, then the land owner shall re-intern the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

- In the event that any archaeological site indicators are found, work will be stopped within 50 feet of the discovery until a qualified archaeologist has inspected the resource and made a determination of significance. If the resource is determined to be insignificant, work can resume with no further action. If the resource is determined to be significant, then recommendations for recordation and preservation of the resource will be made by the archaeologist and a data recovery work plan will be prepared and submitted to the City Planning Department for approval. Construction work will not be allowed within the designated 50-foot zone until the archaeologist completes the data recovery.

4.7.4 Conclusion

Implementation of the proposed project will have a less than significant impact on cultural resources. **(Less Than Significant Impact)**

4.8 TRANSPORTATION AND CIRCULATION

The information provided in this section is based on a traffic analysis prepared by *Hexagon Transportation Consultants* in April 2006. The complete traffic report is provided in Appendix G.

4.8.1 Existing Setting

4.8.1.1 Existing Roadway Network and Transportation Facilities

Regional access to the project site is provided via I-880, I-680, and SR 237/Calaveras Boulevard. These roadways are described below.

I-680 is a north/south freeway traversing the eastern portion of Milpitas. This freeway connects the inland East Bay communities to the north with San José to the south. I-680 has six mixed flow lanes north of SR 237 and eight mixed flow lanes south of SR 237. A southbound High Occupancy Vehicle (HOV) lane[14] is currently in operation north of Calaveras Boulevard.

I-880 is a north/south freeway providing regional access from East Bay cities to San José, where it becomes SR 17. Within the City of Milpitas, I-880 is a six-to-eight lane freeway. The initial construction phases of the SR 237/I-880 interchange have recently been completed. South of Montague Expressway, I-880 has recently been widened to six lanes.

State Route 237/Calaveras Boulevard is an east/west arterial between I-880 and I-680 and generally provides six travel lanes (four on the Union Pacific overcrossing). West of I-880, this facility becomes a freeway with four mixed flow lanes and two High Occupancy Vehicle (HOV) lanes. Calaveras Boulevard accommodates a significant amount of regional through traffic during the peak commute hours. Milpitas staff estimate that approximately 50 percent of the peak hour traffic between I-680 and I-880 is generated outside of Milpitas. The predominate direction of travel is westbound in the morning and eastbound during the afternoon.

Local Access

Local access to the site is provided by Montague Expressway, McCarthy Boulevard, Tasman Drive, Technology Drive, and Murphy Ranch Road. These roadways are described below.

Montague Expressway is an east/west expressway through southern Milpitas that connects through San José to US 101 in Santa Clara. Montague generally provides six travel lanes. It is operated by the Santa Clara County Roads and Airports Department. The peak direction of travel is westbound in the morning, and eastbound in the evening. This facility also provides HOV lanes both during the AM peak hours in the westbound direction and PM peak hours in the eastbound direction. Montague Expressway is a Santa Clara County Congestion Management Plan (CMP) facility that experiences moderate congestion during both commute periods.

McCarthy Boulevard is a four-lane divided north/south arterial connecting Montague Expressway in the south to Dixon Landing Road in the north. McCarthy Boulevard primarily serves as access to SR 237, Montague Expressway, and I-880 for several business parks.

[14] An HOV lane may also be referred to as a carpool lane.

Tasman Drive is a six-lane, east/west arterial extending through San José to Santa Clara and Sunnyvale via a bridge over the Coyote Creek. East of I-880, Tasman Drive becomes Great Mall Parkway. The Alum Rock to Santa Teresa Light Rail line runs down the center of Tasman Drive.

Technology Drive is a local two-lane, east/west, roadway that extends east from Murphy Ranch Road to McCarthy Boulevard where it becomes Bellew Drive. Bellew Drive is a four-lane roadway with a two-way-center-left-turn lane.

Murphy Ranch Road is a local two-lane roadway that extends from Technology Drive in the north to McCarthy Boulevard in the south. Parking is prohibited on both sides of the street. Direct access to the project site is proposed via four driveways from Murphy Ranch Road.

4.8.1.2 Existing Bicycle and Pedestrian Facilities

According to the City of Milpitas Bikeway Master Plan and the Valley Transportation Agency (VTA) Santa Clara Valley Bikeways Map, there are numerous city- and county-designated bikeways within the vicinity of the project site.

- McCarthy Boulevard has Class II bicycle lanes from Dixon Landing Road to Ranch Road (S). McCarthy Boulevard has Class III bicycle routes from Ranch Road (S) to Montague Expressway.

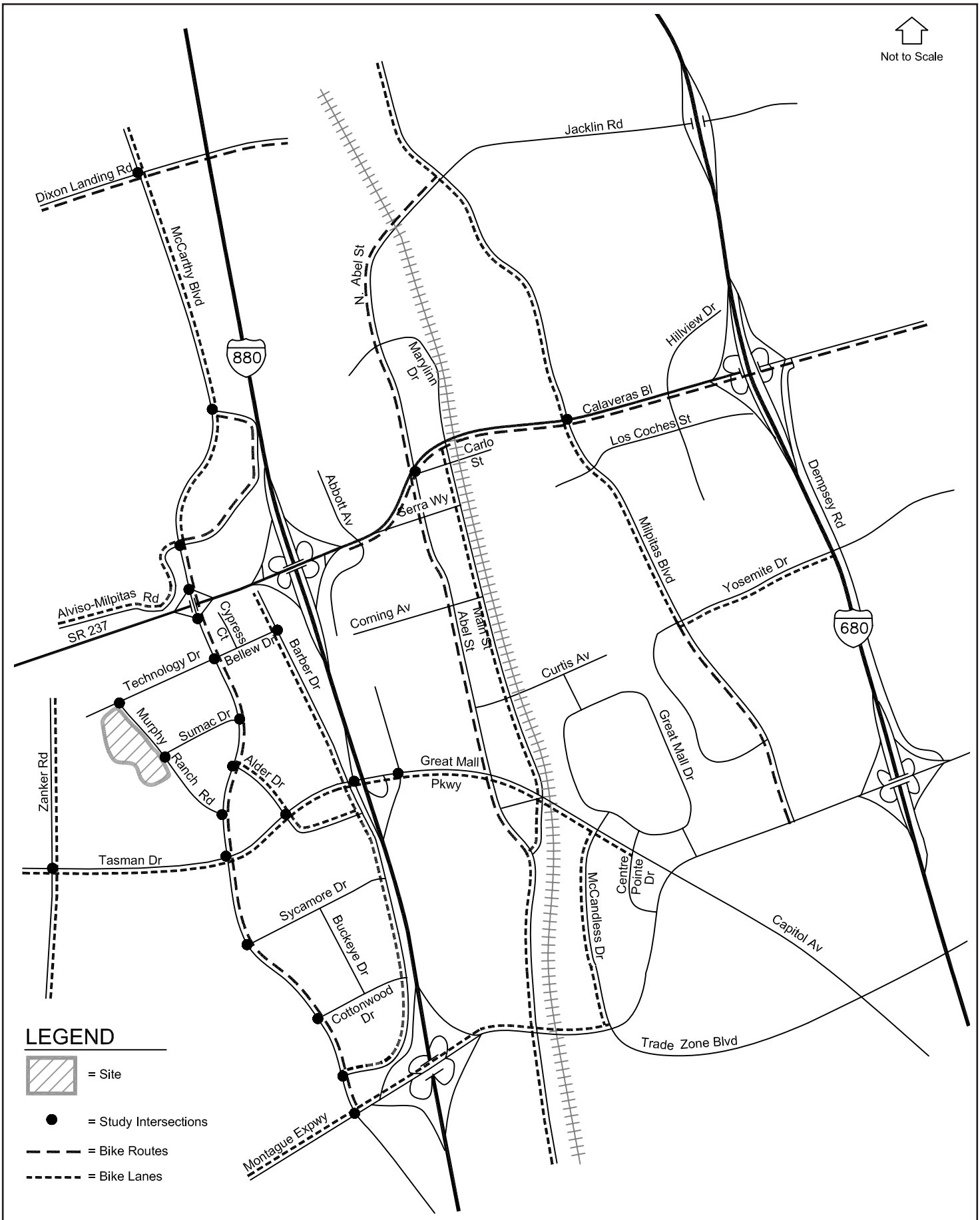
- Milpitas Boulevard has Class II bicycle lanes from the County line in the north to Yosemite Drive in the south, where it becomes a Class III route to Montague Expressway.

- Barber Lane has Class II bicycle lanes from Bellew Drive in the north to McCarthy Boulevard in the south.

- Ranch Drive has Class II bicycle lanes along its entirety.

- Great Mall Parkway/Tasman Drive has Class II bicycle lanes from Montague Expressway in the east to McCarthy Boulevard in the west, where it becomes a Class III route to Zanker Road.

Bicycle facilities are shown on Figure 7. Sidewalks are found along virtually all previously-described local roadways in the study area other than Technology Drive, and along the commercial streets and collectors near the site.



EXISTING BICYCLE FACILITIES FIGURE 7

4.8.1.3 Existing Transit Service

Existing transit service to the project area is provided by the VTA. The existing VTA service is described below and shown on Figure 8.

VTA Bus Service

The 33 line provides service between Tasman and 1st-Great Mall/Main Transit Center via McCarthy Boulevard, Bellew Drive, and Barber Lane, with 30-minute headways during commute hours.

The 330 line is a limited stop route that provides service between Almaden Expressway and Camden – North San Jose via Tasman Drive, with 40 to 60-minute headways during commute hours.

The 104 line is an express route that provides service between Penitencia Creek Transit Center and Palo Alto via SR 237, with 30 to 45-minute headways during commute hours.

The 120 line is an express route that provides service between the Fremont BART station and Lockheed Martin/Moffett Park via SR 237 and Abel Street, with 60 to 75-minute headways during commute hours.

The 140 line is an express route that provides service between the Fremont BART station and the Sunnyvale Caltrain station via Tasman Drive, with 30 to 60-minute headways during commute hours.

The 141 line is an express route that provides service between the Fremont BART station and Great America via SR 237 and I-880. This line operates on weekends only from March through October, with 30 to 90-minute headways.

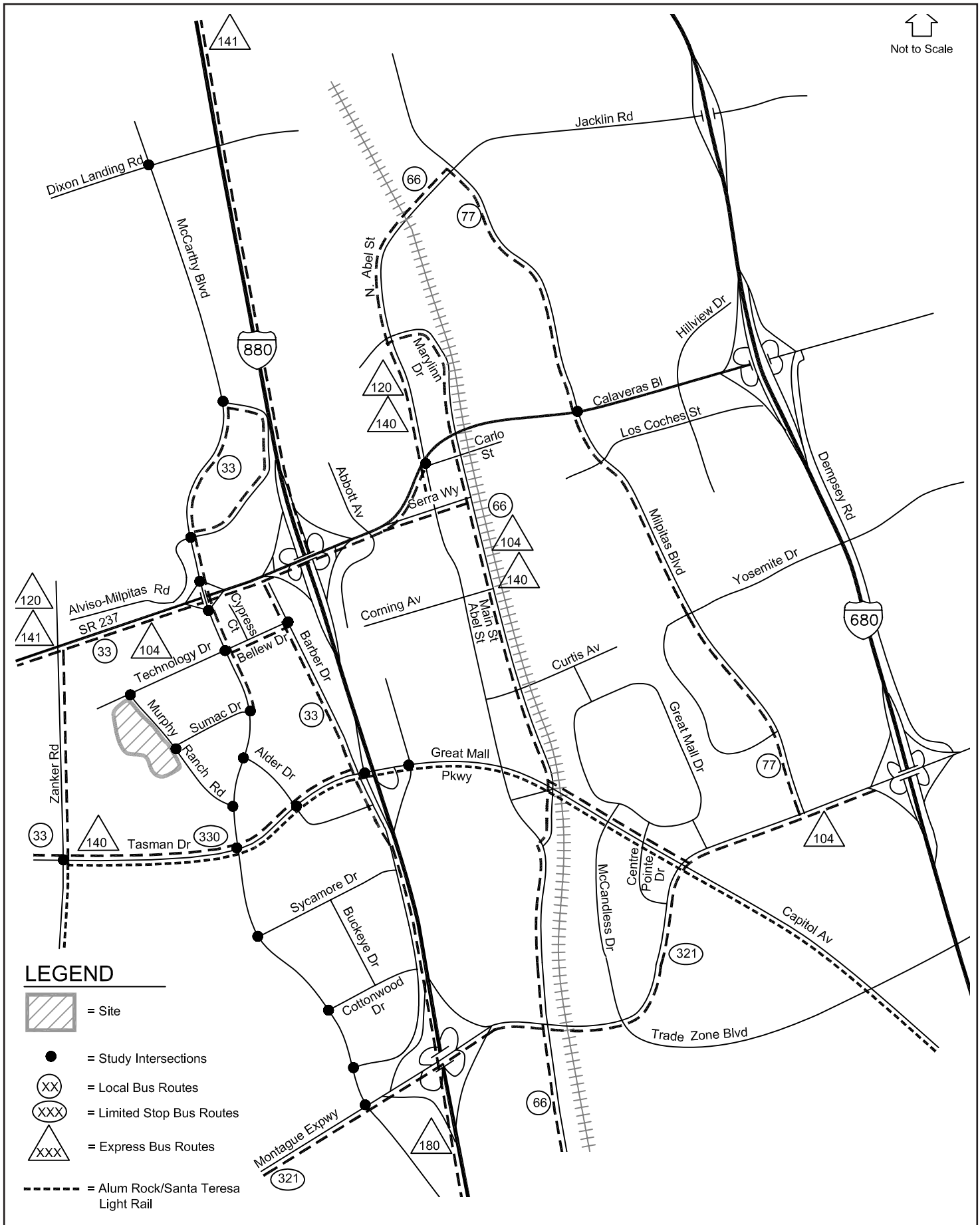
VTA Light Rail Transit (LRT) Service

There are five Capitol Corridor LRT stations located within approximately two miles of the project site. The Guadalupe Corridor LRT provides service on 15-minute headways during commute and midday hours. It provides service between Santa Teresa in south San Jose to Alum Rock in north San Jose.

The Cisco Way LRT station is located between McCarthy Boulevard and Zanker Road. The Cisco Way LRT station provides a direct connection to VTA bus service.

The I-880/Milpitas LRT station is located near Tasman Drive and Alder Drive. The I-880/Milpitas LRT station provides a direct connection to VTA bus service and offers bicycle lockers.

The Great Mall/Main LRT station is located near Main Street and Great Mall Parkway. The Great Mall/Main LRT station provides a direct connection to VTA bus service and offers bicycle lockers.



EXISTING TRANSIT FACILITIES FIGURE 8

The Baypointe LRT station is located between North 1st Street and Zanker Road. The Baypointe LRT station provides a direct connection to VTA bus service.

The Tasman LRT transfer station is located near the intersection of Tasman Drive and North 1st Street. The Tasman LRT station provides a direct connection to VTA bus service and transfers to the Mountain View – Winchester LRT line.

4.8.1.4 Existing Intersection Operations

Methodology

Traffic conditions at the study locations were evaluated using level of service (LOS). Level of service is a qualitative description of operating conditions ranging from LOS A, or free-flowing conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The correlation between average delay and level of service is shown in Tables 3 and 4.

In addition to the level of service evaluation, an assessment was made for unsignalized intersections to determine if the proposed project would have an impact on any unsignalized intersections in the project vicinity.

TABLE 3
Signalized Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Control Delay per Vehicle[15]
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	10.0 or less
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 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 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C/ ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 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. This is considered to be the limit of acceptable delay.	55.0 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	Greater than 80.0

[15] Measured in seconds.

TABLE 4 Unsignalized Intersection Level of Service Definitions Based on Delay		
Level of Service	**Description**	**Average Control Delay per Vehicle[16]**
A	Operations with very low delay occurring with favorable progression.	10.0 or less
B	Operations with low delay occurring with good progression.	10.1 to 20.0
C	Operations with average delays resulting from fair progression.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C/ ratios.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. This is considered to be the limit of acceptable delay.	55.0 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to over saturation and poor progression.	Greater than 80.0

Existing Intersection Levels of Service

The City of Milpitas considers intersection operations of LOS D or better to be acceptable. The CMP identifies LOS E or better as acceptable.

Analysis of the existing intersection operations concluded that all of the study intersections currently operate at an acceptable LOS except McCarthy Boulevard/Sumac Drive, which operates at LOS E during the PM Peak Hour. The results of the existing conditions analysis are summarized in Table 5. Intersections operating below relevant standards are denoted in bold.

TABLE 5 Existing Intersection Levels of Service				
Intersection	**AM Peak Hour**		**PM Peak Hour**	
	Delay	**LOS**	**Delay**	**LOS**
McCarthy Blvd and Ranch Dr (N)	6.6	A	10.8	B
McCarthy Blvd and Ranch Dr (S)	16.8	B	22.7	C
Abel St and SR 237 (Calaveras Blvd)*	37.3	D	38.2	D
Milpitas Blvd and SR 237 (Calaveras Blvd)*	55.8	E	40.0	D
McCarthy Blvd and Bellew Drive	19.0	B	33.6	C
McCarthy Blvd and Alder Drive	11.6	B	16.7	B
I-880 NB and Great Mall Parkway	24.6	C	19.3	B
I-880 SB and Tasman Drive	13.6	B	13.1	B
McCarthy Blvd and Tasman Drive	31.9	C	24.6	C
Alder Drive and Tasman Drive	14.9	B	36.9	D
McCarthy Blvd/O'Toole & Montague Expwy*	41.9	D	60.5	E
McCarthy Blvd and Barber Lane	9.8	A	19.7	B
McCarthy Blvd and Cottonwood Drive	13.0	B	15.5	B
McCarthy Blvd and Sycamore Drive	10.6	B	13.1	B

[16] Measured in seconds.

TABLE 5 *Continued* Existing Intersection Levels of Service				
Intersection	**AM Peak Hour**		**PM Peak Hour**	
	Delay	**LOS**	**Delay**	**LOS**
McCarthy Blvd and Dixon Landing Road	11.8	B	9.5	A
SR 237 and McCarthy Blvd (W)	15.2	B	16.6	B
SR 237 and McCarthy Blvd (E)	15.2	B	15.7	B
Barber Land and Bellew Drive	12.6	B	18.6	B
Murphy Ranch Road and Technology Drive**	7.7	A	7.4	A
Murphy Ranch Road and Sumac Drive**	8.9	A	8.9	A
McCarthy Blvd and Sumac Drive**	27.9	D	**46.8**	**E**
McCarthy Blvd and Murphy Ranch Road**	11.3	B	11.1	B
Zanker Road and Tasman Drive	34.3	C	35.7	D
** denotes a CMP Intersection* *** denotes an unsignalized intersection*				

4.8.1.5 Existing Freeway Operations

Traffic volumes for the study freeway segments were obtained from the 2004 CMP Annual Monitoring Report. The results of the analysis are summarized in Table 6 below. The results show that the following study freeway segments currently operate at LOS F[17] in at least one direction during at least one of the peak hours of traffic:

- I-880: Northbound (NB) between SR 237 and Dixon Landing Road – PM Peak Hour
- I-880: Southbound (SB) between Montague Expwy and Brokaw Road – PM Peak Hour
- SR 237: Westbound (WB) between McCarthy Blvd and Zanker Road – AM & PM Peak Hour

TABLE 6 Existing Freeway Levels of Service				
Freeway	**Segment**	**Direction**	**Peak Hour**	**LOS**
I-880	Brokaw Road to Montague Expwy	NB	AM PM	D C
I-880	Montague Expwy to Great Mall Pkwy	NB	AM PM	C C
I-880	Great Mall Pkwy to SR 237	NB	AM PM	D E
I-880	SR 237 to Dixon Landing Road	NB	AM **PM**	C **F**
SR 237	Zanker Road to McCarthy Blvd	EB	AM PM	D D
I-880	Dixon Landing Road to SR 237	SB	AM PM	D C
I-880	SR 237 to Great Mall Pkwy	SB	AM PM	D C

[17] For CMP freeway segments, LOS E or better is acceptable.

TABLE 6 *Continued* Existing Freeway Levels of Service				
Freeway	**Segment**	**Direction**	**Peak Hour**	**LOS**
I-880	Great Mall Pkwy to Montague Expwy	SB	AM PM	D E
I-880	Montague Expwy to Brokaw Road	SB	AM **PM**	C **F**
SR 237	McCarthy Blvd to Zanker Road	WB	**AM** **PM**	**F** **F**

4.8.1.6 Background Conditions

For the purpose of this analysis, it is assumed that the future near-term roadway network and intersection lane configuration under existing conditions would be same as the existing roadway network. Bicycle, transit, and pedestrian facilities under background conditions were assumed to remain unchanged from existing conditions.

Background peak-hour traffic volumes were calculated by adding estimated traffic from approved but not yet constructed development to the existing conditions.

Background Intersection Level of Service

Analysis of the background intersection operations found that four of the study intersections will operate at an unacceptable LOS with the addition of background traffic.

- The intersection of Milpitas Boulevard/SR 237 (Calaveras Blvd) would operate at LOS F during the AM peak hour.
- The intersection of Alder Drive/Tasman Drive would operate at LOS E during the AM peak hour and LOS F during the PM peak hours.
- The intersection of Montague Expressway/McCarthy Boulevard-O'Toole Avenue would operate at LOS F during the PM peak hour.
- The unsignalized intersection of McCarthy Boulevard/Sumac Drive would operate at LOS F during both the AM and PM peak hours.

The results of the analysis under background conditions are summarized in Table 7. Intersections operating below relevant standards are shown in bold.

TABLE 7 Background Intersection Levels of Service				
Intersection	**AM Peak Hour**		**PM Peak Hour**	
	Delay	**LOS**	**Delay**	**LOS**
McCarthy Blvd and Ranch Dr (N)	18.7	B	20.2	C
McCarthy Blvd and Ranch Dr (S)	19.2	B	43.1	D
Abel St and SR 237 (Calaveras Blvd)*	43.1	D	61.7	E
Milpitas Blvd and SR 237 (Calaveras Blvd)*	**82.3**	**F**	41.9	D
McCarthy Blvd and Bellew Drive	27.5	C	50.9	D

TABLE 7 *Continued* Background Intersection Levels of Service				
Intersection	**AM Peak Hour**		**PM Peak Hour**	
	Delay	**LOS**	**Delay**	**LOS**
McCarthy Blvd and Alder Drive	15.5	B	53.2	D
I-880 NB and Great Mall Parkway	44.4	D	29.1	C
I-880 SB and Tasman Drive	22.7	C	27.1	C
McCarthy Blvd and Tasman Drive	53.1	D	35.5	D
Alder Drive and Tasman Drive	21.4	C	**131.9**	**F**
McCarthy Blvd/O'Toole & Montague Expwy*	59.5	E	**133.6**	**F**
McCarthy Blvd and Barber Lane	9.6	A	20.6	C
McCarthy Blvd and Cottonwood Drive	15.4	B	16.1	B
McCarthy Blvd and Sycamore Drive	9.9	A	12.2	B
McCarthy Blvd and Dixon Landing Road	13.8	B	10.6	B
SR 237 and McCarthy Blvd (W)	15.2	B	19.6	B
SR 237 and McCarthy Blvd (E)	16.8	B	19.4	B
Barber Land and Bellew Drive	12.6	B	18.6	B
Murphy Ranch Road and Technology Drive**	7.7	A	7.4	A
Murphy Ranch Road and Sumac Drive**	8.9	A	8.9	A
McCarthy Blvd and Sumac Drive**	**SAT[18]**	**F**	**SAT**	**F**
McCarthy Blvd and Murphy Ranch Road**	11.5	B	12.6	B
Zanker Road and Tasman Drive	36.0	D	43.8	D
** denotes a CMP Intersection* *** denotes an unsignalized intersection*				

4.8.2 Traffic Impacts

4.8.2.1 Thresholds of Significance

For the purpose of this EIR, a traffic impact is considered significant if the project would:

- cause the level of service at any local intersection to degrade from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions; or
- cause the level of service at any local intersection to be an unacceptable LOS E or F under background conditions and the addition of project trips causes the critical-movement delay at the intersection to increase by four or more seconds and the demand-to-capacity ratio (V/C) to increase by .01 or more; or
- cause the level of service on any freeway segment to degrade from an acceptable LOS E or better under existing conditions to an unacceptable LOS F under project conditions; or
- add more than one percent of the existing freeway capacity to any freeway segment operating at LOS F under existing conditions; or
- substantially impede the operation of a transit system as a result of congestion; or
- create an operational safety hazard.

[18] SAT represents that the intersection is saturated and the delays are not meaningful.

4.8.2.2 Project Impacts

Trip Generation Rates

The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip generation rates used in the City of Milpitas are based on those recommended by the San Diego Association of Governments (SANDAG). Based on the residential rates recommended by SANDAG, the project would generate 362 trips during the AM peak hour and 430 trips in the PM peak hour. The project trip generation estimates are presented in Table 8 below.

TABLE 8
Project Trip Generation Estimates

Use	Am Peak Hour			PM Peak Hour		
	Trips			Trips		
	In	Out	Total	In	Out	Total
Multi-Family (285 units)	36	146	182	160	68	228
Apartments (374 units)	36	144	180	141	61	202
Total Residential	72	290	362	301	129	430

Intersection Level of Service Analysis

The results of the level of service analysis show that five of the study intersections would operate at an unacceptable LOS under project conditions.

- The intersection of Milpitas Blvd/SR237 (Calaveras Blvd) would continue to operate at LOS F during the AM Peak Hour.
- The intersection of McCarthy Boulevard/Tasman Drive would deteriorate from LOS D to LOS E during the AM Peak Hour.
- The intersection of Alder Drive/Tasman Drive would continue to operate at LOS F during the PM Peak Hour.
- The intersection of Montague Expwy/McCarthy Blvd-O'Toole Avenue would continue to operate at LOS F during the PM Peak Hour.
- The unsignalized intersection of McCarthy Boulevard/Sumac Drive would continue to operate at LOS F during both the AM and PM Peak Hours.

The remaining study intersections would operate at LOS D or better. The results of the level of service analysis under project conditions are summarized in Table 9.

TABLE 9 Project Intersection Levels of Service								
Intersection	**Background**				**Project**			
	AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
McCarthy Blvd and Ranch Dr (N)	18.7	B	20.2	C	18.7	B	20.2	C
McCarthy Blvd and Ranch Dr (S)	19.2	B	43.1	D	19.3	B	44.1	D
Abel St and SR 237 (Calaveras Blvd)*	43.1	D	61.7	E	43.3	D	62.2	E
Milpitas Blvd and SR 237 (Calaveras Blvd)*	82.3	F	41.9	D	82.9	F	42.2	D
McCarthy Blvd and Bellew Drive	27.5	C	50.9	D	28.9	C	54.8	D
McCarthy Blvd and Alder Drive	15.5	B	53.2	D	15.2	B	54.2	D
I-880 NB and Great Mall Parkway	44.4	D	29.1	C	45.1	D	29.2	C
I-880 SB and Tasman Drive	22.7	C	27.1	C	22.9	C	27.3	C
McCarthy Blvd and Tasman Drive	53.1	D	35.5	D	**57.9**	**E**	36.8	D
Alder Drive and Tasman Drive	21.4	C	131.9	F	21.7	C	132.9	F
McCarthy Blvd/O'Toole & Montague Expwy*	59.5	E	133.6	F	60.7	E	137.4	F
McCarthy Blvd and Barber Lane	9.6	A	20.6	C	9.7	A	20.8	C
McCarthy Blvd and Cottonwood Drive	15.4	B	16.1	B	15.6	B	16.4	B
McCarthy Blvd and Sycamore Drive	9.9	A	12.2	B	10.9	B	12.2	B
McCarthy Blvd and Dixon Landing Road	13.8	B	10.6	B	14.1	B	10.9	B
SR 237 and McCarthy Blvd (W)	15.2	B	19.6	B	15.5	B	20.2	C
SR 237 and McCarthy Blvd (E)	16.8	B	19.4	B	17.0	B	20.1	C
Barber Land and Bellew Drive	12.6	B	18.6	B	12.6	B	18.6	B
Murphy Ranch Road and Technology Drive**	7.7	A	7.4	A	8.2	A	8.2	A
Murphy Ranch Road and Sumac Drive**	8.9	A	8.9	A	11.2	B	11.2	B

TABLE 9 *Continued* Project Intersection Levels of Service								
Intersection	**Background**				**Project**			
	AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
McCarthy Blvd and Sumac Drive**	SAT	F	SAT	F	SAT	F	SAT	F
McCarthy Blvd and Murphy Ranch Road**	11.5	B	12.6	B	13.5	B	14.0	B
Zanker Road and Tasman Drive	36.0	D	43.8	D	36.5	D	44.8	D
** denotes a CMP Intersection* *** denotes an unsignalized intersection*								

All of the study intersections that operate below LOS D under project conditions, also operated below LOS D under background conditions and, in some cases, existing conditions. Based on the thresholds of significance identified earlier in this section, only one intersection, McCarthy Blvd/Tasman Drive, would be significantly impacted by the proposed project. Project traffic will cause the AM Peak Hour LOS to decay from LOS D to LOS E.

Implementation of the proposed project would have a significant impact on the intersection of McCarthy Blvd/Tasman Drive by causing the intersection to fall from LOS D to LOS E during the AM Peak Hour. **(Significant Impact)**

Freeway Segment Analysis

Under project conditions, traffic volumes on the study freeway segments were estimated by adding the project trips to the existing traffic volumes obtained from the 2004 CMP Annual Monitoring Report. The results of the freeway analysis are summarized in Table 11 of Appendix G. The results show that the project would not cause a significant increase in traffic volume (more than one percent of capacity) on any of the study freeway segments.

The project will not significantly impact the LOS of any freeway segment or add more than one percent of the current roadway capacity to any freeway segment. **(Less Than Significant Impact)**

4.8.2.3 Operational Conditions

Signal Warrant Analysis

The peak hour signal warrant was checked for the four unsignalized intersections to determine whether signalization would be justified on the basis of project peak hour volumes. The analysis showed that under project conditions the intersection of McCarthy Blvd/Murphy Ranch Road would meet the signal warrant during the PM Peak Hour. The other three unsignalized intersections do not meet the Peak Hour volume warrant.

All-way stop control was evaluated for the intersection of Sumac Drive and Murphy Ranch Road. This assessment was made on the basis of the "Mulitway Stop Applications" section (Section 2B.07) of the *2003 Manual on Uniform Traffic Control Devices (MUTCD)*. This method makes no evaluation of intersection level of service, but simply provides an indication whether the traffic conditions would be sufficient to justify installation of an all-way stop control. One of the criteria states that the intersection minor street approaches must average at least 200 movements per hour for a total of 8 hours. During the highest traffic hour of the day at the intersection, under project conditions, the total of the minor street approaches would be only 104 vehicles per hour. Therefore, the warrant would not be satisfied.

Site Access

The proposed site plan shows three project driveways on Murphy Ranch Road and one project driveway on Technology Drive. There would also be an emergency access only driveway on Murphy Ranch Road and Technology Drive. Driveways A and B would be located on Murphy Ranch Road and would provide access to the townhouse development. Driveway C would be located on Murphy Ranch Road and would provide access to the six-story parking garage of the apartment complex. Driveway D would be located on Technology Drive approximately 340 feet west of Murphy Ranch Road. It would provide direct access to the apartment parking garage via the north side of the project site. All project driveways would contain one inbound lane and one outbound lane.

The traffic volumes on Murphy Ranch Road are relatively low and project traffic would experience little delay upon entering or exiting the site. It is estimated that outbound vehicle queues at the project driveways would rarely exceed two vehicles.

ITE standards for design and location of driveways are described below.

- Widths between 30 to 40 feet and 15-feet radii (driveways with low-volume activity may have widths of 24 feet, providing that 20-foot radii are used).
- Spacing of at least 35 feet apart.
- 51-150 feet of frontage for two driveways, 151-500 feet for 3 driveways.

Based on the current site plan, the project would meet these criteria with the following exception.

- The alignment of the proposed project driveway at the northern end of the townhouse site is slightly offset from the existing driveway on the opposite side of the street. Generally, it is desirable for all opposing roadways to line up at their centerlines, or be offset sufficiently to allow for proper vehicle channelization. At intersections that are not properly aligned, the travel paths of left-turns could conflict (i.e. the travel paths of opposing left-turns occupy the same physical space). However, it appears that the alignment would be adequate to allow for safe travel paths. The bulb-noses of the proposed medians should be further evaluated to ensure adequate space is provided to allow for safe left-turns into the site.

As designed, the proposed site access would not result in an operational safety impact.

On-Site Circulation

The townhouse development (Murphy Ranch South) would have a street layout consisting of four primary roads. Two roadways would run east/west and link the project driveways to

Murphy Ranch Road. The two remaining roadways would run north/south between the two east/west roadways. The apartment development (Murphy Ranch North) will contain a multi-level parking structure accessed by two driveways.

The townhouse development site plan shows several dead-end aisles which are undesirable because if no parking is available drivers must back out or do a three-point turn to exit the aisle. Turn-arounds should be provided in residential developments when needed for emergency vehicles, garbage collection, or visitor parking. While the lack of turn-arounds may be inconvenient for guests parking on-site, this would not create an operational safety impact.

Parking

Parking for the proposed project would be provided on-site in a parking garage for the apartment residents and in private garages for the townhouse residents. Based on the City of Milpitas Zoning Ordinance, the apartment development would be required to meet the following parking standard:

- 1.0 parking spaces per studio units
- 1.5 parking spaces per one-bedroom units
- 2.0 parking spaces per two-bedroom units
- 2.0 parking spaces per three-bedroom units

In addition to the resident parking, the apartment development (Murphy Ranch North) is also required to provide guest parking equal to 15 percent of the total resident parking. This results in a total parking requirement of 756 total spaces (657 resident and 99 guest). The Murphy Ranch North project proposes a total of 760 parking spaces in the garage (661 resident and 99 guest). The townhouses (Murphy Ranch South) are required to provide two parking spaces per unit and guest parking equal to 20 percent of the total residential parking. This results in a total parking requirement 684 total spaces (570 resident and 114 guest). The Murphy Ranch South project will provide a total of 685 parking spaces of which 570 will be in private two-car garages and 115 will be surface parking spaces within the development for guests. The proposed project will meet the City of Milpitas parking requirement.

No environmental impacts were identified as resulting from operations of the travel system or parking. **(Less Than Significant Impact)**

4.8.3 Mitigation and Avoidance Measures

4.8.3.1 General Plan Policies

The programs and policies of the City of Milpitas General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Development on-site will be subject to General Plan programs and policies, including the following:

- *Street Network and Classification Policy 3.b.I.1:* Require new development to pay its share of street and other traffic improvements based on its impact.

- *Street Network and Classification Policy 3.b.I.2:* Require all projects that generate more than 100 peak-hour trips to submit a transportation impact analysis that follows guidelines established by CMP.

4.8.3.2 Project Specific Mitigation Measures

The following mitigation measure is proposed as part of the project to reduce the identified traffic impact to less than significant.

- The southbound lanes of McCarthy Boulevard will be re-striped, to the satisfaction of the City's Director of Public Works. The existing configuration is two left-turn lanes, one through lane, and one shared right/through lane. The shared right/through lane would be changed to a designated right-turn only lane, allowing the intersection to operate at LOS D in the AM Peak Hour and LOS C in the PM Peak Hour. An overlap phase for the southbound right turn movement would also be included at the McCarthy Boulevard/Tasman Drive.

4.8.4 Conclusion

If approved by the City, implementation of the proposed mitigation along with the identified General Plan policies would reduce the McCarthy Blvd/Tasman Drive LOS impact to a less than significant level. If the City does not allow the restriping, this is a significant unavoidable impact. (Significant Impact)

4.9 AIR QUALITY

The information provided in this section is based on an air quality analysis prepared by *Don Ballanti, Certified Meteorologist* in May 2006. The complete report is provided in Appendix H.

4.9.1 Existing Setting

The amount of a given pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sun light.

Northwest winds and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by autos and factories from upwind areas of the Peninsula toward Milpitas, particularly during the summer months. Winds are lightest on the average in fall and winter. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can build up.

Pollutants can be diluted by mixing in the atmosphere both vertically and horizontally. Vertical mixing and dilution of pollutants are often suppressed by inversion conditions, when a warm layer of air traps cooler air close to the surface. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of the time in both the morning and afternoon. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

Topography can restrict horizontal dilution and mixing of pollutants by creating a barrier to air movement. The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Hayward Hills on either side of the South Bay restrict horizontal dilution, and this alignment of the terrain also channels winds from the north to south, carrying pollution from the northern Peninsula toward San José.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution and terrain that restrict horizontal dilution give Milpitas a relatively high atmospheric potential for pollution compared to other parts of the San Francisco Bay Air Basin and provide a high potential for transport of pollutants to the east and south.

4.9.1.1 Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Table 10 identifies the major criteria pollutants, characteristics, health effects, and typical sources.

TABLE 10
Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sun light on ozone precursors. Often called photochemical smog.	- Eye Irritation - Respiratory function impairment	The major sources of ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	- Impairment of oxygen transport in the bloodstream - Aggravation of cardiovascular disease - Fatigue, headache, confusion, dizziness - Can be fatal in the case of very high Concentrations	Automobile exhaust, combustion of fuels, combustion of wood in wood stoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	- Increased risk of acute and chronic respiratory disease	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	- Aggravation of chronic obstruction lung disease - Increased risk of acute and chronic respiratory disease	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter	Solid and liquid particles of dust, soot, aerosols and other matter that are small enough to remain suspended in the air for a long period of time.	- Aggravation of chronic disease and heart/lung disease symptoms	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

The federal and California state ambient air quality standards are summarized in Table 11 for important pollutants. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter (PM_{10} and $PM_{2.5}$).

TABLE 11
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard[19]	State Standard
Ozone	1-Hour 8-Hour	--- 0.08 PPM	0.09 PPM 0.07 PPM
Carbon Dioxide	8-Hour 1-Hour	9.0 PPM 35.0 PPM	9.0 PPM 20.0 PPM
Nitrogen Dioxide	Annual Average 1-Hour	0.05 PPM ---	--- 0.25 PPM
Sulfur Dioxide	Annual Average 24-Hour 1-Hour	0.03 PPM 0.14 PPM ----	--- 0.04 PPM 0.25 PPM
PM_{10}	Annual Average 24-Hour	50 $\mu g/m^3$ 150 $\mu g/m^3$	20 $\mu g/m^3$ 50 $\mu g/m^3$
$PM_{2.5}$	Annual 24-Hour	15 $\mu g/m^3$ 65 $\mu g/m^3$	12 $\mu g/m^3$ ---
Lead	Calendar Quarter 30-day Average	1.5 $\mu g/m^3$ ---	--- 1.5 $\mu g/m^3$
Sulfates	24-Hour	---	25 $\mu g/m^3$
Hydrogen Sulfide	1-Hour	---	0.03 PPM
Vinyl Chloride	24-Hour	---	0.01 PPM

The U.S. Environmental Protection Agency established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The existing 1-hour ozone standard of 0.12 PPM or less is to be phased out and replaced by an 8-hour standard of 0.08 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U. S. Supreme Court in a decision issued in February of 2001. However, the new federal ozone standard is not yet in effect pending adoption of implementing regulations.

Suspended particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. "Inhalable" PM consists of particles less than 10 microns in diameter, and is defined as "suspended particulate matter" or PM_{10}. Fine particles are less than 2.5 microns in diameter ($PM_{2.5}$). $PM_{2.5}$, by definition, is included in PM_{10}.

[19] PPM = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

In 1997 new national standards for fine Particulate Matter were adopted for 24-hour and annual averaging periods. The current PM_{10} standards were to be retained, but the method and form for determining compliance with the standards were to be revised. Implementation of this standard was delayed by litigation and will not occur until the
U. S. Environmental Protection Agency has issued court-approved guidance.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants.

4.9.1.2 Ambient Air Quality

The Bay Area Air Quality Management District (BAAQMD) monitors air quality at several locations within the San Francisco Bay Air Basin. The closest multi-pollutant monitoring station to the project site is the Jackson Street monitoring station in downtown San José. Table 12 summarizes exceedences of state and federal standards at the downtown San José monitoring site during the period 2001-2003. Table 12 shows that ozone and PM_{10} exceed the state standards in the South Bay. Violations of the carbon monoxide standards had been recorded at the downtown San José site prior to 1992.

TABLE 12
Number of Ambient Air Quality Standards Violations and Highest Concentrations (2003 - 2005)

Pollutant	Standard	Days Exceeding Standard		
		2003	2004	2005
Ozone	Federal 1-Hour	0	0	0
Ozone	State 1-Hour	4	0	1
Ozone	Federal 8-Hour	0	0	0
Carbon Monoxide	State/Federal 8-Hour	0	0	0
Nitrogen Dioxide	State 1-Hour	0	0	0
PM_{10}	Federal 24-Hour	0	0	0
PM_{10}	State 24-Hour	3	4	1
$PM_{2.5}$	Federal 24-Hour	0	0	0

Source: California Air Resources Board, Aerometric Data Analysis and Management System, 2006

Of the three pollutants known at times to exceed the state and federal standards in the project area, two are regional pollutants. Both ozone and particulate matter (PM_{10} and $PM_{2.5}$) are considered regional pollutants because the concentrations are not determined by proximity to individual sources, but show a relative uniformity over a region. Thus, the data shown in Table 12 for ozone and PM_{10} provide a good characterization of levels of these pollutants on the project site.

Carbon monoxide is considered a local pollutant because elevated concentrations are usually only found near the source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes.

4.9.1.3 Attainment Status and Regional Air Quality Plans

Both the Federal Clean Air Act and the California Clean Air Act of 1988 require that the State Air Resources Board, based on air qua lity monitoring data, designate portions of the state where federal or state ambient air quality standards are not met as "nonattainment areas." Because of the differences between the national and state standards, the designation of "nonattainment areas" is different under the federal and state legislation. The Bay Area is currently in nonattainment for the federal 1-hour ozone standard. However, in April 2004, U.S. EPA made a final finding that the Bay Area has attained the national 1-hour ozone standard. The finding of attainment does not mean the Bay Area has been reclassified as an attainment area for the 1-hour standard yet, however.

Under the California Clean Air Act, Santa Clara County is a nonattainment area for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The county is either in attainment or unclassified for other pollutants.

4.9.1.4 Sensitive Receptors and Major Air Pollutant Sources

BAAQMD defines sensitive receptors as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. These land uses include residences, schools, playgrounds, child care centers, retirement homes, convalescent homes, hospitals, and medical clinics. There are no sensitive receptors adjacent to the project site, although the project will create a sensitive receptor population if it is approved and built. Within one-quarter mile of the project site is the Cisco Daycare Facility, Agnew Mental Health Facility, and residential housing in north San José. Populations at these locations would be considered sensitive receptors.

4.9.1.5 Odors

The proposed project site is located within close proximity (approximately 3.5 miles southeast) to the San José/Santa Clara Water Pollution Control Plant, which is located at 700 Los Esteros Road in San José. A report of odor complaints from January 2001 to April 2005 was reviewed and found that while odor complaints have been filed within the project area (approximately 2.5 miles to the southwest, four miles to the west, and 2.5 miles to the north of the project site), none of the complaints came from properties directly adjacent to the project site or south/southeast of the project site. The prevailing winds in the area travel to the southeast.

4.9.2 <u>Air Quality Impacts</u>

4.9.2.1 Thresholds of Significance

For the purposes of this EIR, an air quality impact is considered significant if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan,
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- 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 threshold for ozone precursors),
- Expose sensitive receptors to substantial pollutant concentrations, or
- Create objectionable odors affecting a substantial number of people.

BAAQMD CEQA Guidelines[20] provide the following definitions of a significant air quality impact:

- A project contributing to carbon monoxide (CO) concentrations exceeding the State Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours or 20 ppm for 1 hour would be considered to have a significant impact.
- A project that generates criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds would be considered to have a significant air quality impact. The current thresholds are 15 tons/year or 80 pounds/day for Reactive Organic Gases (ROG), Nitrogen Oxides (NO_x) or PM_{10}. Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.
- Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.
- Any project with the potential to expose sensitive receptors or the general public to substantial levels of toxic air contaminants would be deemed to have a significant impact.

Despite the establishment of both federal and state standards for $PM_{2.5}$, BAAQMD has not developed a threshold of significance for this pollutant. For this analysis, $PM_{2.5}$ impacts would be considered significant if project emissions of PM_{10} exceed 80 pounds per day.

The BAAQMD significance threshold for construction dust impacts is based on the degree to which the project includes appropriate construction control measures. The BAAQMD guidelines identify feasible control measures for construction emissions of PM_{10}. If the appropriate construction controls are to be implemented, then air pollutant emissions for construction activities would be considered less than significant.

4.9.2.2 Regional Impacts

Clean Air Plan

For the purposes of determining significance for a plan or revisions to a plan, BAAQMD has determined that air quality impacts would not be significant if the plan or plan revision(s) is consistent with the most recently adopted Clean Air Plan (CAP). Local plans found consistent with the CAP would have a less than significant impact on air quality. A plan or plan amendment is consistent with the CAP if: 1) population growth for the jurisdiction will not exceed the values included in the current CAP; 2) the rate of increase in vehicle miles traveled for the jurisdiction is equal to or lower than the rate of increase in population; and 3) the plan demonstrates reasonable efforts to implement those transportation control measures (TCMs) in

[20] Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, 1996 (Revised Dec. 1999).

the CAP. The current CAP, the 2005 Bay Area Ozone Strategy, was adopted by BAAQMD in January 2006.

The proposed General Plan amendment would allow up to 659 multi-family residential units to be constructed on an in-fill site. Currently, the site is undeveloped but is zoned *Industrial Park*. The proposed General Plan amendment would result in a population increase of approximately 770 persons (assuming 2.7 persons per household).

While the proposed General Plan amendment would exceed the population projects in the current CAP by 0.1 percent, the project site is an infill location near employment centers and is served by existing public transit. Infill, high-density development near transit is a key goal in "smart growth" initiatives put forth by BAAQMD, ABAG, and the Metropolitan Transportation Commission (MTC).

Table 13 lists the CAP TCMs that include cities as implementing agencies. Cities are not the only implementing agencies for these TCMs; other agencies include counties, BAAQMD, MTC, Congestion Management Agencies, and school districts.

The proposed General Plan amendment cannot individually implement all of the listed TCMs, but the City's General Plan does include all those that are consistent with the City's responsibility. Virtually all of these measures are already reflected in existing General Plan policies, which are the basis of mitigation for all land use impacts in Milpitas. It is evident that the overall goals of the project generally support the underlying purpose for the TCMs.

TABLE 13
CAP Transportation Control Measures to be Implemented by Cities

Transportation Control Measures	Description
1. Expand Employee Assistance Program	• Provide assistance to regional and local ridesharing organizations.
9. Improve Bicycle Access and Facilities	• Improve and expand bicycle lane system by providing bicycle access in plans for all new road construction or modification. • Establish and maintain bicycle advisory committees in all nine Bay Area counties. • Designate a staff person as a Bicycle Program Manager. • Develop and implement comprehensive bicycle plans. • Encourage employers and developers to provide bicycle access and facilities. • Provide bicycle safety education.
12. Improve Arterial Traffic Management	• Study signal preemption for buses on arterials with high volume of bus traffic. • Improve arterials for bus operations and to encourage bicycling and walking. • Continue and expand local signal timing programs, only where air quality benefits can be demonstrated.

TABLE 13 *Continued* CAP Transportation Control Measures to be Implemented by Cities	
Transportation Control Measures	**Description**
15. Local Clean Air Plans, Policies and Programs	• Incorporate air quality beneficial policies and programs into local planning and development activities, with a particular focus on subdivision, zoning and site design measures that reduce automobile trips.
17. Conduct Demonstration Projects	• Promote demonstration projects to develop new strategies to reduce motor vehicle emissions. Projects include: low emission vehicle (LEV) fleets and LEV refueling infrastructure.
19. Pedestrian Travel	• Review/revise general/specific plan polices to promote development patterns that encourage walking and circulation policies that emphasize pedestrian travel and modify zoning ordinances to include pedestrian-friendly design standards. • Include pedestrian improvements in capital improvement programs. • Designate a staff person as a Pedestrian Program Manager.
20. Promote Traffic Calming Measures	• Include traffic calming strategies in the transportation and land use elements of general and specific plans. • Include traffic calming strategies in capital improvement programs.

The project is technically inconsistent with the CAP because it would change the population base. If the project is not consistent with the population projections, it could have a significant impact on regional air quality under the BAAQMD threshold. This technical inconsistency would exist until the ABAG projections are updated to include the revised land use designations and the regional air quality plan is updated to reflect those projections.

4.9.2.3 Project Specific Regional Impacts

Vehicle trips generated by the project would result in air pollutant emissions affecting the entire San Francisco Bay Air Basin. The incremental daily emission increase associated with project land uses is identified in Table 14 for Reactive Organic Gases (ROG) and Nitrogen Oxides (NOx) which are two precursors of ozone, and PM_{10}.

TABLE 14 Projected Regional Emissions in Pounds Per Day (PPD)			
Project Scenario	**Reactive Organic Gases**	**Nitrogen Oxides**	**PM_{10}**
Proposed Project	58.3	51.6	44.3
BAAQMD Significance Threshold	80.0	80.0	80.0

Proposed project emissions shown in Table 14 would not exceed the thresholds of significance identified, so the proposed project would have a less than significant effect on regional air quality.

Implementation of the proposed project would result in an increase in daily regional emissions but the increased emissions would not exceed established thresholds. **(Less Than Significant Impact)**

4.9.2.4 Local Impacts

The project would increase traffic on the local street network, changing carbon monoxide levels along roadways used by project traffic. Carbon monoxide is an odorless, colorless poisonous gas whose primary source in the Bay Area is automobiles. Concentrations of this gas are highest near intersections of major roads.

Carbon monoxide concentrations under worst-case meteorological conditions have been predicted for several signalized intersections affected by the project. PM peak traffic volumes were applied to a screening form of the CALINE-4 dispersion model to predict maximum 1-and 8-hour concentrations near these intersections. The model results were used to predict the maximum 1-and 8-hour concentrations, corresponding to the 1- and 8-hour averaging times specified in the state and federal ambient air quality standards for carbon monoxide.

Table 15 shows the results of the carbon monoxide analysis for the peak 1-hour and 8-hour traffic periods in parts per million (PPM) at congested intersections that would be impacted by project traffic. The 1-hour values are to be compared to the federal 1-hour standard of 35 PPM and the state standard of 20 PPM. The 8-hour values in Table 15 are to be compared to the state and federal standard of 9 PPM.

TABLE 15
Worst Case Carbon Monoxide Concentrations Near Selected Project Intersections, in PPM

Intersection	Existing		Existing & Background		Existing, Background & Project	
	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr
McCarthy/Montague	9.6	6.5	11.2	7.7	11.3	7.7
Abel/Calaveras	10.8	7.3	11.5	7.8	11.5	7.8
Calaveras/Milpitas	11.2	7.6	12.1	8.3	12.2	8.3
McCarthy/Bellew	8.9	6.0	9.9	6.7	10.1	6.9
McCarthy/Tasman	9.0	6.0	10.3	7.0	10.4	7.1
Alder/Tasman	9.3	6.3	11.5	7.8	11.6	7.9
Most Stringent Standard	20.0	9.0	20.0	9.0	20.0	9.0

Table 15 shows that existing predicted carbon monoxide concentrations near the study intersections meet the 1-hour and 8-hour standards. Concentrations with background traffic would increase by as much as 1.6 PPM above existing levels. Traffic from the proposed project would further increase concentrations by up to 0.2 PPM; however, concentrations would remain below the most stringent state or federal standards. Since project traffic would not cause any new violations of the 1-hour or 8-hour standards for carbon monoxide, nor contribute substantially to an existing or projected violation, project impacts on local carbon monoxide concentrations are considered to be less than significant.

Implementation of the proposed project would not result in carbon monoxide concentrations above established state or federal standards. **(Less Than Significant Impact)**

4.9.2.5 Diesel Exhaust Impacts

The project is located within an industrial area. The current inventory of Toxic Air Contaminant (TAC) emissions maintained by the BAAQMD lists KLA Tencor as the only source of TACs within one-fourth mile of the project site. This facility is adjacent to the northern boundary of the project site. This TAC source is not identified as a priority source requiring preparation of a health risk assessment or notification under the Air Toxics "Hot Spots" Information and Assessment Act.[21]

There are several diesel backup generators in the project vicinity to provide power in the case of a power outage. More importantly, there are two diesel-powered stormwater pumping stations located at the northwest and southwest corners of the site. The pumping station at the northwest corner of the site utilizes three 750-horsepower diesel engines to pump collected stormwater into Coyote Creek. The pumping station at the southwest corner of the site utilizes three 335-horsepower diesel engines. These engines were installed in 1986 and represent "dirty" diesel technology. These engines were permitted by BAAQMD. Because the permits pre-date TAC controls, the facilities have not been subject to a Health Risk Assessment. There is no set number of days per year that the engines operate. The engines operate as needed during the rainy season.

In 1998 the California Air Resources Board (CARB) identified particulate matter from diesel-fueled engines as a TAC. To reduce public exposure to diesel particulate, in 2000 CARB approved the *Risk Reduction Plan to Reduce Matter Emissions from Diesel-Fueled Engines and Vehicles*.[22] As part of the plan, CARB adopted an Airborne Toxic Control Measure (ATCM) for stationary diesel engines in February 2004. Private businesses and public agencies operating four or more stationary prime and emergency standby diesel engines (in a single location) in California are required to reduce emissions from these engines down to specified limits by January 2009 by either retrofitting existing engines with control devices or replacing existing engines with new equipment that meets the standards.

The approval of the project would place a residential building within 120 feet of the pump plant exhaust at the northwest corner of the project site and within 150 feet of the pump plant exhaust at the southwest corner of the project site. Because of the size of the diesel engines at the facility northwest of the project, their proximity to future residences and their upwind location under the prevailing northwest wind direction, implementation of the proposed project would have unacceptably high health risks for future residents due to diesel exhaust exposure.[23]

Because the northwest pump station only has three engines on-site, the law requiring the current pump station engines to be upgraded or replaced by January 2009 does not apply. At this time

[21] Bay Area Air Quality Management District, Toxic Air Contaminant Control Program Annual Report 2002, June 2004.
[22] California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000.
[23] Randy Frazier, Senior Engineer, Bay Area Air Quality Management District, personal communication May 18, 2006.

there are no plans to upgrade or retrofit the existing diesel engines. Therefore, exhaust from the pump station will have a significant impact on the proposed residences.

Implementation of the proposed project would result in sensitive receptors being exposed to toxic air contaminants due to the project's proximity to an existing pump station. **(Significant Impact)**

4.9.2.6 Odor Impacts

The project would place new residences generally downwind of existing odor sources including the San José/Santa Clara Water Pollution Control Plant and the Newby Island Landfill. As discussed in the *BAAQMD CEQA Guidelines,* "While odors rarely cause any physical harm, they still can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local government and the District." A project that could expose member of the public to frequent objectionable odors would, therefore, be considered a significant impact. Additionally, frequent complaints about odors could result in operational restrictions being placed on these facilities.

BAAQMD CEQA Guidelines establishes project screening trigger levels for potential odor impacts. These are minimum distances that need to be provided between new sensitive receptors and various odor sources to avoid the potential for adverse odor impact. When these minimum distances are not met, the potential for odor impact exists.

BAAQMD minimum distances for a wastewater treatment plan, sanitary landfill or composting facility from residential users is one mile. The project is more than one mile from the nearest portion of both the San Jose/Santa Clara Water Pollution Control Plant and Newby Island Landfill. BAAQMD also advises that a project should be identified as having a significant odor impact if it is proposed for a site that is closer to an existing odor source then any location where there has been either:

- More than one confirmed complaint per year averaged over a three year period, or
- Three unconfirmed complaints per year averaged over a three year period.

No odor complaints have been documented from any properties directly adjacent to or close to the project site. All known complaints have been located 2.5 miles or more away from the project site and the project site is located farther away from the odor sources than the complaint locations. Therefore, it is reasonable to assume that odor impacts to the project would be less than significant.

Placement of residential land uses on the proposed project site would not expose residents to odors from the daily operation of the nearby water pollution control plant or landfill. **(Less Than Significant Impact)**

4.9.2.7 Construction-Related Impacts

The proposed project would require excavation and grading of the site. Excavation of soil has a high potential for creating air pollutants. In addition to the dust created during excavation, substantial dust emissions could be created as debris and soil is loaded into trucks for disposal.

After excavation, construction dust would continue to affect local air quality during construction of the project. Construction activities would generate exhaust emissions from vehicles/equipment and fugitive particulate matter emissions that would affect local air quality. Construction activities are also a source of organic gas emissions. Solvents in adhesives, non-waterbase paints, thinners, some insulating materials and caulking materials would evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.

During construction, various diesel-powered vehicles and equipment would be in use on the site. In 1998 the California Air Resources Board identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). The California Air Resources Board has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[24] High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truckstop) were identified as having the highest associated risk.

Health risks from Toxic Air Contaminants are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction related sources are mobile and transient in nature, and the bulk of the emission occurs within the project site at a substantial distance from nearby receptors. Because of its short duration, the transient nature of emissions, and the distance of sensitive receptors from the site, health risks from construction emissions of diesel particulate would be a less than significant impact.

According to the *BAAQMD CEQA Guidelines*, emissions of ozone precursors (ROG and NOx) and carbon monoxide from construction equipment are already included in the emission inventory that is the basis for regional air quality plans, and thus are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area. Thus, the effects of construction activities would be increased dustfall and locally elevated levels of particulate matter (PM_{10} and $PM_{2.5}$) downwind of construction activity, which is considered a significant impact.

Construction of the proposed project would result in short-term air quality impacts associated with dust generation. **(Significant Temporary Impact)**

4.9.3 Mitigation and Avoidance Measures for Air Quality Impacts

The following mitigation measures are proposed as part of the project to avoid or reduce significant air quality impacts:

Diesel Impact Mitigation

- Prior to issuance of occupancy permits the pump station diesel engines will be upgraded to electric engines with backup emergency generators by the applicant, or at the City's option retrofitted, to meet the ATCM 2009 requirements for diesel

[24] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

emissions. The City of Milpitas staff will review and approve the retrofit of the existing engines or the purchase and installation of the new engines.

Construction Impact Mitigation

- The following dust control measures will be implemented during all construction phases:
  - Water all active construction areas at least twice daily and more often during windy periods.
  - Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
  - Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
  - Sweep daily (preferably with water sweepers) all paved access roads on-site, parking areas and staging areas at construction sites.
  - Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets.
  - Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
  - Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
  - Limit traffic speeds on unpaved roads to 15 mph.
  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
  - Replant vegetation in disturbed areas as quickly as possible.

4.9.4 Conclusion

Implementation of the identified General Plan policies and proposed mitigation measures would reduce diesel emission impacts from the northwest pump station and temporary air quality impacts resulting from construction activities to less than significant. **(Less Than Significant with Mitigation)**

4.10 NOISE

The information provided in this section is based on a noise analysis prepared by *Illingworth and Rodkin* in May 2006. The complete report is provided in Appendix I.

4.10.1 Existing Setting

4.10.1.1 Fundamental Concepts of Environmental Acoustics

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

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

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level or dBA*. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 15 of Appendix E. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

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

In determining the daily level of environmental noise, it is important to account for the difference in responses of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Since the sensitivity to noise increases during the

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

TABLE 16
Typical Noise Levels in the Environment

Noise Source	Noise Level (dBA)
Common Outdoor Noise Sources	
Jet fly-over at 900 feet	110 – 120 dBA
Pile driver at 60 feet	100 dBA
Large truck passby at 45 feet	80 – 90 dBA
Gas lawn mower at 90 feet	70 dBA
Commercial/Urban area daytime	60 – 70 dBA
Suburban area daytime	50 – 60 dBA
Urban area nighttime	40 – 50 dBA
Suburban area nighttime	30 – 40 dBA
Common Interior Noise Sources	
Rock concert	110 – 120 dBA
Night club with live music	90 – 100 dBA
Noisy restaurant	80 dBA
Vacuum cleaner at 9 feet	70 dBA
Active office environment	50 – 60 dBA
Library	30 dBA
Quiet bedroom at night	20 – 30 dBA

4.10.1.2 Regulatory Background – Noise

The State of California and the City of Milpitas establish guidelines, regulations, and policies designed to limit noise exposure at noise sensitive land uses. Appendix E of the State CEQA Guidelines, the State of California Building Code, and the City of Milpitas's Noise Element of the General Plan present the following applicable criteria:

State CEQA Guidelines. The California Environmental Quality Act (CEQA) contains guidelines to evaluate the significance of effects resulting from a proposed project. These guidelines have been used in this EIR as thresholds for establishing potentially significant noise impacts and are listed under *Thresholds of Significance.*

CEQA does not define what noise level increase would be considered substantial. Typically, project-generated noise level increases of 3 DNL or greater would be considered significant where exterior noise levels would exceed the normally acceptable
noise level standard (60 DNL). Where noise levels would remain below the normally acceptable noise level standard with the project, noise level increases of 5 DNL or greater would be considered significant.

Section 1208 of the 1998 California Building Code. New multi-family housing in the State of California is subject to the environmental noise limits set forth in Chapter 1208A.8.4 of the California Building Code. The noise limit is a maximum interior noise level of 45 L_{dn} (same as DNL). Where exterior noise levels exceed 60 $L_{dn,}$ a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit.

City of Milpitas General Plan. The Noise Element of the City of Milpitas General Plan includes policy statements to guide public and private planning to attain and maintain acceptable noise levels. The following policies would be applicable to the project:

6-I-1 Use the guidelines in Table 6-1 of the General Plan as review criteria for development projects. The Noise and Land Use Compatibility Table indicates that multifamily residential land uses are considered “normally acceptable” up to 65 dBA DNL “conditionally acceptable” between 60 and 70 dBA DNL, “normally unacceptable” between 70 and 75 dBA DNL, and “clearly unacceptable” in environments that exceed 75 dBA DNL.

6-I-2 Require an acoustical analysis for projects located within a "conditionally acceptable" or "normally unacceptable" exterior noise exposure area. Require mitigation measures to reduce noise to acceptable levels.

6-I-3 Prohibit new construction where the exterior noise exposure is considered "clearly unacceptable" for the use proposed.

6-I-4 Where actual or projected rear yard and exterior common open space noise exposure exceeds the “normally acceptable” levels for new single-family and multifamily residential projects, use mitigation measures to reduce sound levels in those areas to acceptable levels.

6-I-5 All new residential development (single family and multifamily) and lodging facilities must have interior noise levels of 45 dBA DNL or less. Mechanical ventilation will be required where use of windows for ventilation will result in higher than 45 dBA DNL interior noise levels.

6-I-7 Avoid residential DNL exposure increases of more than 3 dB or more than 65 dB at the property line, whichever is more restrictive.

6-I-13 Restrict the hours of operation, technique, and equipment used in all public and private construction activities to minimize noise impact. Include noise specifications in requests for bids and equipment information.

U.S. Department of Housing and Urban Development Noise Regulations Section 24 CFR 51B. Under the HUD noise regulations, residential land uses are acceptable if the exterior day-night average sound level does not exceed 55 decibels and the interior day-night average sound level does not exceed 45 decibels. However, the exterior day-night average sound level can exceed 65 decibels, but no more than 70 decibels, if the interior day-night average sound level can be reduced by an additional five decibels or more. In addition, the exterior day-night average sound level can exceed 70 decibels, but no more that 75 decibels, if the interior day-night average sound level can be reduced by an additional 10 decibels or more.

4.10.1.3 Existing Noise Environment

The project site is located along Murphy Ranch Road between Technology Drive and McCarthy Boulevard in the City of Milpitas. The site is bounded by Coyote Creek to the west, the Hetch-Hetchy right-of-way and City of Milpitas Murphy Ranch Storm Pump Station to the south, Murphy Ranch Road to the east, and Technology Drive and the City of Milpitas Bellew Storm Pump Station to the north. The site is surrounded by office/industrial parks to the north, east, and south. The existing noise environment is created primarily by local traffic, aircraft and intermittent noise generated by the adjacent pump stations north and south of the project site. Existing ambient noise levels were measured on-site from November 8th to November 11th 2005. The noise measurement locations are shown on Figure 9.

At location LT-1[25], the hourly average noise levels ranged from 48 to 58 dBA. The noise at this location was generated primarily by occasional traffic along Technology Drive and more distant traffic noise. Aircraft generated instantaneous maximum noise levels of 50 to 55 dBA. The City of Milpitas Bellew Storm Pump Station generated a noise level of approximately 62 dBA during operation. The Milpitas pump station is used to pump stormwater runoff from the storm drainage system into Coyote Creek and typically operates about 60 hours per year, mostly in the winter months.

At location LT-2[26], the hourly average noise levels ranged from 46 to 56 dBA. Localized interference skewed some of the hourly noise measurements. This interference, however, was determined by the noise consultant to not be indicative of typical noise levels at this location. Taking all noise information into account, the DNL noise level at this location is estimated to be 57 to 58 dBA. Noise generated by the adjacent City of Milpitas Murphy Ranch Storm Pump Station was not distinguishable during the noise measurements.

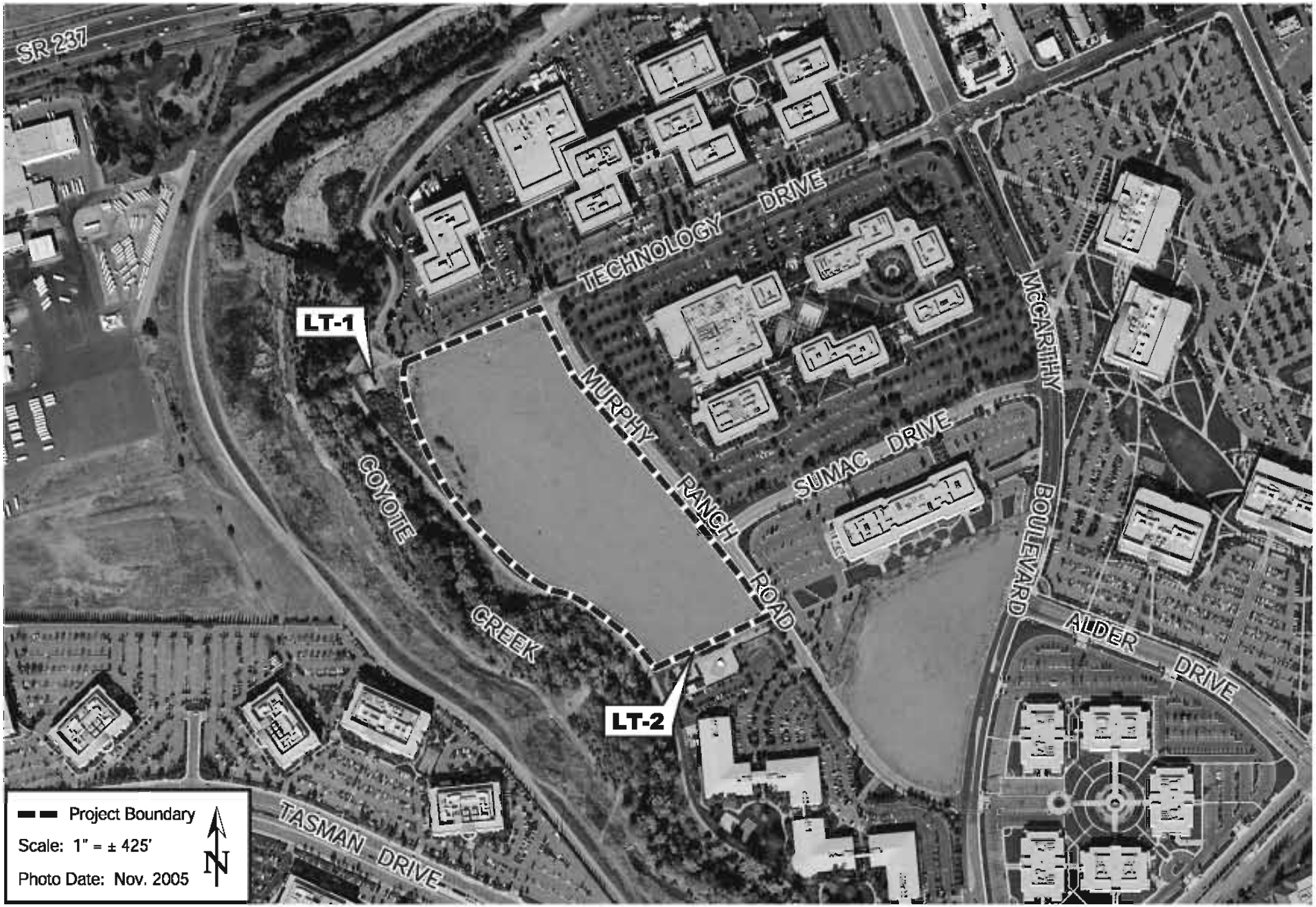
4.10.2 Noise Impacts

4.10.2.1 Thresholds of Significance

For the purposes of this EIR, a noise or vibration impact is considered significant if the project would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or
- Expose persons to, or generate excessive groundborne vibration or groundborne noise levels; or
- Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or

[25] The noise measurement location is at the northwest corner of the project site, adjacent to the City of Milpitas Storm Pump Station.
[26] This noise measurement location is at the southern boundary of the project site, adjacent to the City and County of San Francisco Pump Station.



NOISE MEASUREMENT LOCATIONS

FIGURE 9

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

4.10.2.2 Noise Impacts to the Project Site

CEQA does not define what noise level increase would be considered substantial. Typically, in high noise environments in Milpitas, if the project would cause the L_{dn} to increase by more than 3 dBA at noise-sensitive receptors, the impact is considered significant. Where the existing noise level is lower, a somewhat higher increase can be tolerated before the impact is considered significant.

Based on recent noise measurements taken on the project site and future estimated traffic noise levels, it is estimated that future residents will be exposed to exterior noise levels of 62 decibels at approximately 50 feet from the centerline of Murphy Ranch Road. The City of Milpitas Bellew Storm Pump Station is calculated to generate noise levels of approximately 50 dBA at the project site property line during operation of the equipment. The exterior noise environment at the project site will be below 65 dBA, which would not exceed the City's "normally acceptable" noise level standard for multi-family land uses.

For new attached residential units, average interior noise levels cannot exceed 45 dBA pursuant to the noise standard established by the State Building Code and the City of Milpitas. Assuming the use of standard California construction methods, interior noise levels are typically 15 dBA lower than exterior levels with windows partially open and 20 to 25 dBA lower with windows closed. Therefore, residences with exterior ambient noise levels of 60 dBA or less would meet the interior noise standard with standard construction methods. Where exterior noise levels exceed 60 dBA, additional measures must be incorporated such as sound rated windows and forced air ventilation.

Based on the proposed site plan, residential buildings will be set back a minimum of 50 feet from the centerline of Murphy Ranch Road. At 50 feet, the exterior noise level would be approximately 62 dBA which could result in interior noise levels in excess of 45 dBA. All residences located 75 feet or more from the centerline of Murphy Ranch Road would be exposed to exterior noise levels of less than 60 dBA. Pursuant to the State Building Code, residences within 75 feet of the centerline of Murphy Ranch Road will be equipped with mechanical ventilation to allow windows to be closed at the residents' discretion to reduce interior noise levels to 45 dBA L_{dn} or less. With the inclusion of mechanical ventilation, implementation of the proposed project will not expose future residents to unacceptable interior noise levels.

Future residents will be exposed to a maximum exterior noise level of 62 dBA and interior noise levels of 45 dBA or less, which is consistent with the noise and land use compatibility standards established in the City's General Plan and other applicable standards. **(Less Than Significant Impact)**

4.10.2.3 Project-Generated Traffic Noise Impacts

Based upon a review of the traffic study prepared by *Hexagon Transportation Consultants* (see Section II.H., *Transportation and Circulation)*, traffic noise levels would increase as a result of the project and other assumed growth in the project area. Project traffic would result in traffic noise increases of three to four dB along Murphy Ranch Road between Technology Drive and McCarthy Boulevard and two to three dB along Technology Drive between Murphy Ranch Road and McCarthy Boulevard. A noise increase is considered substantial if it increases the ambient noise level by three decibels or more in sensitive noise areas. There are, however, no existing noise-sensitive land uses along these roadways. As a result, future project traffic will have a less than significant noise impact.

Traffic generated by the proposed residential development would not result in significantly increased traffic noise. **(Less Than Significant Impact)**

4.10.2.4 Construction Impacts

Construction activities associated with implementation of the proposed project would temporarily increase noise levels in the project area. Construction activities generate considerable amounts of noise, especially during the construction of project infrastructure when heavy equipment is used. Typical average construction generated noise levels are about 81 – 89 decibels measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.) Construction generated noise levels drop off at a rate of about six decibels per doubling of distance between the source and receptor.

The construction of the proposed project would temporarily increase noise levels in the immediate vicinity of the project site, but would not be audible at noise sensitive locations. The nearest noise sensitive location is located more than 700 feet from the project site. Compliance with City code requirements for construction such as time limits and standard noise suppression techniques, construction activities associated with the proposed project would have a less than significant noise impact.

Noise generating activities associated with construction of the project site would temporarily elevate noise levels in the industrial area adjacent to the site, but would have a less than significant impact on sensitive receptors. **(Less Than Significant Temporary Impact)**

4.10.3 <u>Mitigation and Avoidance Measures for Noise Impacts</u>

No mitigation is required or proposed.

4.9.4 <u>Conclusion</u>

Implementation of the proposed project will have a less than significant noise impact. (Less Than Significant Impact)

4.11 UTILITIES

The information provided in this section is based, in part, on a Water Supply Assessment prepared by the City of Milpitas and approved by the Milpitas City Council in March 2006. The complete report is provided in Appendix J.

4.11.1 Existing Setting

4.11.1.1 Water Service

The City of Milpitas provides water to the project site. Currently, the source of the domestic water used in Milpitas includes the San Francisco Public Utility Commission (SFPUC) and from the Santa Clara Valley Water District (SCVWD). The SFPUC and the SCVWD will continue to supply all potable water to the City for the next 30 years. No new water sources will be added. The proposed project site is within the SCVWD wholesale distribution area.

The City of Milpitas 2005 Urban Water Management Plan assumed that the land use on the project site would remain consistent with the build out scenario of the 2002 Water Master Plan. The Master Plan assumed that the project site would be developed with an industrial land use by 2008. Based on the assumed land use, the City estimated that the developed project site would use 27,163 gallons per day (gpd) of water.

There is currently a 12-inch water main located in Murphy Ranch Road that would serve the project site. From the 12-inch main line, there are four 8-inch lines and four 2-inch lines that connect to the project site. Currently the site does not generate any water demand.

Recycled Water

The City of Milpitas purchases water from the South Bay Water Recycling program, which has developed a reclaimed water system to use treated wastewater from the San José/Santa Clara Water Pollution Control Plant for irrigation and industrial purposes.
There is an existing 4-inch recycled water main located in Murphy Ranch Road and Technology Drive that would serve the project site.

4.11.1.2 Sanitary Sewer/Wastewater Treatment

The Milpitas Sanitary Sewer Collection System is owned and maintained by the City of Milpitas. Wastewater from the City of Milpitas is treated at the San Jose/Santa Clara Water Pollution Control Plant, located near Alviso. In 2001, the City of Milpitas discharged 9.0 million gallons per day (mgd) of waste water and was contractually limited to a flow of 12.5 mgd. In July 2006, the City of Milpitas purchased an additional one million gallons per day of capacity at the treatment plant which increased the City's treatment capacity to 13.5 mgd (i.e., the City of Milpitas is now contractually allowed a sanitary sewer flow of 13.5 mgd).

There are currently two 8-inch sanitary sewer lines located in Murphy Ranch Road.
From the two 8-inch lines, there are six 6-inch lines that connect to the project site. The two 8-inch lines each have a current capacity of 0.51 million gallons per day (MGD). The site currently does not generate any wastewater. It was assumed, however, that the site would be developed

with an industrial land use. It is reasonable to assume that the site would generate wastewater equal to 85 percent of the total water usage. Based on this estimate the planned industrial land use would generate approximately 23,035 gpd of wastewater.

4.11.1.3 Storm Drainage System

The City of Milpitas owns and maintains the storm drainage system which serves the project site. There are four 18-inch storm drains which carry water from the site to the storm drain main in Murphy Ranch Road. The storm drain line in Murphy Ranch Road is a 39-inch to 48 inch line that connects to a 72-inch storm drain line in Technology Drive. This line discharges into Coyote Creek through the pump station located near the northeast corner of the project site. Coyote Creek carries the runoff into San Francisco Bay. There is no overland release of stormwater directly into any water body from the project site.

One of the four 18-inch lines has a total capacity of 12.9 cubic feet per second (cfs) and the other three 18-inch lines have a total capacity of 10.5 cfs each. The storm drain line in Murphy Ranch Road has a capacity of 57 cfs to 81 cfs as the line increases in size near the connection to the line in Technology Drive. The 72-inch line in Technology Drive has a current capacity of 232 cfs.

4.11.1.4 Solid Waste

BFI (a private company) provides residential solid waste and recycling collection services for the City of Milpitas. The City has contracted with Newby Island Landfill for disposal capacity of municipal solid waste. According to the Countywide Integrated Waste Management Plan, there is sufficient capacity for Santa Clara County for approximately the next 23 years.

4.11.2 <u>Utilities Impacts</u>

4.11.2.1 Thresholds of Significance

For the purposes of this EIR, a utility and service impact is considered significant if the project would:

- Require or result in the construction of new stormwater or wastewater facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Need new or expanded entitlements for water supplies;
- Be served by a landfill with insufficient permitted capacity; or
- Would not comply with federal, state, and local statutes and regulations related to solid waste.

4.11.2.2 Water Impacts

The 2002 Water Master Plan assumed that the project site would be developed with an industrial land use by 2008. Based on the planned and approved industrial land use, the City estimated that

the developed project site would use 27,163 gallons per day (gpd) of water. The Water Supply Assessment for the currently proposed project (see Appendix H) projects a total water demand of 177,612 gpd under full build out of the proposed project. This assumes 2.7 residents per units and a water demand of 90 gallons per day per unit pursuant to the assumptions in the City's 2002 Water Master Plan. The total water demand also assumes a 6.1 percent average unaccounted for water loss. This results in a net increase in total water demand of 150,512 gpd or 169 acre feet per year.

Using the criteria established by the City's Water Master Plan, the proposed project would generate a total base water demand[27] of approximately 160,137 gpd. This is 132,974 gpd more than the Water Master Plan base water flow (bwf) estimated for the site under the existing zoning designation (see Table 17).

TABLE 17
Additional Water Capacity Needs Above Master Plan Amounts

Land Use Code	BWF
Current Allowed Use – Industrial Park	27,163
Proposed Land Use – Townhouses	69,255
Proposed Land Use – Apartments	90,882
Proposed Land Use – Total	160,137
Net Increase In BWF (above Master Plan)	132,974

The project site will be supplied with water purchased from the SCVWD which receives its water supply from a variety of sources including local groundwater, imported water, local surface water, and recycled water. The SCVWD was consulted on this project during the preparation of the Water Supply Assessment. While the proposed project would result in a substantial net increase in water demand compared to the planned industrial land use (a net increase of approximately 150,512 gpd total water demand/ 132,974 base water demand), the City of Milpitas and the SCVWD have determined that there is sufficient water supply available to provide service to the proposed project. To reduce potable water demand, however, the development will incorporate water conservation practices to the maximum extent practicable in accordance with City policies, and will also utilize recycled water.

The existing water supply lines that serve the project site have sufficient capacity to transport the project water demand. Implementation of the proposed project will not require new or upgraded water supply lines.

City development policies will require the developer to design and install all water mains/lines necessary to serve the project (including fire flow) sized in accordance with the City's Water Master Plan. The developer will also be required to purchase adequate public system water capacity above the capacities assumed in the Water Master Plan. In addition, the developer will be required to pay all water related fees including connection fees and water treatment plant fees. No new or expanded entitlements will be required to supply water to the site.

[27] Base Water Demand is different than the total water demand calculated in the Water Supply Assessment. The Base Water Demand does not include water necessary for landscaping.

Implementation of the proposed project will result in a substantial increase in water demand in the City of Milpitas. The applicant will need to provide sufficient infrastructure and water supply to meet the needs of the project prior to issuance of building permits. If sufficient infrastructure and water supply cannot be provided, the project will not be constructed. Therefore, the project will have a less than significant water impact **(Less Than Significant Impact).**

4.11.2.3 Sanitary Sewer/Wastewater Impacts

It is reasonable to assume that the proposed land uses would generate wastewater equal to 85 percent of the total water usage on-site. Based on the estimated water usage for the assumed industrial land use on-site in the 2002 Water Mater Plan, the project site would generate approximately 21,730 gpd of wastewater. The proposed residential project would generate approximately 160,137 gallons of wastewater per day which is 138,407 gpd more than the assumed industrial land use based on land use assumptions of the Water Master Plan (see Table 18). While the sanitary sewer lines that serve the project site are of sufficient size to accommodate the project, the increase in wastewater flows will effect sewer conveyance capacity, the main pump system capacity, and the Water Pollution Control Plant Capacity.

TABLE 18
Additional Sewage Capacity Needs Above Master Plan Amounts

Land Use Code	BWF
Current Allowed Use – Industrial Park	21,730
Proposed Land Use – Townhouses	69,255
Proposed Land Use – Apartments	90,882
Proposed Land Use – Total	160,137
Net Increase In BWF (above Master Plan)	138,407

The City of Milpitas recently increased its wastewater capacity[28] based on the proposed build-out of the Midtown Specific Plan and the findings of the 2004 Sewer Master Plan. It is anticipated that even with the increased capacity, city-wide demand will exceed the available capacity in the near future. At this time, however, there is sufficient capacity to support the proposed project[29].

As a condition of project approval by the City of Milpitas, the developer will design and construct all sanitary sewers in accordance with the City's Sewer Master Plan and the City Engineering Standards and Guidelines. In addition, the developer will purchase adequate public system sewage capacity. Fees shall consist of treatment plant fees up to the levels established in the Master Plan, plus proportional replacement costs for a new main sewage pump station and regional plant capacity above the master plan capacities, as determined by the City. The acquisition of additional plant capacity will not require the expansion of the existing wastewater treatment facility or construction of a new facility. The proposed project will not cause the wastewater treatment plant to exceed its existing capacity.

[28] The City of Milpitas purchased additional capacity rights at the wastewater treatment plant in July 2006. The additional capacity totaled one million gallons per day increasing total capacity to 13.5 mgd.
[29] City of Milpitas Public Works Department, Personal Communication with Marilyn Nickel and Kristine Lowe, April 12, 2007

Implementation of the proposed project will not result in a net increase in wastewater above and beyond the existing permitted capacity of the City. The applicant will, however, need to provide sufficient infrastructure to meet the needs of the project prior to issuance of building permits. The project will result in a less than significant impact on the sanitary sewer system **(Less Than Significant Impact).**

4.11.2.4 Storm Drainage Impacts

The project site is currently 100 percent pervious. The proposed project will result in approximately 71 percent of the site (15.45 acres) being covered with impervious surfaces such as roads, buildings, and other hardscape. The remaining 29 percent of the site will be covered by landscaping and other pervious surfaces. The project will implement required stormwater treatment in compliance with the City's Stormwater C.3 Guidebook. Please see Section II.D., *Hydrology* of this report for a complete discussion of the proposed C.3 Stormwater Control Plan for this project. Nevertheless, the existing storm drainage system does not have sufficient capacity to support the proposed land uses.

Even with implementation of the City's C.3 stormwater treatment requirements, the proposed project will exceed the capacity of the existing storm drainage system **(Significant Impact).**

4.11.2.5 Solid Waste Impacts

The proposed project would produce approximately 2,943 pounds of solid waste per day[30]. The maximum size of the planned industrial land use is unknown, but on average, industrial land uses generate approximately 5.0 lbs per day of garbage for every 1,000 square feet of building area. Based on the generation rates, it is reasonable to assume that garbage production would be comparable between the approved industrial and proposed residential land uses. The existing landfill has capacity to handle the additional 2,943 pounds per day of waste produced from the proposed project. The City of Milpitas is currently operating a residential recycling program for single-family houses and apartments that complies with state-mandated waste reduction goals specified in the Public Resources Code Section 40500. This project will participate in the City's solid waste program and in the City's residential recycling program which will reduce the total amount of garbage taken to the landfill. Coordination with the solid waste hauler is necessary to insure that sufficient space is allocated for the necessary facilities.

With implementation of the City's residential recycling program and solid waste program, the proposed project will have a less than significant impact on solid waste facilities serving the City of Milpitas **(Less Than Significant Impact).**

4.11.3 <u>Mitigation and Avoidance Measures for Utilities Impacts</u>

4.11.3.1 General Plan Policies

The programs and policies of the City of Milpitas General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development

[30] Base on average waste production of 4.5 pounds per unit per day.

within the City. Development on-site will be subject to General Plan programs and policies, including the following:

- *Water Quality Policy 4.d.I.1:* Continue implementing the National Pollutant Discharge Elimination System (NPDES) requirements of the Regional Water Quality Control Board.

4.11.3.2 Project Specific Mitigation Measures

The following mitigation measure has been included in the project to reduce impacts to the storm water drainage system:

- A 42-inch storm drain bypass line will be installed parallel to the existing 72-inch storm drain line pursuant to the City Stormdrain Master Plan to provide adequate capacity to convey stormwater runoff from the project site to the pump station.

4.11.4 Conclusion

With implementation of the identified General Plan policies and project specific mitigation measures, the proposed project will have a less than significant utilities impact. (Less Than Significant with Mitigation)

Unlike utility services, public facility services are provided to the community as a whole, usually from a central location or from a defined set of nodes. The resource base for delivery of the services, including the physical service delivery mechanisms, is financed on a community-wide basis, usually from a unified or integrated financial system. The service delivery agency can be a city, county, service or other special district. Usually, new development will create an incremental increase in the demand for these services; the amount of demand will vary widely, depending on both the nature of the development (residential vs. commercial, for instance) and the type of services, as well as on the specific characteristics of the development (such as senior housing vs. family housing).

The impact of a particular project on public facilities services is generally a fiscal impact. By increasing the demand for a type of service, a project could cause an eventual increase in the cost of providing the service (more personnel hours to patrol an area, additional fire equipment needed to service a tall building, etc.). That is a fiscal impact, however, not an environmental one.

CEQA does not require an analysis of fiscal impacts. CEQA analysis is required if the increased demand triggers the need for a new facility (such as a school or fire station), since the new facility would have a physical impact on the environment.

For the purposes of the EIR, a public facilities and services impact is considered significant if the project would result in substantial adverse physical impacts associated with the provision or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities.

5.1 Police Services

Police protection services would be provided to the project site by the City of Milpitas Police Department (MPD). Services are provided from one central station, located at 1275 North Milpitas Boulevard. The Department employs 95 sworn officers and operates 26 marked patrol cars. The City is divided into six geographical beats and on most shifts and most days each beat is filled.

The average response time within the City is approximately four minutes and 40 seconds. Highest priority is assigned to emergency calls where life-threatening conditions occur. The target response time for such emergency calls is three minutes. Currently, the average police response time for non-emergency calls within the City is estimated to be approximately five minutes.

The proposed development would be constructed in conformance with current codes, including appropriate safety features to minimize criminal activity. In addition, the project design will be reviewed by the City of Milpitas Police Department to ensure that it incorporates appropriate safety features to minimize criminal activity.

New facilities would not be required to provide adequate police services to serve the increased population resulting from construction of the proposed project.

5.2 Fire Services

Fire protection on the project site would be provided by the City of Milpitas Fire Department, which has four fire stations and an administration facility. The Milpitas Fire Department (MFD) is responsible for emergency medical services, rescue services, hazardous and toxic materials emergency response, coordination of City-wide disaster response efforts, enforcement of fire and life safety codes, enforcement of state and federal hazardous materials regulations, and investigation of fire cause, arson and other emergency events for cause and origin.

The closest fire station to the site is Station No. 4, located at 775 Barber Lane, approximately 1.1 miles southeast of the site. Station No. 4 is staffed by three personnel. The station is equipped with one fire truck.

Fire Station No. 1 is located at 25 West Curtis Ave., and the Fire Department's headquarters is located next to this station at 777 South Main Street, approximately 1.9 miles from the project site.

The emergency response time goal of the Fire Department is to deploy one engine to the scene of an emergency within four minutes. The Department's average response time to all calls is currently below the four minute response time goal. The Milpitas Fire Department's current Level of Service Standards are: reflex time - 1.5 minutes, travel time - 3.5 minutes, and second engine response time - six to eight minutes.

The City also receives mutual fire aid from other municipalities under the Santa Clara County Mutual Aid Plan and Bay Area Intercounty Fire Mutual Aid Plan for Local Resources. The San José Fire Department and/or the Fremont Fire Department provide mutual aid to Milpitas in emergencies.

The existing condition on the site creates little demand for fire services. The proposed project would place residential development on a currently vacant lot, resulting in an increase in demand for fire protection services. As mentioned above, Fire Station #4 is approximately one mile from the project site, and the response time would be within the Fire Department's goal of four minutes.

The proposed project will be built to current Fire Code standards, including sprinklers and smoke detectors, and include features that would reduce potential fire hazards. Access to the site for emergency vehicles will be provided from project driveways, built to Fire Department specifications.

Although the proposed project would incrementally increase demand for fire response and related emergency services, it will not require the development of new fire service facilities, and therefore, will not result in a significant physical impact on the environment.

5.3 Schools

The project site is located within the Milpitas Unified School District (MUSD). The district serves 9,368 students in grades kindergarten through 12, with nine elementary schools, two middle schools, and two high schools.[31]

The nearest elementary school is Anthony Spangler Elementary School, located at 140 North Abbott, approximately 1.02 miles northeast of the project site on the north side of Calaveras Boulevard. The nearest middle school is Thomas Russell Middle School, located at 1500 Escuela Parkway, approximately 2.9 miles northeast of the project site. The nearest high school is Milpitas High School, located at 1285 Escuela Parkway, approximately 2.7 miles northeast of the project site.

The project proposes to develop a total of 659 multi-family residential units. Using the MUSD student generation rate of 0.25 students per multi-family dwelling unit, the proposed residential units could generate a total of approximately 165 students. Assuming an equal distribution of new students at each school and based on capacity and current enrollment, Spangler Elementary and Milpitas High School would be able to accommodate students generated from the proposed project (see Table 19). Thomas Russell Middle School does not have sufficient capacity to support 55 new students.

TABLE 19
Local School Capacity

School	Capacity	2006 Enrollment
Anthony Spangler Elementary	782	725
Thomas Russell Middle School	807	791
Milpitas High School	3,000	2,922

California law allows the governing body of a school district to impose a fee on all new development within the District's jurisdiction for the purpose of funding the construction or reconstruction of school facilities. California Government Code Section 65995 limits the amount of school fees to be imposed on new development at $2.05 per square foot for residential projects and $0.33 per square foot for commercial projects, including office development. The Government Code allows for these fees to be exceeded if a Justification Study is conducted and approved; however, the MUSD has not completed such a study.

The California Government Code does not require the collection of fees; rather, it limits the collection of fees. If a school district chooses to impose impact fees on new development, building permits may not be issued prior to the payment of the required fees. The affected school districts require the payment of school fees up to the State's specified maximum. School fees are collected by the City of Milpitas, and transferred to the applicable school district.

Implementation of the proposed project would increase the number of school children that live in the project area. An increase in the student population would result in increases in school children attending the public schools identified. As discussed above, state law requires that mitigation for impacts to schools be mitigated through the payment of fees. The proposed project

[31] Milpitas Unified School District. *Index of Schools*. June, 2007. http://www.musd.org.

will not result in the need to construct new schools, but may require expansion of one or more existing schools. Additions to an existing school within the City's Urban Service Area are not likely to result in significant environmental impacts.

5.4 Parks and Recreation

The City of Milpitas provides 157.65 acres of City-owned park and recreation facilities to its citizens,[32] in addition to the 1,539 acres of Ed Levin County Park, which is a regional park that is also within the City's boundaries.

The nearest park to the project site is Starlight Park, located at the intersection of Rudyard and Abbott Avenue, approximately 1.02 miles northeast of the project site. Starlight Park is a 4 acre park with horse-shoe pits, play equipment, barbecue pits, and picnic tables

The Milpitas General Plan sets standards for new park and recreation facilities within the City. For new developments outside of the Midtown Specific Plan Area, 5.0 acres of neighborhood and community parks are required per 1,000 residents. This requirement can be fulfilled through land dedication or through equivalent in-lieu fees. Up to 2.0 acres per 1,000 residents can be developed as usable on-site common or private open space within new residential developments, and the remaining three acres must be developed as public parkland.[33]

Based on a projected population increase of 1,779[34] residents by the development of the project, approximately 8.89 acres of new parkland will be required to serve the proposed project consistent with city policies. Conformance with this requirement can be achieved by dedication of park land or equivalent in-lieu fees.

The project is proposing a 1.0 acre public park. The remainder of the requirement will be met by the payment of fees.

5.5 Libraries

The Santa Clara County Library System consists of eight libraries and one bookmobile. The Santa Clara County Libraries are governed by the Joint Powers Authority, which is comprised of one City Council member from each of the eight member City jurisdictions and two members from the Santa Clara County Board of Supervisors. Property taxes pay for more than half the cost of operating the Library. In addition to the property tax, property within the district is also assessed for enhanced service through a County Service Area.

The project site is served by the Milpitas Library, located at 40 North Milpitas Boulevard. The Milpitas library provides programs and services for adults, teens, and children, an online public access catalog, CD-ROM and online data bases, Internet access, over 200,000 volumes, audio and video cassettes, DVDs and magazines.

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[32] City of Milpitas General Plan Open Space Element, 2001. http://www.ci.milpitas.ca.gov/citydept/planning/general_plan/ch4.pdf.
[33] City of Milpitas General Plan Open Space and Conservation Element, 2002. Policy 4.a-I-2.
[34] Based on an estimate by the City of Milpitas of 2.7 persons per unit.

The Milpitas Library has approximately 50,000 visitors per month and circulates approximately 116,000 items a month. The City completed a *Library Needs Assessment* in June 2002. The assessment reviewed the use of the existing facilities, benchmark library size, staffing, and operations with comparable libraries, and assessed the community's library needs. The assessment compared the Milpitas Library with nine other libraries and concluded that the Milpitas Library is deficient in areas such as square footage and collection size.

The City of Milpitas plans to demolish the existing library and rebuild a new, 60,000 square foot library at the historic Milpitas Grammar School site, located at 160 North Main Street, in the Midtown redevelopment area. Construction is slated to begin in January 2007 and the library is expected to open in 2009.

The development of the proposed project would add up to 1,773 additional residents to the City of Milpitas. An increase in residential development will result in an incremental increase in need for library services. It is not anticipated, however, that the proposed project would require the construction of a new library facility, other than that already proposed and planned for by the City.

5.6 Conclusion

Implementation of the proposed project would result in up to an additional 659 dwelling units, which would incrementally increase the demand for all municipal services in the project area. This increased demand, however, will be offset through existing laws and ordinances and will not result in the need to construct new police, fire, school or park facilities. (Less Than Significant Impact)

SECTION 6.0 CUMULATIVE IMPACTS

Cumulative impacts, as defined by CEQA, refer to two or more individual effects, which when combined, are considerable or which compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant projects taking place over a period of time. The CEQA Guidelines state (§15130) that an EIR should discuss cumulative impacts "when the project's incremental effect is cumulatively considerable." The discussion does not need to be in as great detail as is necessary for project impacts, but is to be "guided by the standards of practicality and reasonableness." The purpose of the cumulative analysis is to allow decision makers to better understand the potential impacts which might result from approval of past, present and reasonably foreseeable future projects, in conjunction with the proposed project.

In order to meet the intent of the cumulative analysis requirement, the following discussion reflects the information available from the City of Milpitas as of the date of circulation of this EIR. The relevant projects are listed in Table 20 below.

TABLE 20
Reasonably Foreseeable Projects

Project Name	Proposed Land Use	Size of Development
South Main/Abel	Mixed-Use	126 residential units/2,700 square feet retail
Estrella	Residential	369 residential units
South Main Manor	Residential	22 residential units
Aspen Village	Residential	101 residential units
Baystone	Residential	391 residential units

6.1 Cumulative Impacts

Based on the impacts identified in this EIR and the size of the proposed project, development of the project site with other pending and approved development may have cumulatively significant impacts in the following areas:

- Transportation
- Air Quality
- Noise

6.1.1 Cumulative Transportation Impacts

Under cumulative conditions (i.e., the proposed project plus approved and reasonably foreseeable project), the proposed project will have a significant impact on a roadway segment if:

- The roadway segment is projected to operate below its LOS standard under the existing general plan designation and the proposed general plan change is projected to cause an increase in traffic of at least one percent of its capacity; or
- The roadway segment is projected to operate at or better than its LOS standard under the existing general plan and the proposed general plan change is projected to degrade the level of service to less than acceptable levels.

For Congestion Management Program (CMP) roadway segments, the minimum acceptable level of service is LOS E. At roadway segments in Milpitas that are not CMP roadway segments, the minimum acceptable level of service is LOS D. Calaveras Boulevard, Montague Expressway, I-880, and SR 237 are the only CMP roadways in the cumulative analysis.

A comparison of the trip generation between the proposed residential project and the currently planned industrial park development is shown on Table 21. The proposed project would increase the daily trips to/from the site by 116 trips in the AM peak hour and 161 trips in the PM peak hour.

TABLE 21
Trip Generation Rates

Use	AM Peak Hour			PM Peak Hour		
	Trips			Trips		
	In	Out	Total	In	Out	Total
Townhouses	36	146	182	160	68	228
Apartments	36	144	180	141	61	202
Total Residential	72	290	362	301	129	430
Industrial Park	222	25	246	54	215	269
Net Project Trips	**-149**	**265**	**116**	**247**	**-86**	**161**

Under the cumulative condition, with the existing General Plan land use, which is defined as traffic generated by all pending and reasonably foreseeable projects (see Table 18) in combination with the traffic that be generated under the existing land use designation, SR 237/Calaveras Boulevard, Montague Expressway, I-880, Great Mall Parkway, Technology Drive, and McCarthy Boulevard would all operate at an unacceptable LOS under the year 2030 conditions.

The proposed General Plan amendment, combined with all pending and reasonably foreseeable projects, would have a beneficial impact on eight roadway segments during the AM and PM peak hours. This is primarily because the residential trips generated by the GPA would be located in close proximity to the surrounding employment uses, which would shorten trips for commuters. Therefore, the proposed GPA would predominately benefit overall traffic operations in the project area.

6.1.2 Cumulative Air Quality Impacts

BAAQMD guidance for CEQA documents provides that a project's cumulative impact is based on its consistency with the local general plan and the local general plan with the regional air quality plan. The proposed project does not conform to the current general plan and, as a result, does not conform to the CAP. A project specific analysis, however, determined that the proposed project will not result in significant emissions of regional or localized pollutants (see Section II.I, *Air Quality).*

The Clean Air Plan includes Transportation Control Measures (TCMs) that are intended to reduce vehicle miles traveled and associated air pollution impacts. Cities are not the only implementing agencies for these TCMs; other agencies include counties, the BAAQMD, the Metropolitan Transportation Commission, Congestion Management Agencies and school

districts. The City's General Plan includes all of the measures that are consistent with a City's responsibility. Virtually all of these measures are already reflected in existing General Plan policies, which are the basis of mitigations for all land use impacts in Milpitas. The General Plan, therefore, demonstrates reasonable efforts to implement the Transportation Control Measures (TCMs) listed in the BAAQMD Guidelines.

While the proposed General Plan amendment is inconsistent with the CAP, the project does not result in project-specific air quality impacts and the City's General Plan is generally consistent with the regional air quality policies. Therefore, the project would not substantially contribute to cumulative air quality impacts.

6.1.3 Cumulative Noise Impacts

The proposed project, by itself, will not generate enough traffic to audibly increase the overall noise level of the project area. For humans, an audible increase in noise is three decibels, which is equivalent to traffic volumes doubling in the project area. The proposed project combined with other nearby projects will not double traffic volumes in the project area and, therefore, will not increase the overall ambient noise level of the project area by three decibels or more. As a result, the proposed project will have a less than significant cumulative noise impact.

SECTION 7.0 ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the CEQA Guidelines requires that an EIR describe a reasonable range of alternatives to the proposed project that could feasibly attain most of the project objectives while avoiding or considerably reducing any of the significant impacts of the proposed project. In addition, the No Project Alternative must be analyzed in the document.

In order to comply with the purposes of CEQA, it is necessary to identify alternatives that reduce the significant impacts that are anticipated to occur if the project is implemented, but to try to meet as many of the project's objectives as possible. The Guidelines emphasize a common sense approach–the alternatives should be reasonable, should "foster informed decision making and public participation," and should focus on alternatives that avoid or substantially lessen the significant impacts.

The stated objectives of the project proponent are to:

1. Develop a well-designed, economically feasible residential community consisting of for-sale townhouses and rental apartments, which incorporate smart growth elements by being pedestrian-oriented and located close to employment, retail, and mass transit facilities.
2. Provide needed housing in the City of Milpitas, including housing for various income levels to aid the City in providing for its regional fair share housing needs and attaining a jobs/housing balance.
3. Provide public open space and access to the Coyote Creek Regional Trail System.
4. Provide the City of Milpitas with needed rental and for-sale housing while utilizing existing infrastructure and without eliminating habitat or open space areas within the City.

An EIR is required to include a "No Project" alternative that "compares the impacts of approving the proposed project with the impacts of not approving the proposed project."

The significant impacts identified in this EIR as resulting from the proposed project include traffic and air quality. Since the traffic impacts are a result of the amount of traffic generated by the proposed level of development on the project site, the logical way to reduce those impacts would be to reduce the amount of development. In addition, the air quality impacts could also be minimized by reducing the size of the development project, allowing for greater setbacks from the adjacent pump station. Another way to reduce air quality impacts would be to redesign the project. A reduced density alternative and a site design alternative are discussed below.

A. NO PROJECT ALTERNATIVE

The CEQA Guidelines [§15126(d)4] require that an EIR specifically discuss a "no project" alternative, which should address both "the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project is not approved, based on current plans and consistent with available infrastructure and community services." Since the project site is a vacant lot with prior approval for industrial development, the alternative to the City approving the currently proposed project would be to maintain the site as is, or to develop the site under the existing industrial land use designation. If the project site were to remain

vacant, there would be no impacts. The property is privately owned and it is likely, however, that the property owner will continue to pursue development of the land given its location in the urbanized area of Santa Clara County.

Development with industrial land uses could result in fewer impacts than the proposed project. The impact on the local roadway system would vary because the origin of the trips would be different. Because the City has more jobs then employed residents, many employees must commute from outside the City. Increasing the number of jobs in the City will increase the number of employees commuting from other cities and possibly have a more severe impact on local and regional traffic. The proposed project will place housing within close proximity to a major regional job center, which could possibly reduce commute distances for some employees. Assuming a 0.35 FAR, the industrial land use would generate approximately 2,338 daily trips[35]. Of these 2,338 daily trips, 339 trips would be in the AM Peak Hour and 362 would be in the PM Peak Hour. The proposed project will generate approximately 4,524 daily trips. Of these 4,524 daily trips, 362 AM Peak Hour Trips and 430 PM Peak Hour trips, therefore, the proposed project will generate more traffic than the assumed industrial land use.

Development of an industrial land use on-site would avoid the air quality impacts because no housing would be located adjacent to the existing City of Milpitas Bellew Storm Pump Station. Employees would not be on-site for a sufficient number of hours to be significantly impacted by the operation of the pump station.

The proposed project site is a vacant parcel in an industrial area of Milpitas that is currently underutilized. Development of the parcel with the approved industrial land uses or industrial/R&D at a higher density than previously approved would add more jobs to the City and add to the jobs/housing imbalance. While the .35 FAR discussed above would be similar to development in the area, new R&D development in north San José, Fremont, and Santa Clara has been approved at higher intensities in recent years. The proposed project would have a beneficial impact on the jobs/housing imbalance by increasing the housing supply in the City of Milpitas.

Conclusion: Implementation of the "No Project" alternative would avoid the significant traffic and air quality impacts identified in this EIR. The No Project alternative could, however, contribute to the jobs/housing imbalance in the City. This alternative does not meet any of the objectives of the proposed project.

B. REDUCED DENSITY ALTERNATIVE

Implementation of the proposed project would result in a significant LOS impact to the intersection of McCarthy Boulevard and Tasman Drive. Mitigation has been proposed to reduce this impact to a less than significant level. The impact, however, can be avoided by reducing the overall size of the project. *Hexagon Transportation Consultants* has calculated that the project would have to be reduced in size by 61 percent to avoid impacting the McCarthy/Tasman intersection. Possible reduction scenarios include eliminating all of the single-family units and 79 apartment units or eliminating all the apartment units and 64 single-family units.

[35] Based on the Institute of Transportation Engineers Trip Generation Manual, 7th edition, using an average daily rate of 6.97 per 1,000 square feet of industrial development.

In addition to avoiding the significant LOS impact, reduction of the total number of residential units would allow for more open space on the project site and greater setbacks between the residential units and the City of Milpitas Bellew Storm Pump Station. The setbacks would reduce the air quality impacts of the proposed project to a less than significant level.

Conclusion: Implementation of Alternative B would reduce and/or avoid the significant traffic and air quality impacts identified in this EIR. This alternative does not meet Objective 2 of the project, providing housing for a variety of income levels, because either the single-family units or the apartment units would need to be eliminated.

C. SITE DESIGN ALTERNATIVE

Implementation of the proposed project will place residential units within close proximity to the City of Milpitas Bellew Storm Pump Station. This station is operated by three 750 horsepower diesel engines. The exposure of future residents to the exhaust from these engines is concluded to be a significant air quality impact. The apartment development could be redesigned so that there is a greater setback between the pump station and the residences. Currently the parking structure is proposed to be located in the center of the apartment complex, which puts the residences within 120 feet of the pump station. By relocating the parking structure to the northwest corner of the site, the residences would be set back approximately 240 feet from the pump station. In addition, air handling systems could be designed to filter intake air to reduce exposure of diesel exhaust to residents[36].

Redesign of the apartment project and installation of air intake filters will reduce the impact to future residents caused by the pump station compared to the proposed project, but it will not reduce the impact to a less than significant level.

Conclusion: Implementation of Alternative C would reduce the significant air quality impacts identified in this EIR, but not to a less than significant level. This alternative meets all of the project objectives.

D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines state that an EIR shall identify an environmentally superior alternative. Based on the above discussion, the environmentally superior alternative is Alternative B, because all of the project's significant environmental impacts would be avoided. Alternative B would not meet all of the objectives of the proposed project.

[36] Donald Ballanti, Certified Meteorologist, May 2006.

SECTION 8.0 SIGNIFICANT UNAVOIDABLE IMPACTS OF THE PROJECT

A significant unavoidable impact is an impact that cannot be mitigated to a less than significant level if the project is implemented, because no feasible mitigation has been identified. All significant impacts of the proposed project would be reduced to a less than significant level with the implementation of mitigation measures identified in this EIR. If the City of Milpitas does not allow the project specific mitigation of restriping McCarthy Boulevard, the project would have a significant unavoidable transportation impact.

SECTION 9.0 IRREVERSIBLE ENVIRONMENTAL CHANGES AND IRRETRIEVABLE COMMITMENT OF RESOURCES

CEQA and the CEQA Guidelines require that an EIR address "significant irreversible environmental changes which would be involved in the proposed project, should it be implemented." [§158126(c)]

If the proposed project is implemented, development of this site would involve the use of non-renewable resources both during the construction phase and future operations/use of the site. Construction would include the use of building materials, including materials such as petroleum-based products and metals that cannot reasonably be re-created. Construction also involves significant consumption of energy, usually petroleum-based fuels that deplete supplies of non-renewable resources. Once the new developments are complete, occupants will use non-renewable fuels to heat and light the buildings. The proposed project will also consume water at a higher rate than the current land use.

The City of Milpitas encourages the use of building materials that include recycled materials, and makes information available on those building materials to developers. New buildings will be built to current codes, which require insulation and design to minimize wasteful energy consumption. Development of high density residential units typically use less energy for heat and light because common walls and shared services reduce waste. In addition, the site is an infill location and is currently served by public transportation. The site provides residential opportunities that are more reasonably proximate to existing employment centers in Milpitas than alternative housing in the south county and other counties to the north. The proposed project will, therefore, facilitate a more efficient use of resources over the long term.

SECTION 10.0 GROWTH INDUCING IMPACTS OF THE PROJECT

For the purposes of this project, a growth inducing impact is considered significant if the project would:

- cumulatively exceed official regional or local population projections;
- directly induce substantial growth or concentration of population. The determination of significance shall consider the following factors: the degree to which the project would cause growth (i.e., new housing or employment generators) or accelerate development in an undeveloped area that exceeds planned levels in local land use plans;
- indirectly induce substantial growth or concentration of population (i.e., introduction of an unplanned infrastructure project or expansion of a critical public facility (road or sewer line) necessitated by new development, either of which could result in the potential for new development not accounted for in local general plans).

The project is proposed on a currently undeveloped site within the City of Milpitas. The site is surrounded by existing infrastructure and both existing and planned development. Development of the project will not likely require upgrades to the existing infrastructure. Therefore, it will not include any significant expansion that would facilitate growth in other areas of the City.

Redevelopment of the project site would place a residential neighborhood in the middle of an industrial area. Placement of housing in this area could ultimately pressure adjacent industrial properties to redevelop with residential land uses, particularly since economic conditions have caused vacancies in existing industrial and office buildings. Redevelopment of other industrial sites in this area of Milpitas would constitute significant growth within the City because it would result in unplanned increases to the population of the city.

The project could have significant growth inducing impacts.

SECTION 11.0 AUTHORS AND CONSULTANTS

Authors

City of Milpitas Planning Division
Felix Reliford – Acting Director of Planning and Neighborhood Services

Consultants

David J. Powers & Associates, Inc.
Environmental Consultants and Planners
San José, CA
Michelle Yesney, Principal
Shannon George, Project Manager
Stephanie Grotton, Graphic Artist

Holman & Associates
Archaeological Consultants
San Francisco, CA

Hexagon Transportation Consultants
Traffic Consultants
San José, CA

Don Ballanti, Certified Meteorologist
El Cerrito, CA

H.T. Harvey & Associates
Biological Consultants
San José, CA

Illingworth & Rodkin
Acoustical Consultants
Petaluma, CA

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Appendix A

PRELIMINARY GEOTECHNICAL INVESTIGATION
MURPHY RANCH ROAD RESIDENTIAL DEVELOPMENT
Milpitas, California

Pardee Residential, LLC
San Diego, California

23 August 2004
Project No. 1270.06

Treadwell&Rollo
Environmental and Geotechnical Consultants

Treadwell&Rollo

23 August 2004
Project 1270.06

Mr. Shon E. Finch
Fairfield Residential, LLC
5510 Morehouse Drive, Suite 200
San Diego, California 92121

Subject: Preliminary Geotechnical Investigation
Murphy Ranch Road Residential Development
Milpitas, California

Dear Mr. Finch:

Enclosed are six copies of our preliminary geotechnical investigation report for the proposed Murphy Ranch Road residential development in Milpitas, California. The site is at the southwest corner of the intersection of Technology Drive and Murphy Ranch Road. This report was prepared in accordance with our proposal dated 9 August 2004.

The site currently consists of 21.7-acre vacant lot with disked soil at the ground surface. We understand plans are to construct multi-family residential buildings at the site; however, the types, number and locations of buildings have not yet been determined. We anticipate the most likely types of construction consist of low-rise, wood-framed residential structures, concrete podium structures with wood-framed construction above, and concrete parking structures.

Treadwell & Rollo drilled 13 borings to depths of 36-1/2 to 61-1/2 feet below the existing ground surface (bgs) in 1992 and 1995 for the previously proposed Octel development. Our interpretation of the subsurface conditions is based entirely on data from the previous investigation. We conclude the site is generally underlain by 8 to 10 feet of soft to medium stiff silt and low-plasticity clay with varying sand content, although this weak surficial layer is 12 to 18 feet thick at two locations. The surficial weak silt and clay is underlain by a combination of stiff to very stiff clay and silt and medium dense to very dense sand with varying silt content to the maximum depth explored. Groundwater was measured at depths between 10-1/2 and 14-1/2 feet bgs during our previous investigations.

The most appropriate foundation types for the proposed buildings will be controlled by the surficial weak silt and clay layer and the presence of potentially liquefiable sandy silt and silty sand layers beneath the site. We preliminarily conclude 3/4 to 2 inches of liquefaction-induced ground surface settlement will occur following a major earthquake on one of the nearby faults, with up to 3/4 inch of differential settlement over a horizontal distance of 50 feet. Foundations for the proposed buildings should be designed to limit differential settlement under static and seismic conditions to acceptable levels. We conclude the proposed buildings can generally be supported on stiffened shallow foundation systems. We preliminarily conclude low-rise

Treadwell & Rollo, Inc. *Environmental & Geotechnical Consultants*
501 14th Street, Third Floor, Oakland, CA 94612
Telephone (510) 874-4500 Facsimile (510) 874-4507

wood-framed structures can be supported on post-tensioned slabs-on-grade (P-T slabs) or well-reinforced mat foundations bearing in the weak surficial silt, and heavier podium or parking structures can be supported on grid foundation systems supported on compacted aggregate pier-reinforced soil.

Preliminary conclusions and recommendations regarding liquefaction hazard mitigation, foundation support, site preparation, slab-on-grade floors, concrete flatwork, and seismic design are presented herein. Prior to final design, the building types, layout, and the estimated column loads should be provided to allow us to plan our final investigation and refine our preliminary conclusions and recommendations based on building-specific information.

We appreciate the opportunity to work with you on this project. If you have any questions, please call.

Sincerely yours,
TREADWELL & ROLLO, INC.

Andrew R. Blaisdell
Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
ANDREW R. BLAISDELL
No. C 65158
Exp. 9/30/05
CIVIL
STATE OF CALIFORNIA

for Craig S. Shields
Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
CRAIG S. SHIELDS
GE2116
Ren. 3/31/05
GEOTECHNICAL
STATE OF CALIFORNIA

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Enclosure

PRELIMINARY GEOTECHNICAL INVESTIGATION
MURPHY RANCH ROAD RESIDENTIAL DEVELOPMENT
Milpitas, California

Fairfield Residential, LLC
San Diego, California

23 August 2004
Project No. 1270.06

Treadwell&Rollo
Environmental and Geotechnical Consultants

Treadwell&Rollo

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Treadwell&Rollo

PRELIMINARY GEOTECHNICAL INVESTIGATION
MURPHY RANCH ROAD RESIDENTIAL DEVELOPMENT
Milpitas, California

1.0 INTRODUCTION

This report presents the results of the preliminary geotechnical investigation performed by Treadwell & Rollo, Inc. for the proposed Murphy Ranch Road residential development in Milpitas, California. The site is at the southwest corner of the intersection of Technology Drive and Murphy Ranch Road, as shown on the Site Location Map, Figure 1.

The project site encompasses an area of 21.7 acres between Murphy Ranch Road and Coyote Creek, south of Highway 237, as shown on the Site Plan, Figure 2. The site is currently a relatively level, vacant disked field that has been used for agriculture in the past. We understand plans are to construct multi-family residential buildings at the site. However, building types, sizes, and locations have not yet been determined. We understand the buildings will likely be low-rise, wood-framed structures, possibly above a one-story concrete podium. All of the buildings will have slab-on-grade floors. It is also possible a concrete parking garage may be constructed on the site. Some of the buildings may have partial or full basements.

2.0 SCOPE OF SERVICES

Our geotechnical report was prepared in accordance with our proposal dated 9 August 2004. The purpose of our preliminary investigation was to evaluate soil and groundwater conditions and provide preliminary geotechnical recommendations for foundation design. We performed a geotechnical investigation for Phases II and III of the Octel Communications Corporation development previously proposed for the subject site and presented the results in our report dated 13 November 1995. We used the results of our previous investigation to develop the preliminary conclusions and recommendations presented herein; no additional subsurface exploration was

performed. Based on the results of our previous field investigation and laboratory testing and our engineering analyses, we have developed preliminary conclusions and recommendations regarding:

- soil and groundwater conditions at the site
- appropriate foundation type(s) for the proposed buildings
- preliminary design criteria for the recommended foundation type(s), including vertical and lateral capacities
- estimated settlement under new fill and foundation loads, including total and differential settlement
- site grading, including criteria for fill quality and compaction
- subgrade preparation for slab-on-grade floors
- flexible (asphalt concrete) and rigid (Portland cement concrete) pavement sections
- site seismicity and seismic hazards, including liquefaction potential
- 2001 California Building Code soil profile type and near-source factors
- construction considerations.

The California State Geological Survey (CGS) has prepared a map titled *State of California Seismic Hazard Zones, Milpitas Quadrangle, Official Map* (Santa Clara Valley portion only), dated 19 April 2004. This map was prepared in accordance with the Seismic Hazards Mapping Act of 1990. The site is within one of the designated liquefaction hazard zones. The CGS has also recommended the content for site investigation reports within seismic hazard zones in the State of California Special Publication (SP) 117, titled *Guidelines for Evaluating and Mitigating Seismic Hazard Zones in California*, dated 13 March 1997. The liquefaction evaluation performed for this investigation was prepared in general accordance with the recommendations presented in SP 117.

3.0 FIELD INVESTIGATION AND LABORATORY TESTING

A total of 13 borings, designated as B-4 through B-6 (drilled in 1992) and B-18 through B-27 (drilled in 1995), were used to evaluate the subsurface conditions at the site. The approximate locations of the borings are shown on Figure 2. The borings were advanced to depths of 36-1/2 to 61-1/2 feet below the existing ground surface (bgs) using truck-mounted rotary-wash drilling equipment. During drilling, our field engineer logged the borings and retrieved representative samples of the soil encountered for further classification and laboratory testing. Logs of the borings as well as a soil classification chart are presented in Appendix A.

Soil samples were obtained using the following samplers:

- Sprague and Henwood (S&H) split-barrel sampler with a 3.0-inch outside diameter and 2.43-inch inside diameter, lined with brass tubes
- Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and 1.5-inch inside diameter (no liners).

The S&H and SPT samplers were driven with a 140-pound safety hammer (operated with a rope-and-cathead pulley system) falling about 30 inches per drop. The blow counts required to drive the S&H sampler the final 12 inches of an 18-inch drive were converted to SPT N-values using a conversion factor of 0.6. The converted SPT N-values are shown on the boring logs. Where the SPT sampler was used, the actual blow counts are shown on the boring logs. After completion, the borings were backfilled with neat cement grout.

The soil samples were re-examined to confirm field classification and representative samples were tested to determine moisture content, dry density, particle size, Atterberg limits (plasticity), strength, consolidation and shrink-swell properties, and resistance value (R-value). The laboratory results are presented in Appendix A.

4.0 SITE AND SUBSURFACE CONDITIONS

The 21.7-acre site is bordered by Murphy Ranch Road to the east, Coyote Creek to the west, a Hetch Hetchy water easement and the Octel development to the south, and a pump station to the north. The site is currently vacant and appears to have been disked recently. The western edge of the site is bordered by an earthen levee that confines the east side of Coyote Creek. The top of the levee is about 10 feet above the ground surface of the project area.

The results of our previous investigations indicate the site is generally underlain by 8 to 10 feet of soft to medium stiff silt and low-plasticity clay with varying sand content, herein referred to as the weak silt and clay layer. The weak silt and clay layer is thicker at the locations of borings B-20 and B-22, where it extends to depths of 12 and 18 feet bgs, respectively. At a few of our boring locations, the upper layer was stiff to hard. The surficial weak silt and clay was generally dry to moist within a few feet of the ground surface at the time of our previous investigation and moist below three feet bgs. The weak silt and clay deposit is underlain by very stiff to hard clay extending to depths of 18 to 33 feet bgs. At many of the boring locations, the very stiff to hard clay layer grades to stiff to very stiff sandy silt or medium dense silty sand between depths of 18 and 28 feet bgs. The medium dense silty sand and stiff to very stiff silt layers, where encountered, are generally about five feet thick. Beneath the majority of the site, these layers grade to dense to very dense sand with varying silt content, which extends to depths of at least 36-1/2 feet bgs. At the location of boring B-5, sand was not encountered, and stiff to very stiff silt and clay extended to a depth of 61-1/2 feet, the maximum depth explored.

Groundwater was measured at depths ranging from 10-1/2 to 14-1/2 feet bgs in our previous investigations. We anticipate the groundwater level fluctuates depending on seasonal variations, variations in the water level in Coyote Creek, and the amount of groundwater being pumped in the general vicinity.

5.0 SEISMIC CONSIDERATIONS

5.1 Regional Seismicity

The major active faults in the area are the Hayward, Calaveras, and San Andreas Faults. These and other faults of the region are shown on Figure 3. For each of the active faults within 50 km of the project site, the distance from the site and estimated maximum Moment magnitude[1] (California Division of Mines and Geology 1996) event are summarized in Table 1.

TABLE 1
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Site (km)	Direction from Site	Maximum Magnitude
Hayward – South East Extension	5.5	Northeast	6.4
Hayward – Total	9.5	Northeast	7.1
Southern Hayward	9.5	Northeast	6.9
Northern Calaveras	11	East	7.0
Central Calaveras	11	East	6.6
Monte Vista	17	Southwest	6.8
San Andreas – 1906 Rupture	23	Southwest	7.9
San Andreas – Peninsula	23	Southwest	7.2
San Andreas – Santa Cruz Mnts.	28	South	7.2
Sargent	31	South	6.8
Southern Greenville	35	Northeast	6.9
Mount Diablo Thrust	37	North	6.7
Zayante-Vergeles	37	South	6.8
Central Greenville	38	Northeast	6.7
Great Valley – 6	39	Northeast	6.7
Great Valley – 7	40	Northeast	6.7
San Gregorio North	44	Southwest	7.3
Northern Hayward	47	Northwest	6.6
Northern Greenville	48	North	6.6

[1] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

Figure 3 also shows the earthquake epicenters for events with magnitude greater than 5.0 from January 1800 through January 1996. Since 1800, four major earthquakes have been recorded on the San Andreas Fault. In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale (Figure 4) occurred east of Monterey Bay on the San Andreas Fault (Toppozada and Borchardt 1998). The estimated Moment magnitude, M_w, for this earthquake is about 6-1/4. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to a M_w of about 7-1/2. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista approximately 430 kilometers in length. It had a maximum intensity of XI (MM), a M_w of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The most recent earthquake to affect the Bay Area was the Loma Prieta Earthquake of 17 October 1989 with a M_w of 6.9. The epicenter of the earthquake was in the Santa Cruz Mountains, approximately 42 km from the site.

In 1868, an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward Fault. The estimated M_w for the earthquake is 7.0. In 1861, an earthquake of unknown magnitude (probably a M_w of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake ($M_w = 6.2$).

In 1999, the Working Group on California Earthquake Probabilities (WGCEP 1999) at the U.S. Geologic Survey (USGS) predicted a 70 percent probability of a magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Area by the year 2030. More specific estimates of the probabilities for different faults in the Bay Area are presented in Table 2.

TABLE 2
WGCEP (1999) Estimates of 30-Year Probability (2000 to 2030) of a Magnitude 6.7 or Greater Earthquake

Fault	Probability (percent)
Hayward-Rodgers Creek	32
San Andreas	21
Calaveras	18
San Gregorio	10
Concord-Green Valley	6
Greenville	6
Mount Diablo	4

5.2 Seismic Hazards

During a major earthquake on a segment of one of the nearby faults, strong shaking is expected to occur at the project site. Strong shaking during an earthquake can result in ground failure such as that associated with soil liquefaction[2], lateral spreading[3], and cyclic densification[4]. We used the results of the borings to evaluate the potential for these phenomena to occur at the project site. Our evaluation of site seismic hazards was performed in general accordance with the guidelines presented in SP 117.

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2 Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits.

3 Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

4 Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground-surface settlement.

5.2.1 Ground Rupture

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. We therefore conclude the risk of fault offset at the site from a known active fault is very low. In a seismically active area, the remote possibility exists for future faulting in areas where no faults previously existed; however, we conclude the risk of surface faulting and consequent secondary ground failure from previously unknown faults is also very low.

5.2.2 Strong Ground Shaking

The ground shaking intensity felt at the project site will depend on: 1) the size of the earthquake (magnitude), 2) the distance from the site to the fault source, 3) the directivity (focusing of earthquake energy along the fault in the direction of the rupture), and 4) subsurface conditions. The site is about 5.5 kilometers from the Southeast Extension of the Hayward Fault and about 9.5 kilometers from the main portion of the Hayward Fault. Therefore, the potential exists for a large earthquake to induce strong to very strong ground shaking at the site during the life of the project.

5.2.3 Cyclic Densification

Seismically induced compaction or cyclic densification of non-saturated sand (sand above the groundwater table) caused by earthquake vibrations may result in differential settlement. Based on the limited subsurface data, we believe the silty layers encountered above the groundwater table are sufficiently cohesive that the risk of cyclic densification is very low.

5.2.4 Liquefaction

When saturated, cohesionless soil liquefies, it experiences a temporary loss of shear strength due to a transient rise in excess pore pressure generated by strong ground motion. Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures and sand boils

are evidence of excess pore pressure generation and liquefaction. We evaluated liquefaction potential at the site in accordance with CSP 117 (CDMG, 1992), as described below.

SP 117 states that liquefaction analyses should be performed using subsurface information from rotary wash borings and/or CPTs. Therefore, we used the data from all of our previous borings for our liquefaction evaluation.

Our liquefaction analysis indicates there are layers of stiff to very stiff silt and sandy silt and medium dense silty sand between depths of 18 and 48 feet bgs that will liquefy following a large earthquake on a nearby fault. The results of our borings indicate the potentially liquefiable layers are typically 4 to 6 feet thick; however, none of the layers appear to be vertically or laterally continuous across the entire site.

We used the procedure outlined in the 1997 NCEER report to estimate liquefaction-induced settlement. To estimate the strain potential of any potentially liquefiable layers, we used the method developed by Tokimatsu and Seed (1984), which relates $(N_1)_{60,CS}$ values to strain potential. Using this analysis, we estimate the total liquefaction-induced settlement will generally be on the order of 3/4 to 2 inches at the boring locations. Some of the boring logs do not appear to have layers of potentially liquefiable soil. However, considering the generally low plasticity of the subsurface soil at the site, we anticipate ground surface settlement on the order of at least 1/2 inch should be expected at all locations due to post-liquefaction reconsolidation. Based on the available data, we estimate liquefaction-induced differential settlement will be on the order of 1/2 inch over a horizontal distance of 30 feet.

Some of the data used for our analysis was incomplete with respect to liquefaction analyses, including fines content and/or Atterberg limits information. Additional borings and/or CPTs will be necessary during our final investigation to refine the data used in our preliminary analyses and determine building-specific liquefaction settlement estimates.

5.2.5 Lateral Spreading

Lateral spreading occurs when a continuous layer of soil liquefies at depth and the soil layers above move toward an unsupported face, such as a shoreline slope, or in the direction of a regional slope or gradient. Based on the discontinuous nature and depth of the potentially liquefiable layers, we believe the potential for lateral spreading to occur at the project site is low.

6.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

On the basis of the subsurface information collected during our previous investigations at the site, we conclude the proposed residential development can be constructed as planned. Preliminary conclusions and recommendations for foundation type and design, site preparation and grading, slab-on-grade floors, concrete flatwork, pavement design, and seismic design are presented in the remainder of the report.

6.1 Foundations and Settlement

We anticipate buildings will generally be constructed with floor slabs within a few feet of existing site grades. Based on the results of our previous investigations, we conclude shallow foundations for the proposed buildings would generally bear on weak silt and be underlain by at least 6 to 8 feet of weak material.

We anticipate the structures associated with the proposed residential development may include relatively light, low-rise, wood-framed structures and heavier structures such as podiums with wood-framed construction above or concrete parking garages. We considered several foundation systems for support of the potential structures, including spread footings with and without reinforced soil, stiffened shallow foundations, and deep foundations. The most appropriate foundation alternatives should address the weak surficial silt and clay as well as potential liquefaction-induced differential settlement. While deep foundations such as driven piles would provide adequate support for buildings at the site, we believe the structural loads for the potential building types will not be large enough to make this foundation alternative economically

feasible. In addition, deep liquefiable deposits would require that the upper 25 to 35 feet of the piles be ignored for frictional capacity. We preliminarily conclude the most appropriate and economical foundation types for buildings at this site consist of stiffened shallow foundations with and/or without reinforced soil, as described below.

We believe the most economical method of foundation support for low-rise wood-framed buildings will consist of stiffened shallow foundations such as post-tensioned slabs-on-grade (P-T slabs) or well-reinforced mat foundations designed using the relatively low bearing pressures presented later in this report. We estimate low-rise wood-framed buildings supported on P-T slabs or mat foundations designed using the preliminary allowable bearing pressures presented later in this report will settle about one inch under dead-plus-live loads, with up to 3/4 inch of differential settlement over a horizontal distance of 30 feet. We estimate each new foot of fill will induce approximately an additional 1/2 inch of settlement; however, this settlement is expected to occur immediately after placement of the fill and will not affect new structures. In addition, post-liquefaction reconsolidation is expected to cause 3/4 to 2 inches of settlement, with up to 1/2 inch of differential settlement over a distance of 30 feet. Therefore, we preliminarily estimate up to three inches of settlement may occur under low-rise wood-framed structures over the life of the project, with up to 1-1/4 inch of differential settlement over a distance of 30 feet.

We anticipate P-T slabs and mat foundations will not be economically feasible to spread column loads on the order of 300 to 700 kips, which would be typical for podium structures or concrete parking garages. Therefore, we preliminarily conclude podium structures or parking garages should be supported on shallow foundations bearing on soil improved by the installation of compacted aggregate piers (CAPs). CAP-supported footings are typically designed to limit foundation settlement to 3/4 inch or less under dead-plus-live loads and 1/2 inch of differential settlement over a distance of 30 feet. However, CAPs will not mitigate the potential differential settlement associated with liquefaction (1/2 inch over a distance of 30 feet) because the liquefiable layers will be below the bottom of the CAPs. We anticipate one inch of differential settlement between adjacent columns may be excessive for conventional shallow foundations.

Therefore, we preliminarily conclude CAP-supported footings should consist of a reinforced grid of footings and grade beams designed to limit differential settlement.

If the proposed development consists of a combination of low-rise wood-framed buildings and podium or parking structures, it may be more economical to support all of the buildings on CAP-supported footings. However, we anticipate the foundation cost savings associated with using CAPs below lightly loaded footings will be less because of the relatively low bearing pressures and the potential differential settlement resulting from post-liquefaction reconsolidation.

As discussed previously, the data used to perform our liquefaction analyses was incomplete in some cases, and the estimated differential settlement resulting from post-liquefaction reconsolidation may change based on additional exploration.

Preliminary recommendations for stiffened shallow foundations and CAP-supported footings are presented in the following subsections.

6.1.1 CAP-Supported Footings

For preliminary design, we recommend CAP-supported footings be bottomed at least 18 inches below the lowest adjacent soil subgrade; however, building code requirements may govern footing depths for buildings taller than three stories. CAPs are typically constructed by drilling a 30- to 36-inch-diameter shaft and replacing the excavated soil with compacted aggregate fill. The aggregate generally consists of clean, open-graded crushed rock below the water table and Class 2 aggregate base above the water table. The aggregate is compacted in approximately 12-inch-thick lifts using a modified hydraulic hammer mounted on an excavator. Compacted aggregate piers develop vertical foundation support through a combination of frictional resistance along the shaft of the pier and improvement of the surrounding soil matrix, allowing use of significantly larger bearing capacities than feasible with the unimproved soil. CAPs can also be designed to resist transient uplift loads by installing steel rods in the center of the pier;

the rod is attached to a flat plate at the base of the pier. Because the foundations are typically designed as footings supported on improved soil, lateral loads are typically resisted through a combination of passive pressure on the face of the footings and friction along the base of the footings. The frictional resistance is typically larger than for a footing supported on unimproved ground because of the presence of the compacted aggregate.

Compacted aggregate piers are typically constructed through a design-build contract. Locally, the most common type of CAPs are Geopiers, installed by the Geopier Foundation Company of Northern California. We anticipate any equivalent system could also be used, although we should review the proposed design prior to incorporation into the project plans.

Because the piers are designed and installed under a design-build contract, we have not analyzed this foundation alternative and cannot provide specific recommendations regarding spacing, costs, vertical and lateral capacities, or estimated settlement. As a minimum, the CAPs should extend through the weak silt and clay layer encountered in our borings and extend at least a few feet into very stiff clay. Therefore, we estimate the CAPs will be about 10 to 20 feet long; the approximate length will be refined once building footprints have been established. We anticipate footings supported on the CAPs can be designed for allowable dead-plus-live load bearing capacities on the order of 5,500 to 6,500 psf, which could significantly reduce the footing dimensions. The design capacity of the CAPs should be verified by at least one load test in compression and one test in tension, if uplift elements are used. We should review the design prior to construction.

As discussed previously, the combination of static settlement and liquefaction-induced settlement is anticipated to be about 2 to 2-3/4 inches of total settlement, with up to one inch of differential settlement over a distance of 30 feet. Therefore, we preliminarily recommend the foundation system be designed as a stiffened grid. For structural design of the stiffened foundation system supported on CAPs, we preliminarily recommend a modulus of subgrade reaction of 140 kips per cubic foot (kcf) be used. This modulus is based on the preliminary allowable bearing pressure for CAP-supported footings and the expected static foundation

settlement. To model the potential differential settlement between columns under static loads, a modulus of 90 kcf should be used beneath the center column of a nine-column (3 by 3) grid and a modulus of 140 kcf should be used beneath the remaining eight columns. To model the potential liquefaction-induced differential settlement between columns, a modulus of 55 kcf should be used beneath the center column of a nine-column (3 by 3) grid and a modulus of 140 kcf should be used beneath the remaining eight columns. Based on our experience with similar foundation systems, we anticipate grade beam-connected footings will be 30 to 36 inches wide for podium or parking structures.

Lateral loads can be resisted by a combination of passive pressure acting on the vertical faces of the footings and friction along the base of the footings, and these can be used in combination without reduction. Passive resistance may be calculated using an equivalent fluid weight of 250 pcf. The upper one foot of soil should be ignored unless it is confined by slabs or pavement. Frictional resistance for CAP-supported footings will be determined by the CAP designer, but for estimating purposes, we anticipate a friction coefficient of 0.4 may be used..

6.1.2 Mats or Post-Tensioned Slabs-on-Grade

We preliminarily recommend low-rise, wood-framed be supported on stiffened shallow foundations consisting of well-reinforced concrete mats or P-T slabs. The edges of the foundation should be thickened such that the foundation edge is bottomed at least six inches below the adjacent exterior grade or three inches below the bottom of the vapor retarder, whichever is lower. We preliminarily conclude that both the mats and P-T slabs will be on the order of 12 to 15 inches thick. We preliminarily recommend the maximum bearing pressure beneath mats and P-T slabs not exceed 1,000 to 1,500 psf under dead-plus-live load conditions. The allowable bearing pressures may be increased by one-third for total loads, including wind and seismic. We anticipate the average bearing pressures beneath low-rise wood-framed structures will be significantly less than the allowable bearing pressures presented above.

For design of the P-T slabs, we have developed design parameters consistent with the recommendations developed by the Post Tensioning Institute [PTI] (1996). For general design of the P-T slabs, we recommend the parameters presented in Table 3 be used.

TABLE 3
General P-T Slab Design Parameters

Parameter	Value
Thornwaite Moisture Index	-10
Edge moisture variation distance Edge lift center lift	 3.0 feet 5.0 feet
Percentage clay	40%
Predominant mineral	Interstratified
Depth to constant soil suction	5 feet
Constant soil suction	3.5 pF
Moisture velocity	0.5 in/month
Soil differential movement	See Below

The soil differential movement is controlled by the amount of differential settlement expected rather than the potential for seasonal differential movement. Therefore, we recommend the slabs be designed for the edge-lift condition using special "compressible soil" design equations specified in Chapter 6 of the PTI manual. For this procedure, we preliminarily recommend total and differential settlement values of 3 and 1-1/4 inches be used for design, respectively.

If conventionally reinforced mats are used in lieu of P-T slabs, they should be evaluated to check they can span an unsupported area 15 feet in diameter in the interior of the building and to cantilever a distance of five feet along the edges and 7.5 feet at the corners. This evaluation for "areas of non-support" is purely empirical and is not intended to model actual site performance; the purpose of the evaluation is to establish foundation stiffness to control differential movement.

Lateral loads for either foundation type can be resisted by a combination of passive pressure acting on the vertical faces of the footings and friction along the base of the mat or P-T slab. Passive resistance may be calculated using an equivalent fluid weight of 250 pcf. The upper one foot of soil should be ignored unless it is confined by slabs or pavement. Frictional resistance should be computed using a base friction coefficient of 0.25 where the P-T slab is directly in contact with the native soil. Where the P-T slab is underlain by a vapor retarder, a base friction coefficient of 0.15 should be used. These values include a factor of safety of about 1.5.

6.2 Site Preparation and Grading

Prior to grading, the site should be cleared of vegetation and soil containing greater than four percent organic materials by dry weight of soil. The site has been disked in the past, and based on our experience at the adjacent site, we anticipate the upper 8 to 10 inches of disked soil will contain excessive organics and will require removal to meet these requirements. Stripped materials should be removed from the site or stockpiled for later use in landscaped areas, if approved by the architect. Existing underground utilities, if any, should be removed to the property lines or service connections and properly capped or plugged with concrete. Where existing utility lines will not interfere with the proposed construction, they may be abandoned in-place provided the lines are filled with lean concrete or cement grout to the property line.

In cut and fill areas, the exposed ground surface should be scarified to a depth of at least 12 inches, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction[5]. The soil subgrade should be kept moist until it is covered by fill or concrete.

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[5] Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557-00 laboratory compaction procedure.

Fill should consist of on-site or imported soil that is free of organic matter, contains no rocks or lumps larger than three inches in greatest dimension, has a liquid limit less than 40 and plasticity index less than 12, and is approved by the geotechnical engineer. We anticipate on-site soil will generally meet the fill requirements. Fill should be placed in lifts not exceeding eight inches in loose thickness, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction.

In pavement areas (Portland cement concrete or asphalt concrete) that will receive vehicular traffic, the upper six inches of the subgrade should be compacted to at least 95 percent relative compaction to achieve a firm, unyielding subgrade. The soil subgrade should be kept moist until it is covered by aggregate base.

The Geotechnical Engineer should approve all sources of engineered fill at least three days before use at the site. The grading subcontractor should provide analytical test results or other suitable environmental documentation indicating the imported fill is free of hazardous materials at least three days before use at the site. If this data is not available, up to two weeks should be allowed to perform analytical testing on the proposed import material. If the on-site material is to be exported, analytical testing of the soil may be required by the party or parties receiving the soil.

Backfill for utility trenches and other excavations is also considered fill, and it should be compacted according to the recommendations provided above. If imported or existing clean sand or gravel is used as backfill, however, it should be compacted to at least 90 percent relative compaction if the fill thickness is less than three feet and at least 95 percent relative compaction if the fill thickness is more than three feet. Jetting of trench backfill is not permitted.

6.2.1 Special Grading Considerations

Based on our experience with the surficial weak silt, the soil will be weak and difficult to compact when wet. We anticipate this condition will exist where in-place recompaction is

required of native materials deeper than two feet bgs. Therefore, if it is anticipated that significant excavations deeper than two feet will be performed (i.e., partial basements), we anticipate subgrade stabilization will be required. For smaller areas, subgrade stabilization may consist of overexcavation of the upper 12 to 24 inches of weak, wet soil, placement of a geotextile tensile fabric (Mirafi 500X or equivalent) over the bottom and sides of the excavation, and placement and compaction of Class 2 aggregate base to fill the void and stabilize the excavation.

If stabilization is required over larger areas, it may be more cost-effective to treat the upper 12 to 18 inches of unstable subgrade with lime or cement. Based on the low plasticity of the surficial silt, we anticipate treatment with cement or a lime-cement mixture would be more appropriate. The cement reacts with the soil to create strong physical bonds in the soil, resulting in increased strength. Cement treatment is typically performed by a specialty contractor using specialized equipment to fully blend the chemical additive to full width and depth. Moisture conditioning is performed during the treatment process, and compaction is performed with large sheepsfoot-type compaction equipment.

Grading in areas where weak, wet silt is within a couple feet of the existing ground surface is expected to be difficult. Pumping and rutting of the ground surface under construction traffic wheel loads may result in uneven, weak subgrade soil that is not suitable for support of the proposed improvements. Because pumping and soft subgrade conditions are often exacerbated by heavy, rubber-tired construction equipment, such as scrapers, we have developed recommendations to help reduce the amount of subgrade repair required at the site.

We recommend heavy, rubber-tired grading equipment, such as scrapers, motor graders, and articulated trucks, not be allowed on the building pads. Backhoes, skip loaders, and other lightweight (less than 25,000 pounds), rubber-tired grading equipment are acceptable for use on the building pads. Other rubber-tired equipment, such as Skytraks, Gradalls, water trucks, and concrete trucks, can be used around the perimeter of the buildings (i.e., driveways, landscape areas, walkways, etc.), but also should not be allowed on the building pads. Compaction within

the building pads should be performed with lightweight (less than 20,000 pounds) compaction equipment, such as a Caterpillar (CAT) CP-232C or CAT CP-433C, or equivalent.

We recommend grading for this project be performed during the summer and fall months to avoid saturation of the near-surface soil. We believe this will result in significantly more efficient grading operations and less potential for extra work associated with mitigation of weak subgrade conditions.

6.3 Concrete Slab-on-Grade Floors

The soil subgrade beneath concrete slab-on-grade floors and P-T slabs or mat foundations should be prepared in accordance with the recommendations in Section 6.2 of this report. Where the slab will be subject to vehicular traffic, we recommend the upper six inches of soil subgrade be compacted to at least 95 percent relative compaction. The soil subgrade in areas that will not receive vehicular traffic should be compacted to at least 90 percent relative compaction. If the previously compacted soil subgrade is disturbed during foundation and utility excavation, the subgrade should be rerolled to provide a firm, unyielding surface prior to placement of the capillary break material.

Where water vapor transmission through the floor slab is undesirable (e.g., where floor covering will be placed), we recommend a capillary moisture break and a water vapor retarder be installed beneath the floor. A capillary moisture break and vapor retarder are generally not required below parking slabs-on-grade because there is sufficient air circulation to limit condensation of moisture on the slab surface. As an alternative to the capillary moisture break/vapor retarder described below, six inches of Class 2 aggregate base compacted to at least 95 percent relative compaction should be placed beneath the parking structure slab where the slab will receive vehicular traffic.

A capillary moisture break consists of at least four inches of clean, free-draining gravel or crushed rock. The vapor retarder should meet the requirements for Class C vapor retarders stated

in ASTM E1745-97. The vapor retarder should be placed in accordance with the requirements of ASTM E1643-98. These requirements include overlapping seams by six inches, taping seams, and sealing penetrations in the vapor retarder. The vapor retarder should be covered with two inches of sand to aid in curing the concrete and to protect the vapor retarder during slab construction. The particle size of the gravel/crushed rock and sand should meet the gradation requirements presented in Table 4.

TABLE 4
Gradation Requirements for Capillary Moisture Break

Sieve Size	Percentage Passing Sieve
Gravel or Crushed Rock	
1 inch	90 – 100
3/4 inch	30 – 100
1/2 inch	5 – 25
3/8 inch	0 – 6
Sand	
No. 4	100
No. 200	0 – 5

The sand overlying the membrane should be moist at the time concrete is placed; however, it should not contain free water. Excess water trapped in the sand could eventually be transmitted as vapor through the slab. If rain is forecast prior to pouring the slab, the sand should be covered with plastic sheeting to avoid wetting. If the sand becomes wet, concrete should not be placed until the sand has been dried or replaced.

Concrete mixes with high water/cement (w/c) ratios result in excess water in the concrete, which increases the cure time and results in excessive vapor transmission through the slab. Therefore, concrete for the floor slab should have a low w/c ratio - less than 0.50. If approved by the

project structural engineer, the sand can be eliminated and the concrete can be placed directly over the vapor retarder, provided the w/c ratio of the concrete does not exceed 0.45 and water is not added in the field. If necessary, workability should be increased by adding plasticizers. In addition, the slab should be properly cured.

The current standard-of-practice in the northern California area does not include placing a gravel capillary break beneath P-T slab foundations. Although we believe this practice increases the risk of unacceptable levels of water vapor transmission through the slabs, it is our understanding it has been used successfully for at least 10 years. If the gravel is not used beneath P-T slabs, a vapor retarder meeting the requirements for Class B vapor retarders, overlain by two inches of sand meeting the gradation requirements presented in Table 4, should be used in lieu of a Class C vapor retarder.

In some cases, it is cost effective to remove both the sand and gravel from the capillary break and vapor retarder system used beneath P-T slabs. If it is desired to remove these materials from the underslab system, we recommend a Type A vapor retarder be used in lieu of a Type C vapor retarder. Type A vapor retarders have a lower inherent permeance rating and are less prone to accidental puncture. Examples of Type A vapor retarders are Stego-wrap 15-mil sheeting and Moiststop Ultra A polyolefin sheeting, although any equivalent system can be used. We should observe the condition of the membrane prior to placement of the sand and prior to placement of concrete to check that holes and other penetrations in the membrane have been minimized.

Before the floor covering is placed, the contractor should check that the concrete surface and the moisture emission levels (if emission testing is required) meet the manufacturer's requirements.

6.4 Asphalt Concrete Pavement

The State of California flexible pavement design method was used to develop the recommended asphalt concrete pavement sections. Laboratory test results indicate the near-surface sandy silt has an R-value of 26. However, because of the weak soil conditions encountered during grading for the adjacent Octel site and difficulties in establishing a firm compacted subgrade, we used a reduced R-value of 10 for design of new pavements.

For our calculations, we assumed a Traffic Index (TI) of 4.5 for parking stalls and 5.5 for driveways and drive aisles; these TIs should be confirmed by the project civil engineer. Table 5 presents our recommendations for asphalt pavement sections.

TABLE 5
Pavement Section Design

TI	Asphaltic Concrete (inches)[6]	Class 2 Aggregate Base R = 78 (inches)[7]
4.5	2.5	9.0
5.5	3.0	11.0

Pavement components should conform to the current Caltrans Standard Specifications.
In pavement areas, the upper six inches of subgrade should be compacted to at least 95 percent relative compaction to provide a firm, nonyielding subgrade. The Class 2 aggregate base should be moisture-conditioned to near optimum moisture content and compacted to at least 95 percent relative compaction. The soil subgrade should be kept moist until it is covered by aggregate base.

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6 Minimum asphalt thickness shall be 2.5 inches.
7 Minimum aggregate base thickness shall be 6 inches.

6.5 Portland Cement Concrete Pavement

Concrete pavement design is based on a maximum single-axle load of 20,000 pounds and a maximum tandem axle of 32,000 pounds. The recommended rigid pavement section for these axle loads is six inches of Portland cement concrete over six inches of Class 2 aggregate base assuming the truck traffic is light to moderate.

The modulus of rupture of the concrete should be at least 500 pounds per square inch (psi) at 28 days. Contraction joints should be constructed at a 15-foot spacing. Where the outer edge of a concrete pavement meets asphalt pavement, the concrete slab should be thickened by 50 percent at a taper not to exceed a slope of 1 in 10. Concrete pavements subject to garbage truck traffic should be at least seven inches thick and reinforced with a minimum of No. 4 bars at 16 inches on center in both directions. Recommendations for subgrade preparation and aggregate base compaction for concrete pavement are the same as those we have described above for asphalt pavement.

6.6 Concrete Flatwork

In areas to receive concrete patios, sidewalks or other flatwork, the native soil subgrade should be scarified to a depth of at least 12 inches, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction. On-site exterior concrete flatwork and sidewalks should be underlain by at least four inches of Class 2 aggregate base. The aggregate base should extend at least six inches beyond the slab edges, and should be moisture-conditioned to near optimum moisture content and compacted to at least 90 percent relative compaction. Public sidewalks should be constructed in accordance with the City of Milpitas requirements.

6.7 Seismic Design

The proposed buildings should be designed to the appropriate seismic codes. The project site is about 5.5 kilometers from the Southeast Extension of the Hayward Fault, defined as a type B

fault in Chapter 16 of the 2001 California Building Code (CBC), and it is about 9.5 kilometers from the main trace of the Hayward Fault, defined as a Type A fault in the 2001 CBC. The type A portion of the Hayward Fault controls the seismic design. Hence, for design in accordance with the 2001 CBC seismic code, we recommend the following:

- Seismic Zone Factor 4
- Soil Profile S_D
- Near Source Factors N_a and N_v of 1.02 and 1.24, respectively.

Per the 2001 CBC, the site could be classified as soil type S_F because of the presence of liquefiable soil beneath the site. Soil type S_F requires a site-specific evaluation to be performed. However, for buildings less than about eight stories tall, short-period, high-frequency motion typically controls for earthquake structural design, and the S_D soil profile type provides the most conservative design parameters for these earthquake motions. Therefore, because we do not anticipate any new structures taller than eight stories, we preliminarily conclude soil profile S_D is appropriate and conservative for the site. This will be confirmed during the final investigation.

7.0 ADDITIONAL GEOTECHNICAL SERVICES

The recommendations provided in this report are preliminary in nature as specific development plans are not available at this time and only limited subsurface exploration was performed for this investigation. A final geotechnical investigation, including additional subsurface exploration and laboratory testing, should be performed prior to final design. Information required for us to plan our final investigation includes building footprint locations, building loads, estimated finished floor elevations, and allowable settlement tolerances. Once the development plans have been provided and additional geotechnical testing has been performed, we can provide final recommendations for foundation design.

8.0 LIMITATIONS

The conclusions and recommendations presented in this report result from limited engineering studies based on our interpretation of the existing geotechnical conditions and available subsurface data. Actual subsurface conditions may vary. If any variations or unforeseen conditions are encountered during construction, or if the proposed construction will differ from that which is described in this report, Treadwell & Rollo should be notified so that supplemental recommendations can be made.

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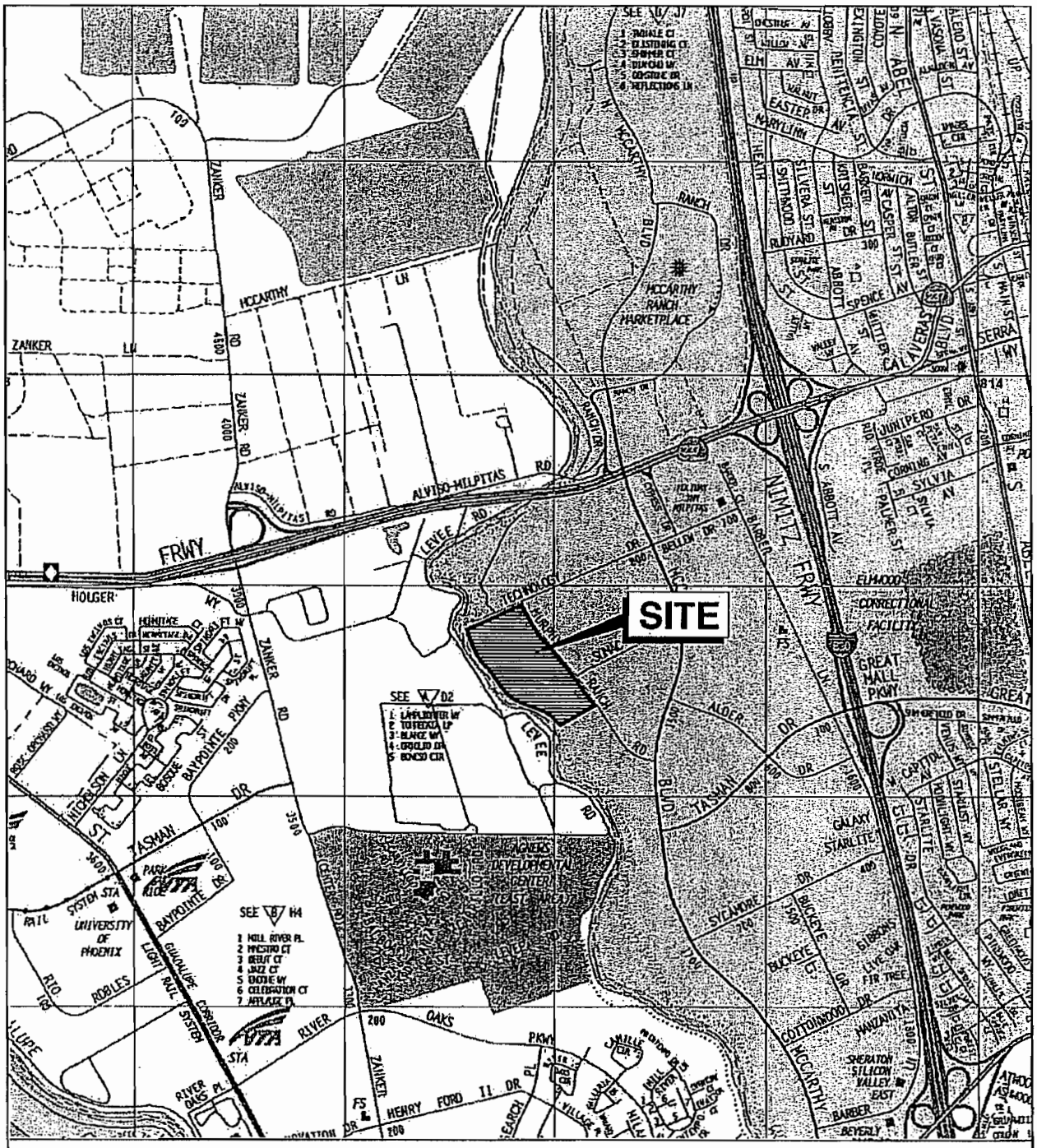
Treadwell&Rollo

FIGURES



Base map: The Thomas Guide
Santa Clara County
1999

0 1/4 1/2 Mile

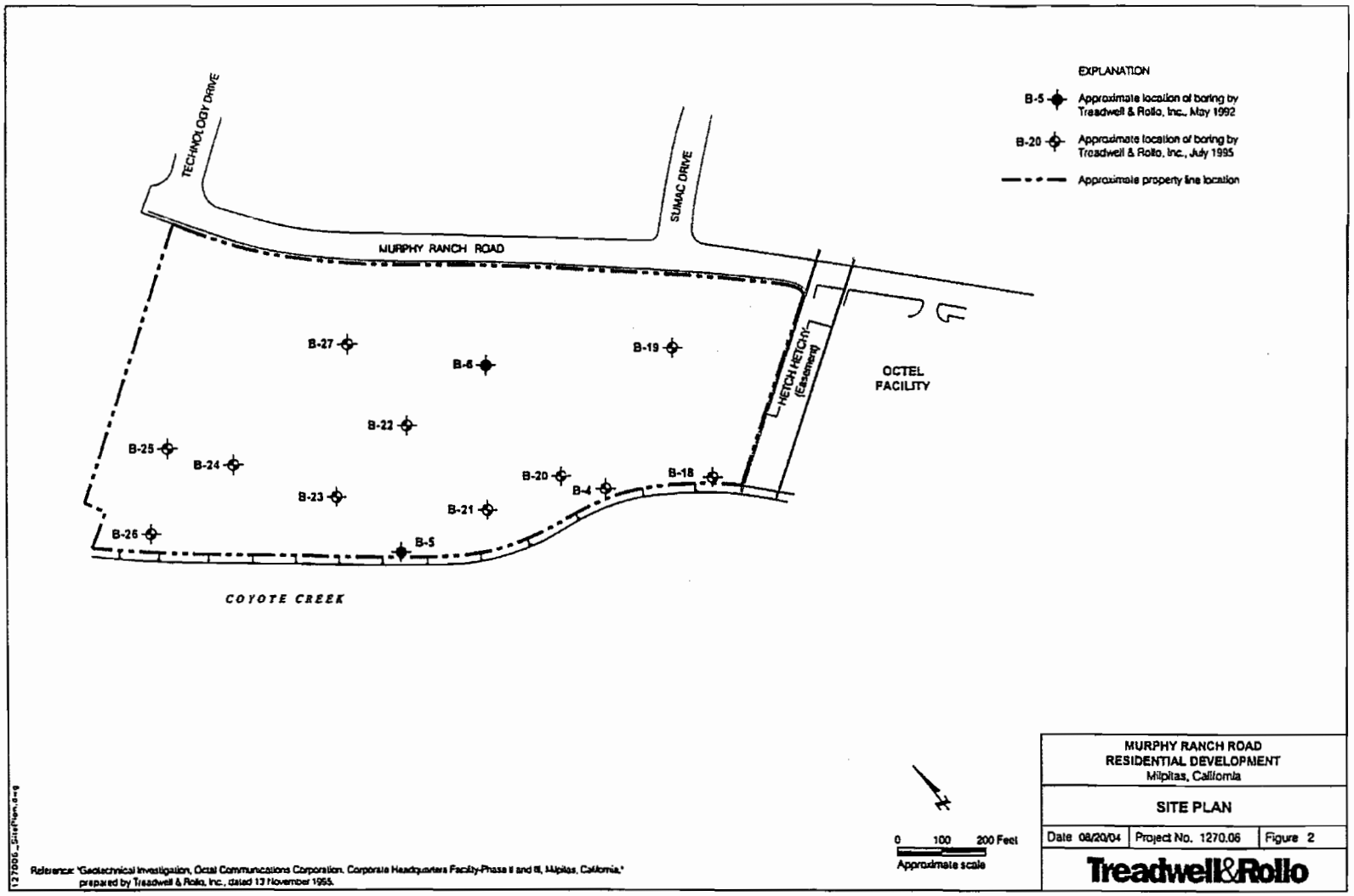
Approximate scale

MURPHY RANCH ROAD
RESIDENTIAL DEVELOPMENT
Milpitas, California

Treadwell&Rollo

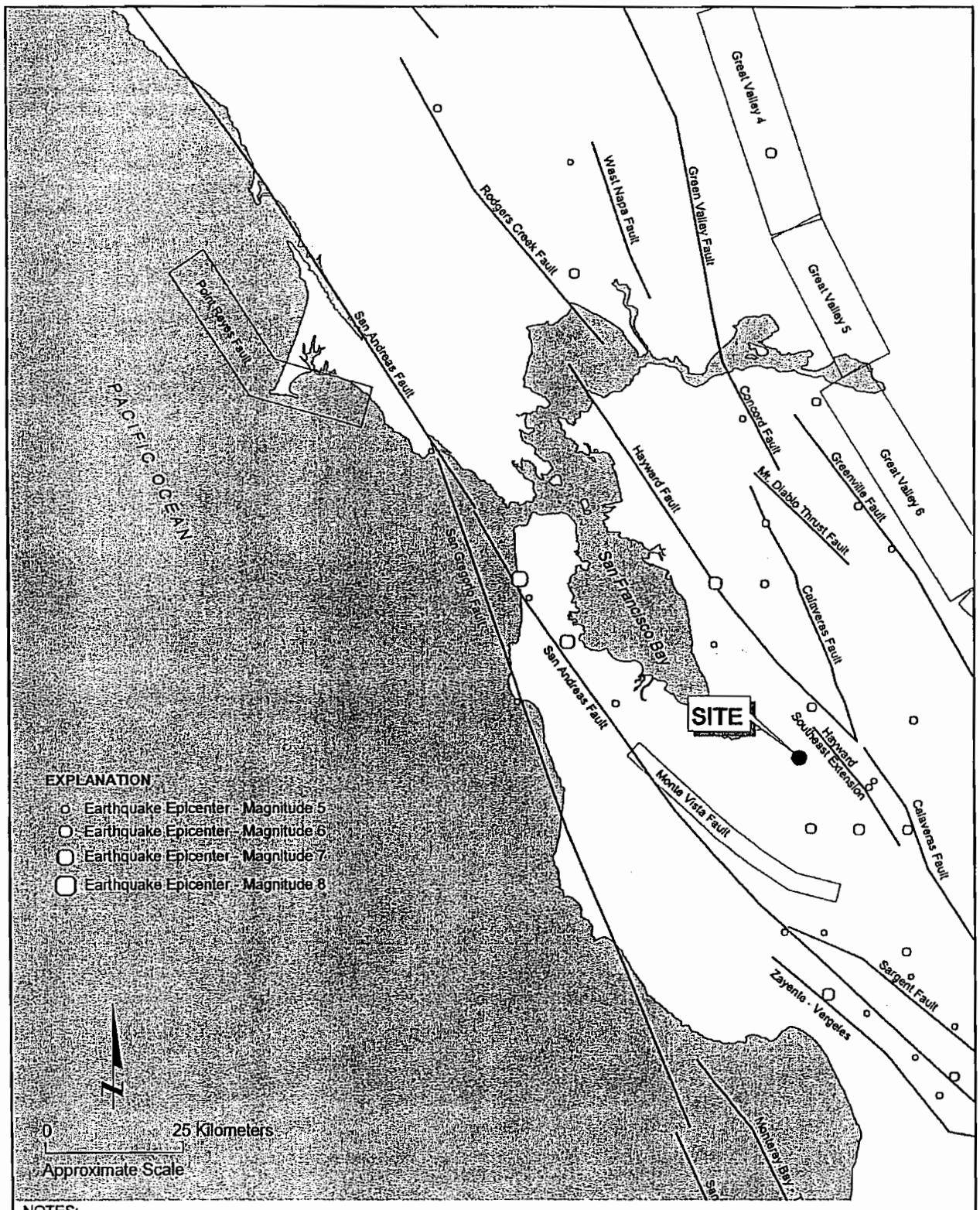
SITE LOCATION MAP

Date 08/20/04	Project No. 1270.06	Figure 1



Reference: "Geotechnical Investigation, Octel Communications Corporation, Corporate Headquarters Facility-Phase II and III, Milpitas, California," prepared by Treadwell & Rollo, Inc., dated 13 November 1995.

MURPHY RANCH ROAD RESIDENTIAL DEVELOPMENT Milpitas, California		
SITE PLAN		
Date 08/20/04	Project No. 1270.06	Figure 2
Treadwell&Rollo		



NOTES:
Digitized data for fault coordinates and earthquake catalog was developed by the California Department of Conservation Division of Mines and Geology. The historic earthquake catalog includes events from January 1800 to December 2000.

MURPHY RANCH ROAD RESIDENTIAL DEVELOPMENT Milpitas, California	MAP OF MAJOR FAULTS AND EARTHQUAKE EPICENTERS IN THE SAN FRANCISCO BAY AREA
Treadwell&Rollo	Date: 08/20/04 | Project No. 1270.06 | Figure: 3

I **Not felt by people, except under especially favorable circumstances. However, dizziness or nausea may be experienced.**
Sometimes birds and animals are uneasy or disturbed. Trees, structures, liquids, bodies of water may sway gently, and doors may swing very slowly.

II **Felt indoors by a few people, especially on upper floors of multi-story buildings, and by sensitive or nervous persons.**
As in Grade I, birds and animals are disturbed, and trees, structures, liquids and bodies of water may sway. Hanging objects swing, especially if they are delicately suspended.

III **Felt indoors by several people, usually as a rapid vibration that may not be recognized as an earthquake at first. Vibration is similar to that of a light, or lightly loaded trucks, or heavy trucks some distance away. Duration may be estimated in some cases.**
Movements may be appreciable on upper levels of tall structures. Standing motor cars may rock slightly.

IV **Felt indoors by many, outdoors by a few. Awakens a few individuals, particularly light sleepers, but frightens no one except those apprehensive from previous experience. Vibration like that due to passing of heavy, or heavily loaded trucks. Sensation like a heavy body striking building, or the falling of heavy objects inside.**
Dishes, windows and doors rattle; glassware and crockery clink and clash. Walls and house frames creak, especially if intensity is in the upper range of this grade. Hanging objects often swing. Liquids in open vessels are disturbed slightly. Stationary automobiles rock noticeably.

V **Felt indoors by practically everyone, outdoors by most people. Direction can often be estimated by those outdoors. Awakens many, or most sleepers. Frightens a few people, with slight excitement; some persons run outdoors.**
Buildings tremble throughout. Dishes and glassware break to some extent. Windows crack in some cases, but not generally. Vases and small or unstable objects overturn in many instances, and a few fall. Hanging objects and doors swing generally or considerably. Pictures knock against walls, or swing out of place. Doors and shutters open or close abruptly. Pendulum clocks stop, or run fast or slow. Small objects move, and furnishings may shift to a slight extent. Small amounts of liquids spill from well-filled open containers. Trees and bushes shake slightly.

VI **Felt by everyone, indoors and outdoors. Awakens all sleepers. Frightens many people; general excitement, and some persons run outdoors.**
Persons move unsteadily. Trees and bushes shake slightly to moderately. Liquids are set in strong motion. Small bells in churches and schools ring. Poorly built buildings may be damaged. Plaster falls in small amounts. Other plaster cracks somewhat. Many dishes and glasses, and a few windows break. Knickknacks, books and pictures fall. Furniture overturns in many instances. Heavy furnishings move.

VII **Frightens everyone. General alarm, and everyone runs outdoors.**
People find it difficult to stand. Persons driving cars notice shaking. Trees and bushes shake moderately to strongly. Waves form on ponds, lakes and streams. Water is muddied. Gravel or sand stream banks cave in. Large church bells ring. Suspended objects quiver. Damage is negligible in buildings of good design and construction; slight to moderate in well-built ordinary buildings; considerable in poorly built or badly designed buildings, adobe houses, old walls (especially where laid up without mortar), spires, etc. Plaster and some stucco fall. Many windows and some furniture break. Loosened brickwork and tiles shake down. Weak chimneys break at the roofline. Cornices fall from towers and high buildings. Bricks and stones are dislodged. Heavy furniture overturns. Concrete irrigation ditches are considerably damaged.

VIII **General fright, and alarm approaches panic.**
Persons driving cars are disturbed. Trees shake strongly, and branches and trunks break off (especially palm trees). Sand and mud erupts in small amounts. Flow of springs and wells is temporarily and sometimes permanently changed. Dry wells renew flow. Temperatures of spring and well waters varies. Damage slight in brick structures built especially to withstand earthquakes; considerable in ordinary substantial buildings, with some partial collapse; heavy in some wooden houses, with some tumbling down. Panel walls break away in frame structures. Decayed pilings break off. Walls fall. Solid stone walls crack and break seriously. Wet grounds and steep slopes crack to some extent. Chimneys, columns, monuments and factory stacks and towers twist and fall. Very heavy furniture moves conspicuously or overturns.

IX **Panic is general.**
Ground cracks conspicuously. Damage is considerable in masonry structures built especially to withstand earthquakes; great in other masonry buildings - some collapse in large part. Some wood frame houses built especially to withstand earthquakes are thrown out of plumb, others are shifted wholly off foundations. Reservoirs are seriously damaged and underground pipes sometimes break.

X **Panic is general.**
Ground, especially when loose and wet, cracks up to widths of several inches; fissures up to a yard in width run parallel to canal and stream banks. Landsliding is considerable from river banks and steep coasts. Sand and mud shifts horizontally on beaches and flat land. Water level changes in wells. Water is thrown on banks of canals, lakes, rivers, etc. Dams, dikes, embankments are seriously damaged. Well-built wooden structures and bridges are severely damaged, and some collapse. Dangerous cracks develop in excellent brick walls. Most masonry and frame structures, and their foundations are destroyed. Railroad rails bend slightly. Pipe lines buried in earth tear apart or are crushed endwise. Open cracks and broad wavy folds open in cement pavements and asphalt road surfaces.

XI **Panic is general.**
Disturbances in ground are many and widespread, varying with the ground material. Broad fissures, earth slumps, and land slips develop in soft, wet ground. Water charged with sand and mud is ejected in large amounts. Sea waves of significant magnitude may develop. Damage is severe to wood frame structures, especially near shock centers, great to dams, dikes and embankments, even at long distances. Few if any masonry structures remain standing. Supporting piers or pillars of large, well-built bridges are wrecked. Wooden bridges that "give" are less affected. Railroad rails bend greatly and some thrust endwise. Pipe lines buried in earth are put completely out of service.

XII **Panic is general.**
Damage is total, and practically all works of construction are damaged greatly or destroyed. Disturbances in the ground are great and varied, and numerous shearing cracks develop. Landslides, rock falls, and slumps in river banks are numerous and extensive. Large rock masses are wrenched loose and torn off. Fault slips develop in firm rock, and horizontal and vertical offset displacements are notable. Water channels, both surface and underground, are disturbed and modified greatly. Lakes are dammed, new waterfalls are produced, rivers are deflected, etc. Surface waves are seen on ground surfaces. Lines of sight and level are distorted. Objects are thrown upward into the air.

MURPHY RANCH ROAD RESIDENTIAL DEVELOPMENT Milpitas, California	MODIFIED MERCALLI INTENSITY SCALE
Treadwell&Rollo	Date: 08/20/04 | Project No. 1270.06 | Figure: 4

Treadwell&Rollo

APPENDIX A

Logs of Borings and Laboratory Test Results from Previous Investigations

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-4	PAGE 1 OF 2

Boring location: See Figure 2

Logged by E. Oman

Date started: 5/12/92 | Date finished: 5/13/92

Drilling method: Rotary wash

Hammer weight: 140 lbs. | Drop: 30 inches

Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 22 feet [2])	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1				ML	SANDY SILT (ML) brown, medium stiff, dry						
2											
3					CLAY (CL) brown and gray, soft, moist						
4					PI = 8, LL = 30						
5	1	☒	4					91			
6											
7											
8											
9											
10	2	■	19		very stiff, moist Consolidation Test, see Figure A-39					24.2	99
11											
12											
13											
14				CL							
15	3	■	16		very stiff, saturated	TxUU	990		2,400	20	110
16											
17											
18											
19											
20	4	■	21								
21											
22											
23											
24											
25	5	■	18								
26											
27					increasing silt content						
28											
29											
30	6	■	8							31	93

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-4

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
				CL	CLAY (CL) (continued)						
31					Boring terminated at a depth of 30.5 feet.						
32					Boring backfilled with cement/bentonite grout.						
33					Depth to groundwater obscurred by drilling method.						
34					[1] Blow counts converted to equivalent SPT N-values.						
35					[2] Elevations based on Octel Site Survey, prepared by Mark Thomas & Company, Inc., dated 6/2/92.						
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											
46											
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-5	PAGE 1 OF 3

Boring location: See Figure 2

Logged by E. Oman

Date started: 5/13/92 | Date finished: 5/13/92

Drilling method: Rotary wash

Hammer weight: 140 lbs. | Drop: 30 inches

Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION Ground Surface Elevation: 22 feet[2]	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1–2	1	X	4	ML	SILT with SAND (ML) brown, soft, moist PI = 7, LL = 27			85			
4–5	2	X	7	CL	SANDY CLAY with SILT (CL) brown and gray, medium stiff, moist						
10	3	■	19		very stiff, moist					25	102
15	4	■	29		very stiff, saturated						
20	5	■	10		stiff, saturated					29	95
25	6	■	20		very stiff, saturated						
30	7	■	16							21	108

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-5

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot 1	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31				CL	SANDY CLAY (CL) brown and gray, very stiff, saturated						
32											
33											
34											
35	8	■	14		stiff, saturated						
36											
37											
38											
39											
40	9	■	21		very stiff, saturated						
41											
42											
43				ML	SANDY SILT (ML) brown and gray, medium dense, saturated PI = 1, LL = 22						
44											
45	10	■	16					61			
46											
47											
48				CL	SANDY CLAY (CL) brown and gray, very stiff, saturated						
49											
50	11	■	25							25	103
51											
52											
53											
54											
55	12	■	23								
56											
57											
58											
59											
60											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-5

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
	13		39	CL	SANDY CLAY (CL) (continued)						
61					Boring terminated at a depth of 60.5 feet.						
62					Boring backfilled with cement/bentonite grout.						
63					Depth to groundwater obscurred by drilling method.						
64					[1] Blow counts converted to equivalent SPT N-values.						
65					[2] Elevations based on Octel Site Survey, prepared by Mark Thomas & Company, Inc., dated 6/2/92.						
66											
67											
68											
69											
70											
71											
72											
73											
74											
75											
76											
77											
78											
79											
80											
81											
82											
83											
84											
85											
86											
87											
88											
89											
90											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	**Log of Boring B-6**	PAGE 1 OF 2

Boring location: See Figure 2		Logged by E. Oman
Date started: 5/13/92	Date finished: 5/13/92	
Drilling method: Rotary wash		
Hammer weight: 140 lbs.	Drop: 30 inches	
Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test		

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION Ground Surface Elevation: 22 feet[2]	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1–2	1		4	ML	SANDY SILT (ML) brown, medium stiff, moist			71			
5	2		6	ML	PI = 10, LL = 29 increasing clay content					20	100
10	3		20	CL	SANDY CLAY (CL) brown and gray, very stiff, moist					24	103
16	4		16	CL	very stiff, saturated	TxUU	990		1,200	27	99
20	5		14	CL	stiff, saturated						
25	6		18	CL	very stiff, saturated PI= 19, LL = 39						
29–30	7		19	ML	SANDY SILT (ML) brown and gray, medium dense, saturated PI = 0, LL = 23			64			

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-6

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
				ML	SANDY SILT (ML) (continued)						
31					Boring terminated at a depth of 30.5 feet.						
32					Boring backfilled with cement/bentonite grout.						
					Depth to groundwater obscurred by drilling method.						
33											
34					[1] Blow counts converted to equivalent SPT N-values.						
35											
36					[2] Elevations based on Octel Site Survey, prepared by Mark Thomas & Company, Inc., dated 6/2/92.						
37											
38											
39											
40											
41											
42											
43											
44											
45											
46											
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-18

Boring location: See Figure 2
Logged by M. Oman
Date started: 7/26/95 | Date finished: 7/26/95
Drilling method: Rotary wash
Hammer weight: 140 lbs. | Drop: 30 inches
Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 21.4 feet[2])	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1				ML	SANDY SILT (ML) brown, stiff, moist						
2											
3	1	■	13								
4											
5											
6	2	■	6		Shrink-Swell Test, see Figure A-41 medium stiff					30.3	89
7				CL	CLAY (CL) gray-brown, hard, wet						
8											
9											
10	3	■	40							25.7	101
11											
12											
13											
14											
15											
16	4	■	49								
17											
18				ML	SANDY SILT (ML) mottled orange, brown, and gray, stiff, wet						
19											
20											
21	5	■	9								
22				CL	SANDY CLAY (CL) mottled orange, brown, and gray, very stiff, wet						
23											
24											
25											
26	6	■	16								
27											
28											
29											
30											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-18

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7		11	CL	CLAY (CL) gray-brown, stiff, wet						
32											
33											
34											
35				SM	SILTY SAND (SM) dark gray, medium dense, wet						
36	8		16								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method.						
38											
39											
40					[1] Blow counts converted to equivalent SPT N-values.						
41											
42					[2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
43											
44											
45											
46											
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	**Log of Boring B-19**	PAGE 1 OF 2

Boring location: See Figure 2		Logged by M. Oman
Date started: 7/27/95	Date finished: 7/28/95	
Drilling method: Rotary wash		
Hammer weight: 140 lbs.	Drop: 30 inches	
Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test		

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION Ground Surface Elevation: 21.2 feet [2]	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1				ML	SANDY SILT (ML) brown, medium stiff, moist						
2											
3	1	■	5								
4											
5				CL	SANDY CLAY (CL) brown, medium stiff, wet						
6	2	■	7							26.2	99
7											
8											
9											
10											
11	3	■	39								
12											
13											
14					▽ 7/28/95 (unstabilized)						
15											
16	4	■	48								
17											
18											
19											
20											
21	5	■	31								
22											
23											
24											
25											
26	6	■	10								
27											
28											
29											
30											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-19

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7		11	CL	SANDY CLAY (CL) (continued)						
32				SM	SILTY SAND (SM) brown and gray, dense, wet						
33											
34											
35											
36	8		30								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Unstabilized groundwater level measured at a depth of 14.0 feet.						
38											
39											
40					[1] Blow counts converted to equivalent SPT N-values.						
41											
42					[2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
43											
44											
45											
46											
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-20	PAGE 1 OF 2

Boring location: See Figure 2

Logged by M. Oman

Date started: 7/26/95 | Date finished: 7/26/95

Drilling method: Rotary wash

Hammer weight: 140 lbs. | Drop: 30 inches

Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 20.4 feet [2])	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1–9	1, 2		9, 5	ML	SANDY SILT (ML) brown, stiff, moist Direct Shear Test, see Figure A-36 c = 250 psf, Ø = 22.5°						
10–11	3		5	CL	CLAY (CL) brown, soft to medium stiff, moist	TxUU	750		420	28.7	85
12–16	4		20	CL	SANDY CLAY (CL) mottled orange and brown, very stiff, wet						
17–26	5, 6		28, 22	CL	CLAY (CL) brown-gray, very stiff, wet						
27–30											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-20

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
	7		15	CL	SANDY CLAY (CL) (continued)						
31	8			SM	SILTY SAND (SM) dark gray, medium dense, wet						
32											
33											
34											
35			20	SP	SAND (SP) dark gray, medium dense, wet						
36	9										
37											
38				SM	SILTY SAND (SM) dark gray, very dense, wet						
39											
40											
41											
42											
43											
44											
45											
46	10		77								
47					Boring terminated at a depth of 46.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method.						
48											
49					[1] Blow counts converted to equivalent SPT N-values.						
50											
51					[2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
52											
53											
54											
55											
56											
57											
58											
59											
60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-21	PAGE 1 OF 2

Boring location: See Figure 2

Logged by M. Oman

Date started: 7/26/95 | Date finished: 7/27/95

Drilling method: Rotary wash

Hammer weight: 140 lbs. | Drop: 30 inches

Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 20.5 feet[2])	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1					SILT (ML) brown, medium stiff, dry to moist						
2	1	■	7	ML	Particle Size Analysis Test, see Figure A-31			90.5			
3											
4					CLAY (CL) brown, medium stiff, moist						
5											
6	2	■	6							26.7	97
7											
8											
9											
10											
11	3	■	33	CL	very stiff						
12					▽ 7/27/95 (unstabilized)						
13											
14											
15	4	■	32								
16											
17											
18											
19											
20	5	■	35		very stiff to hard						
21											
22											
23											
24				CL							
25											
26	6	■	20		very stiff						
27											
28											
29											
30											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-21

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7		20	CL	CLAY (CL) (continued)						
32											
33											
34				SM	SILTY SAND (SM) brown, medium dense, wet						
35											
36	8		22								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Unstabilized groundwater level measured at a depth of 12 feet.						
38											
39											
40					[1] Blow counts converted to equivalent SPT N-values.						
41					[2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
42											
43											
44											
45											
46											
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	**Log of Boring B-22**	PAGE 1 OF 2

Boring location: See Figure 2

Logged by M. Oman

Date started: 7/26/95 | Date finished: 7/26/95

Drilling method: Rotary wash

Hammer weight: 140 lbs. | Drop: 30 inches

Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION Ground Surface Elevation: 19.9 feet[2]	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1				ML	SANDY SILT (ML) brown, medium stiff, moist						
2	1	■	6								
3											
4											
5					Shrink-Swell Test, see Figure A-42						
6	2	■	5							25.3	96
7				CL	SANDY CLAY (CL) gray-brown, soft, wet						
8											
9											
10											
11	3	■	3			TxUU	750		550	29.4	93
12											
13											
14											
15											
16	4	■	3		Consolidation Test, see Figure A-40						
17											
18											
19											
20											
21	5	■	21		very stiff						
22											
23				SM	SILTY SAND (SM) brown, medium dense, wet						
24											
25											
26	6	■	11								
27											
28											
29											
30											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-22

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7		34	SM	SILTY SAND (SM) (continued)						
32											
33				SP-SM	SAND with SILT (SP - SM) brown, dense, wet						
34											
35											
36	8		45								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method. [1] Blow counts converted to equivalent SPT N-values. [2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
38											
39											
40											
41											
42											
43											
44											
45											
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60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-23	PAGE 1 OF 2

Boring location: See Figure 2		Logged by M. Oman
Date started: 7/27/95	Date finished: 7/27/95	
Drilling method: Rotary wash		
Hammer weight: 140 lbs.	Drop: 30 inches	
Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test		

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 20.0 feet[2])	STRENGTH: Type of Strength Test	STRENGTH: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1				ML	SANDY SILT (ML) brown, medium stiff, dry to moist						
2											
3	1	■	5		Direct Shear Test, see Figure A-37 c = 570 psf, Ø = 19.5°						
4				CL	CLAY (CL) brown, medium stiff, moist						
5											
6	-	●	7								
7											
8											
9											
10	2	■	40		hard						
11											
12											
13											
14											
15											
16	3	■	32		mottled orange and brown						
17											
18											
19											
20											
21	4	■	14		stiff						
22											
23											
24				ML	SANDY SILT (ML) mottled gray and brown, stiff, wet						
25											
26	5	■	10								
27											
28											
29				SM	SILTY SAND (SM) mottled gray and brown, dense, wet						
30											

Treadwell&Rollo	Project No. 1270.05	Figure A-18

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-23

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	6	X	31		SILTY SAND (SM) (continued)						
32											
33				SM							
34											
35											
36	7	X	42	SP-SM	SAND with SILT (SP - SM) gray and brown, dense, wet						
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method.						
38											
39					[1] Blow counts converted to equivalent SPT N-values.						
40											
41					[2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
42											
43											
44											
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58											
59											
60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-24	PAGE 1 OF 2

Boring location: See Figure 2

Logged by M. Oman

Date started: 7/28/95 | Date finished: 7/28/95

Drilling method: Rotary wash

Hammer weight: 140 lbs. | Drop: 30 inches

Sampler: 3.0-Inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 19.5 feet[2])	STRENGTH: Type of Strength Test	STRENGTH: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1–4	1	■	8	ML	SANDY SILT (ML) brown, medium stiff to stiff, moist						
5–6	2	■	4	CL	CLAY (CL) brown, soft, wet					31.5	91
10–11	3	■	32	CL	very stiff						
15–16	4	■	31	CL							
21	5	■	12	CL	stiff						
25–26	6	■	7	ML	SANDY SILT (ML) brown, medium stiff, wet						
29–30				SW	SAND with GRAVEL (SW) gray-brown, dense, wet						

Treadwell&Rollo | Project No. 1270.05 | Figure A-20

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-24

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7	X	39	SW	SAND with GRAVEL (SW) (continued)						
32											
33											
34											
35											
36	8	X	59								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method.						
38											
39					[1] Blow counts converted to equivalent SPT N-values.						
40											
41					[2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
42											
43											
44											
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60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	# Log of Boring B-25	PAGE 1 OF 2

Boring location: See Figure 2		Logged by M. Oman
Date started: 7/28/95	Date finished: 7/28/95	
Drilling method: Rotary wash		
Hammer weight: 140 lbs.	Drop: 30 inches	
Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test		

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 19.4 feet[2])	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1				ML	SANDY SILT (ML) brown, medium stiff to stiff, moist						
2											
3	1	■	6		Shrink-Swell Test, see Figure A-43					22.3	98
4											
5					Direct Shear Test, see Figure A-38						
6	2	■	3		c = 50 psf, Ø = 32.5° soft						
7				CL	CLAY (CL) brown, very stiff, moist						
8											
9											
10	3	■	23								
11											
12											
13											
14											
15											
16	4	■	20		mottled gray and brown						
17											
18											
19											
20											
21	5	■	10		stiff						
22											
23											
24				ML	SANDY SILT (ML) brown, stiff, wet						
25											
26	6	■	13								
27											
28											
29				SW	SAND with GRAVEL (SW) gray, dense, wet						
30											

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III** Milpitas, California

Log of Boring B-25

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7	X	40	SW	SAND with GRAVEL (SW) (continued)						
32											
33											
34											
35											
36	8	X	39								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method. [1] Blow counts converted to equivalent SPT N-values. [2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
38											
39											
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PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-26	PAGE 1 OF 2

Boring location: See Figure 2		Logged by M. Oman
Date started: 7/28/95	Date finished: 7/28/95	
Drilling method: Rotary wash		
Hammer weight: 140 lbs.	Drop: 30 inches	
Sampler: 3.0-Inch O.D. split-barrel; Standard Penetration Test		

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot [1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 20.0 feet [2])	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1–4	1	■	66 / 11"	ML	SANDY SILT (ML) brown, hard, moist						
5–14	2, 3	■	9, 10	ML-CL	SILT (ML - CL) brown, medium stiff to stiff, moist; Particle Size Analysis Test, see Figure A-31			93.6			
15–30	4, 5, 6	■	48, 22, 16	CL	SANDY CLAY (CL) gray and brown, hard, wet; very stiff; stiff to very stiff						

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-26

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	STRENGTH DATA: Fines %	STRENGTH DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7	■	22	CL	SANDY CLAY (CL) (continued)						
32											
33											
34											
35				SW	SAND with GRAVEL (SW) gray-brown, very dense, wet						
36	8	☒	60								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method. [1] Blow counts converted to equivalent SPT N-values. [2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
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40											
41											
42											
43											
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57											
58											
59											
60											

PROJECT:	OCTEL COMMUNICATIONS PHASES II AND III Milpitas, California	Log of Boring B-27	PAGE 1 OF 2

Boring location: See Figure 2

Logged by M. Oman

Date started: 7/27/95 | Date finished: 7/27/95

Drilling method: Rotary wash

Hammer weight: 140 lbs. | Drop: 30 inches

Sampler: 3.0-inch O.D. split-barrel; Standard Penetration Test

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION (Ground Surface Elevation: 19.6 feet[2])	STRENGTH DATA: Type of Strength Test	STRENGTH DATA: Test Surcharge Pressure Lbs/Sq Ft	Fines %	Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
1–4	1	■	8	ML	SANDY SILT (ML) brown, medium stiff, moist						
5–8	2	■	7	CL-ML	CLAY (CL-ML) brown, soft to medium stiff, wet					25.1	101
9–11	3	■	44	CL	SANDY CLAY (CL) brown-gray, hard, wet						
12–16	4	■	41	CL							
17–21	5	■	28	CL	very stiff						
22–26	6	■	16	CL	SANDY CLAY (CL) mottled orange, brown, and gray, very stiff, wet						
27–30				SM	SILTY SAND (SM) mottled orange-brown, medium dense, wet						

PROJECT: **OCTEL COMMUNICATIONS PHASES II AND III**
Milpitas, California

Log of Boring B-27

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot[1]	LITHOLOGY	MATERIAL DESCRIPTION	STRENGTH: Type of Strength Test	STRENGTH: Test Surcharge Pressure Lbs/Sq Ft	DATA: Fines %	DATA: Shear Strength Lbs/Sq Ft	MOISTURE-DENSITY DATA: Natural Moisture Content	MOISTURE-DENSITY DATA: Dry Density Lbs/Cu Ft
31	7		23	SM	SILTY SAND (SM) (continued)						
32											
33											
34											
35				SW	SAND (SW) gray, dense, wet						
36	8		46								
37					Boring terminated at a depth of 36.5 feet. Boring backfilled with cement/bentonite grout. Depth to groundwater obscurred by drilling method.						
38											
39					[1] Blow counts converted to equivalent SPT N-values.						
40											
41					[2] Elevations interpolated from topographic map, prepared by Aerometric Surveys, dated 16 May 1995.						
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Unified Soil Classification System

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	Gravels (More than half of coarse fraction > no. 4 sieve size)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (more than half of soil < no. 200 sieve size)	Silts and Clays LL = < 50	ML	Inorganic silts and very fine sands, rock flour, silty fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays LL = > 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of high plasticity, organic silty clays, organic silts
Highly Organic Soils		Pt	Peat and other highly organic soils

Grain Size Chart

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel	3" to No. 4	76.2 to 4.76
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
coarse	No. 4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.074
Silt and Clay	Below No. 200	Below 0.074

Sample Designation

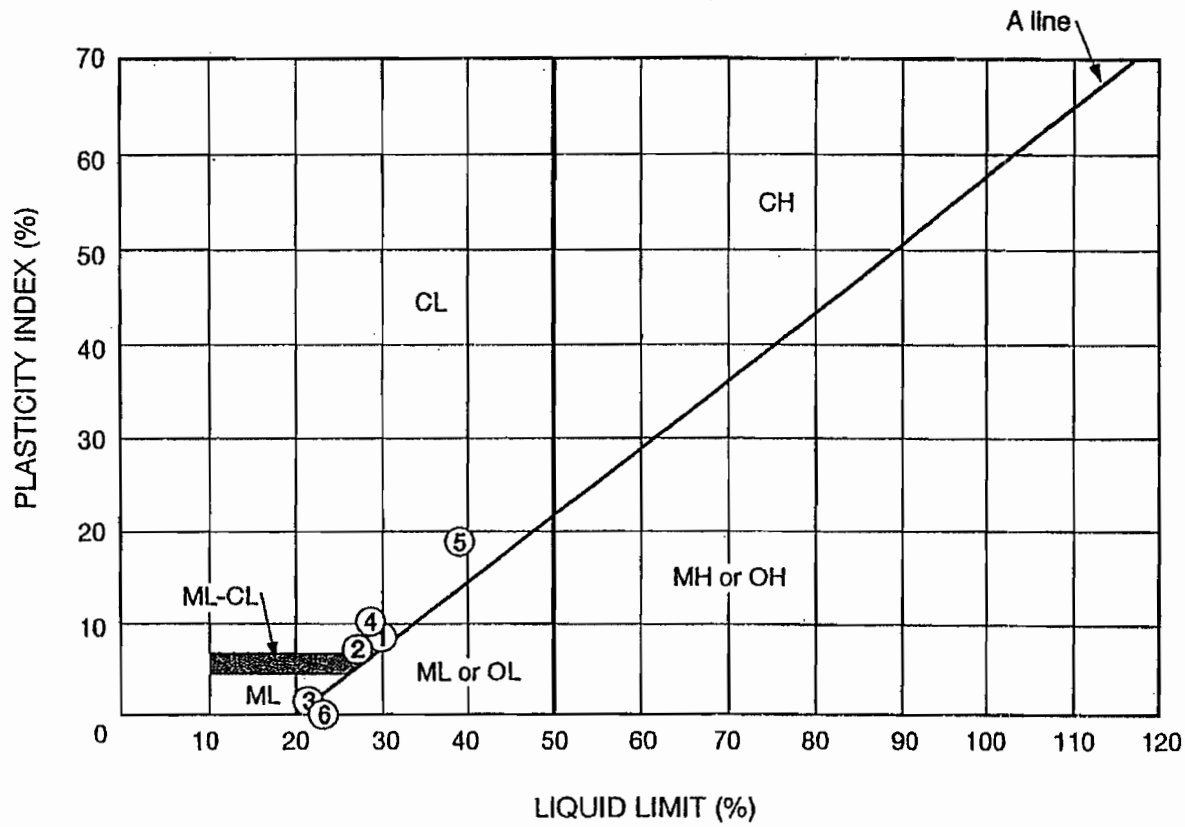
- Sample driven with Sprague & Henwood (3-inch outside diameter) sampler. Darkened area indicates sample obtained
- Classification sample taken with Standard Penetration Test (2-inch outside diameter) sampler
- Undisturbed sample taken with 3-inch outside diameter Shelby tube
- Attempted sample with no recovery

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

Treadwell&Rollo

CLASSIFICATION CHART

Project No. 1270.05 | Figure A-28



Symbol	Source	Classification	Natural M.C. (%)	Liquid Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
①	Boring B-4 @ 4.0 feet	CLAY (CL) brown and gray	—	30	8	91
②	Boring B-5 @ 1.0 feet	SILT with SAND (ML) brown	—	27	7	85
③	Boring B-5 @ 44.5 feet	SANDY SILT (ML) brown and gray	—	22	1	61
④	Boring B-6 @ 4.5 feet	SANDY CLAY (CL) brown	—	29	10	—
⑤	Boring B-6 @ 24.5 feet	SANDY CLAY (CL) brown and gray	—	39	19	—
⑥	Boring B-6 @ 29.5 feet	SANDY SILT (ML) brown and gray	—	23	0	54

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

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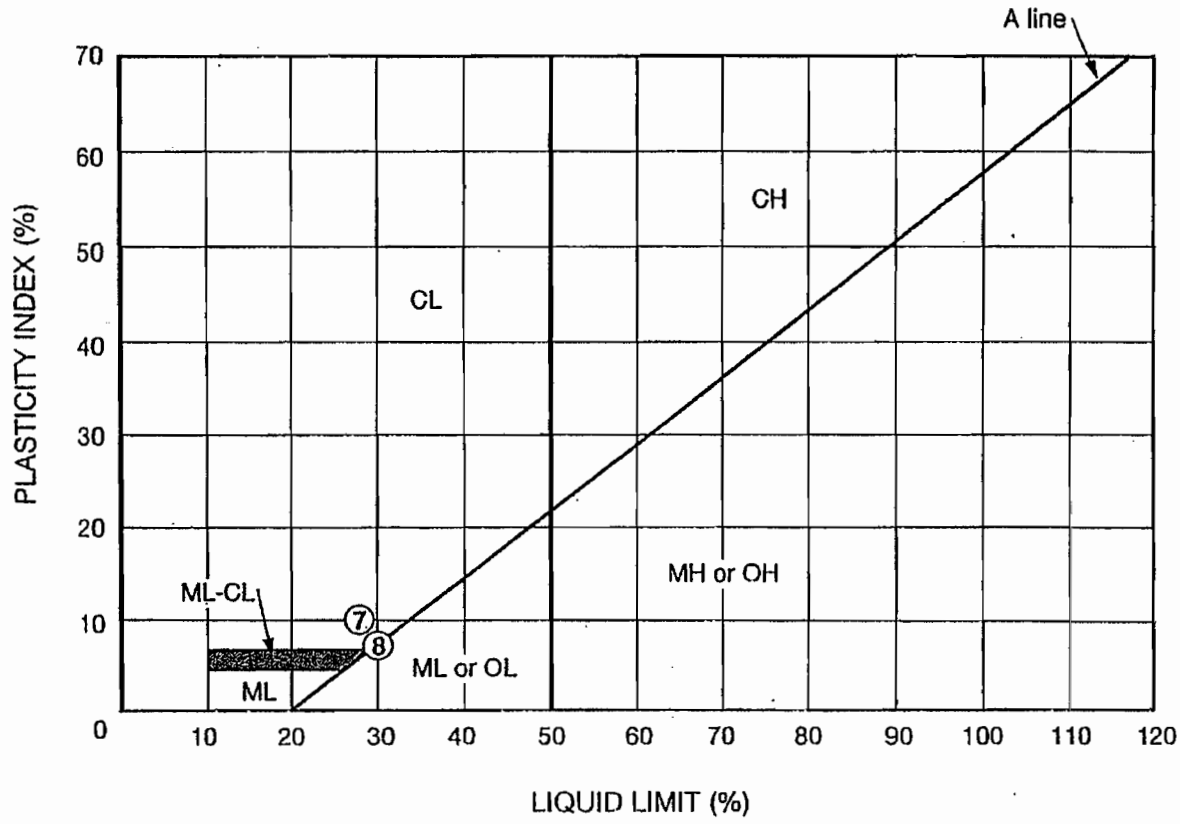
PLASTICITY CHART

Project No. 1270.05 | Figure A-29



Symbol	Source	Classification	Natural M.C. (%)	Liquid Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
7	Shallow bulk sample (composite)	CLAY (CL) brown	—	28	10	
8	Shallow bulk sample (composite with 4% lime)	SILT (ML - CL) brown	—	30	7	

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

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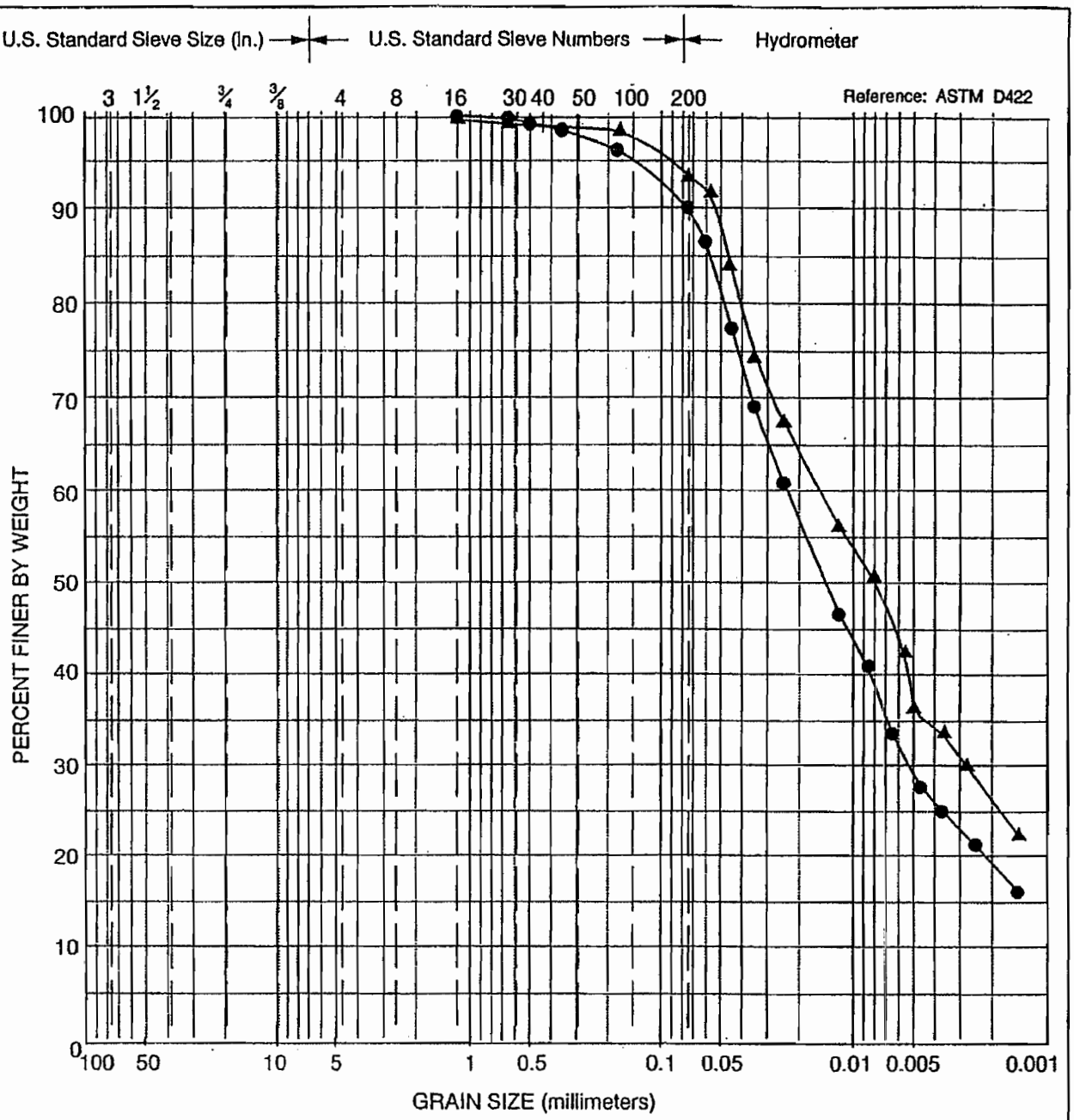
PLASTICITY CHART

Project No. 1270.05 | Figure A-30



Cobbles	Coarse	Fine	Coarse	Medium	Fine	Silt or Clay
	Gravel		Sand			

Symbol	Sample Source	Classification
●	Boring B-21 @ 1.5 feet	SILT (ML - CL), brown
▲	Boring B-26 @ 10.5 feet	SILT (ML - CL), brown

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

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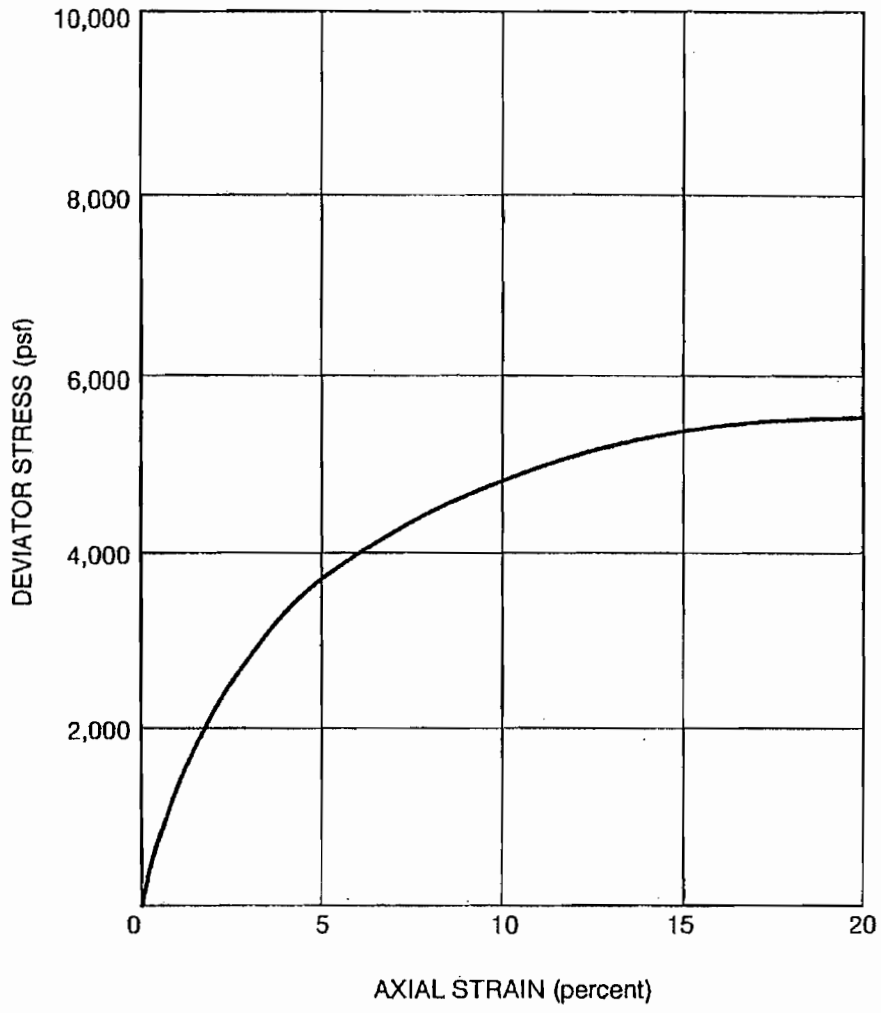
PARTICLE SIZE ANALYSIS

Project No. 1270.05 | Figure A-31



SPECIMEN TYPE Undisturbed		SHEAR STRENGTH	2,400 psf
DIAMETER (in) 2.41	HEIGHT (in) 6.00	STRAIN AT FAILURE	10 %
MOISTURE CONTENT	20 %	CONFINING PRESSURE	990 psf
DRY DENSITY	110 pcf	STRAIN RATE	1.0 %/min
CLASSIFICATION CLAY (CL), brown and gray		SOURCE B-4 @ 14.5 feet	

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

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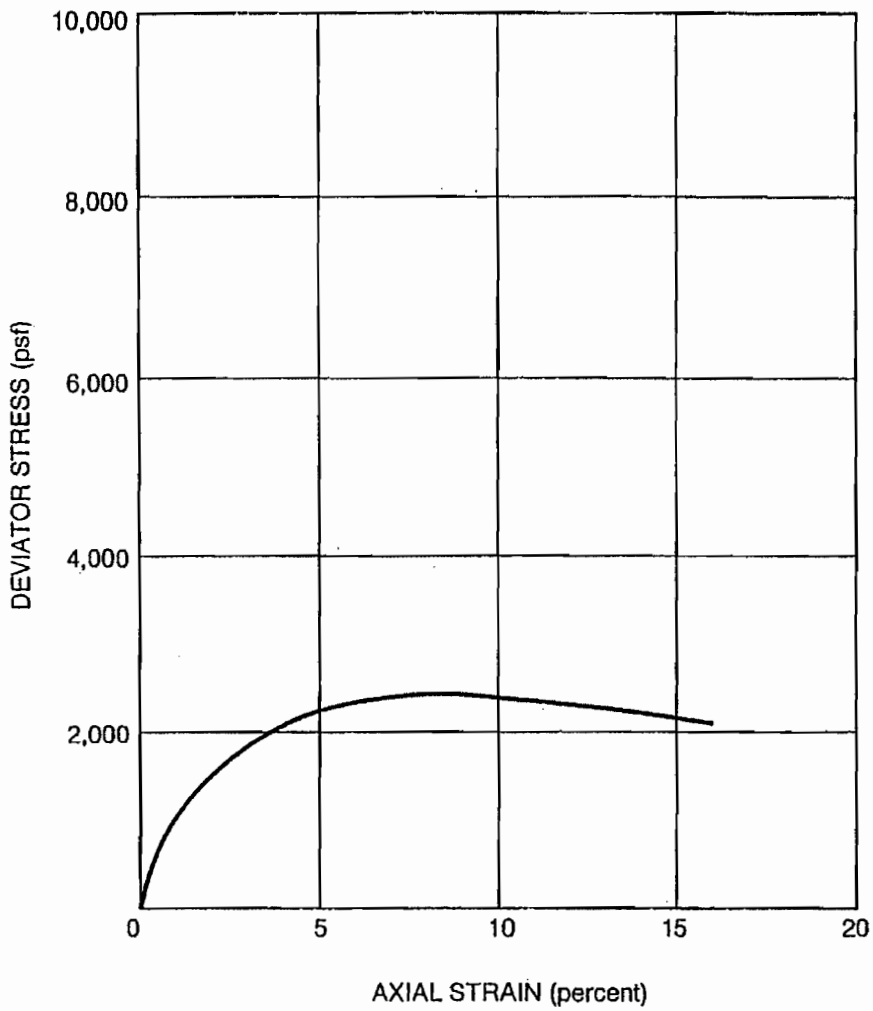
Project No. 1270.05 | Figure A-32



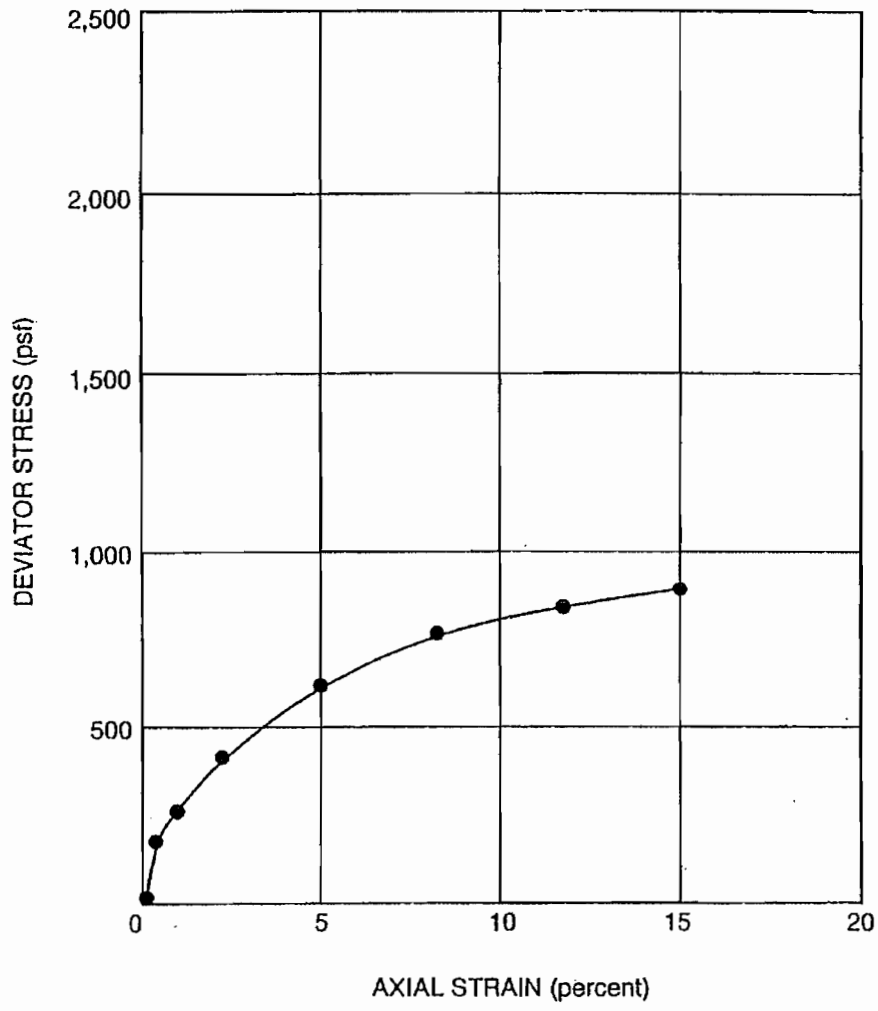
SPECIMEN TYPE	Undisturbed	SHEAR STRENGTH	1,200 psf
DIAMETER (in) 2.41	HEIGHT (in) 5.03	STRAIN AT FAILURE	8 %
MOISTURE CONTENT	27 %	CONFINING PRESSURE	990 psf
DRY DENSITY	99 pcf	STRAIN RATE	1.0 %/min
CLASSIFICATION SANDY CLAY (CL), brown and gray		SOURCE B-6 @ 16.0 feet	

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

Treadwell&Rollo

Project No. 1270.05 | Figure A-33



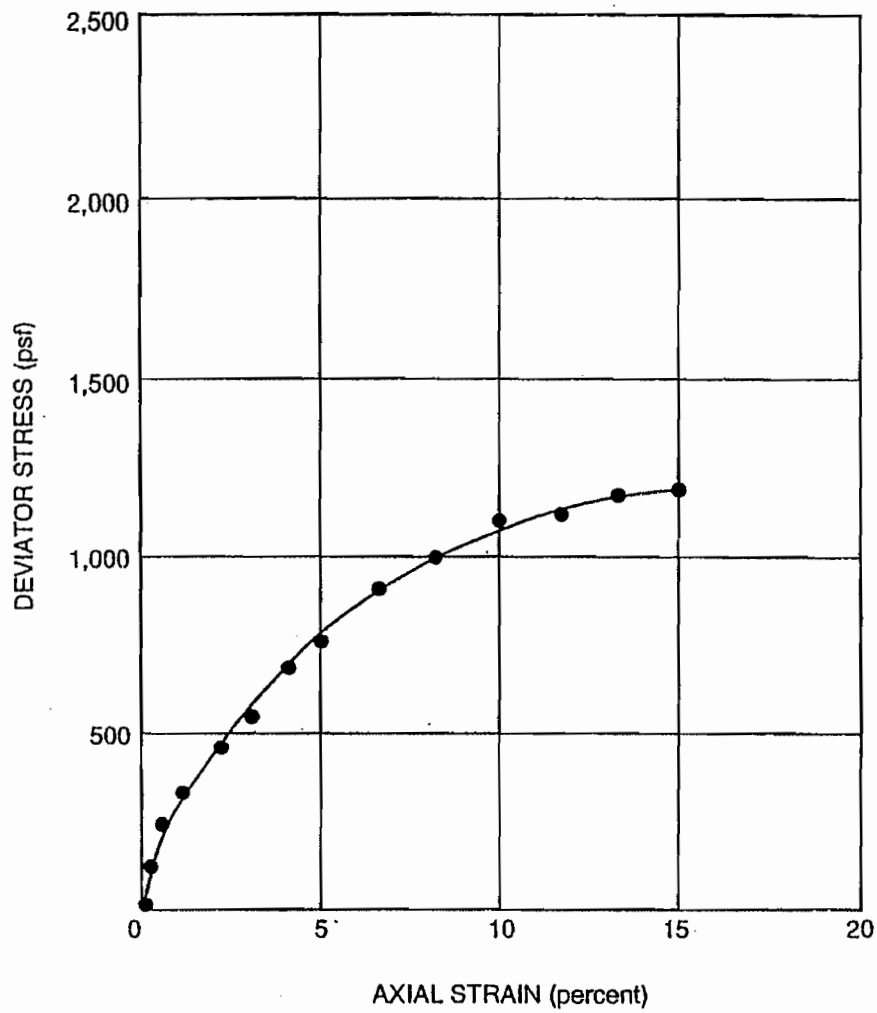
SPECIMEN TYPE	Undisturbed	SHEAR STRENGTH	420 psf
DIAMETER (in) 2.43	HEIGHT (in) 6.00	STRAIN AT FAILURE	10 %
MOISTURE CONTENT	28.7 %	CONFINING PRESSURE	750 psf
DRY DENSITY	85 pcf	STRAIN RATE	1.0 %/min
CLASSIFICATION CLAY (CL), brown		SOURCE B-20 @ 10.5 feet	

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

Treadwell&Rollo

Project No. 1270.05 | Figure A-34



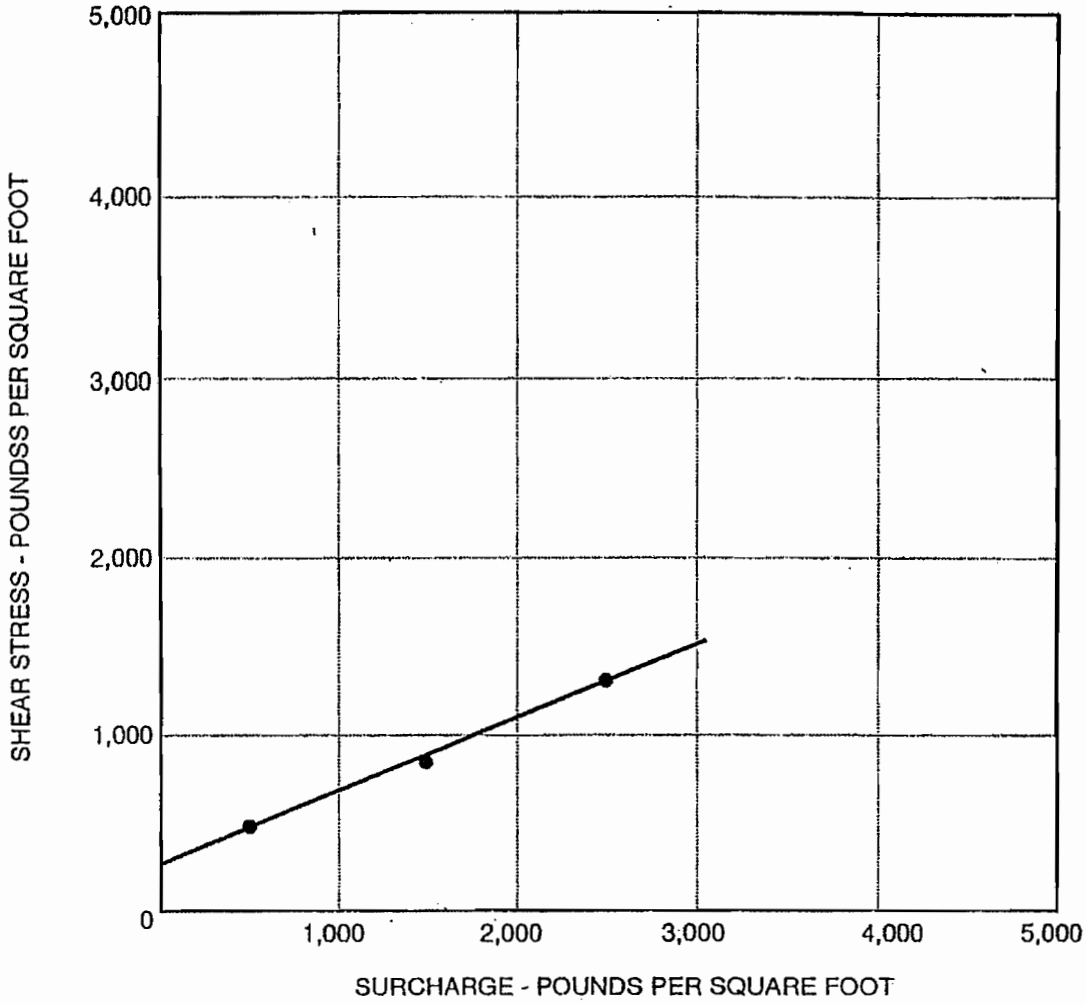
SPECIMEN TYPE Undisturbed		SHEAR STRENGTH	550 psf
DIAMETER (in) 2.42	HEIGHT (in) 6.00	STRAIN AT FAILURE	10 %
MOISTURE CONTENT	29.4 %	CONFINING PRESSURE	750 psf
DRY DENSITY	93 pcf	STRAIN RATE	1.0 %/min
CLASSIFICATION SANDY CLAY (CL), gray-brown		SOURCE B-22 @ 10.5 feet	

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

Treadwell&Rollo

Project No. 1270.05 | Figure A-35



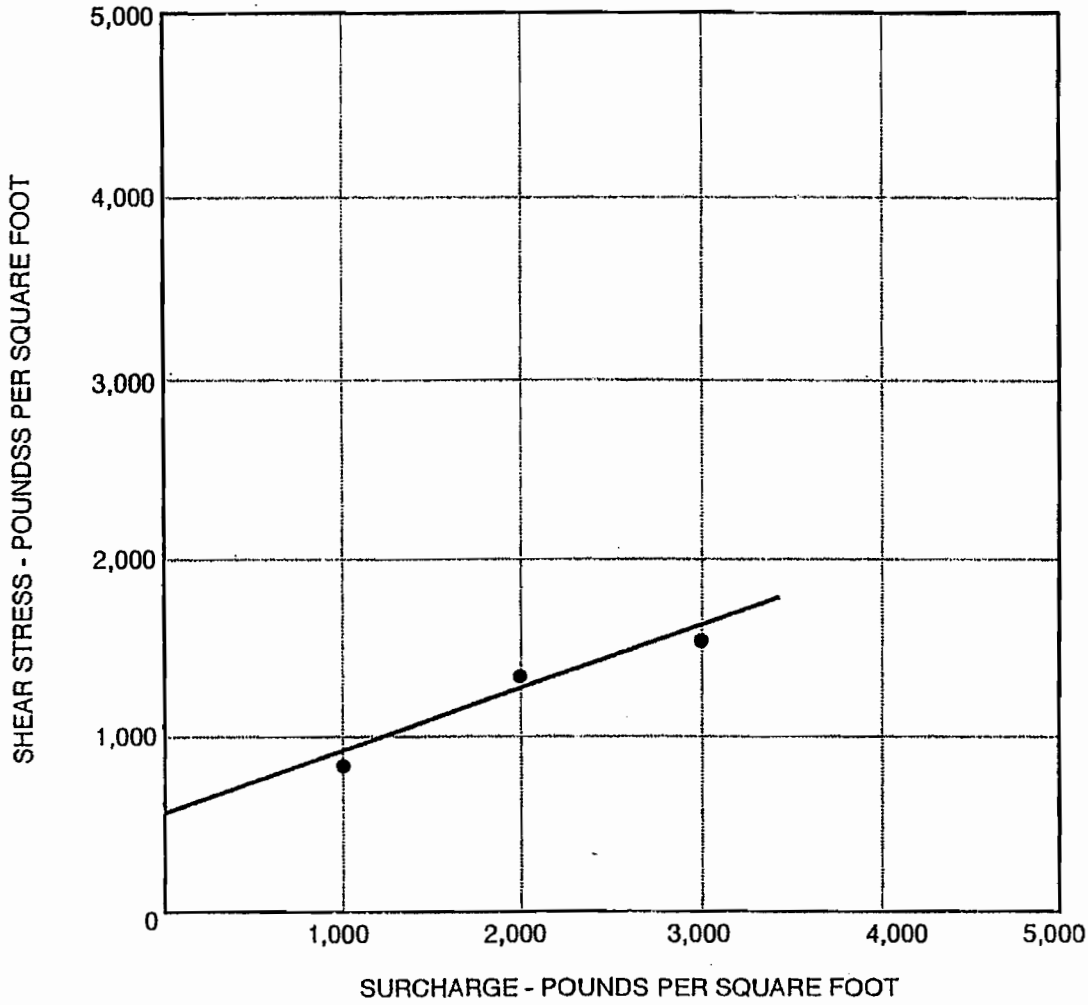
CLASSIFICATION SANDY SILT (ML), brown		SOURCE Boring B-20 @ 5.0 feet	
APPARENT COHESION (PSF) 250		ANGLE OF INTERNAL FRICTION 22.5°	
SPECIMEN NO.	A	B	C
SURCHARGE STRESS (PSF)	500	1,500	2,500
MAXIMUM SHEAR STRESS (PSF)	474	852	1,294
STRAIN RATE (%/MIN)	1.000	1.000	1.000

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

Treadwell&Rollo

DIRECT SHEAR TEST

Project No. 1270.05 | Figure A-36



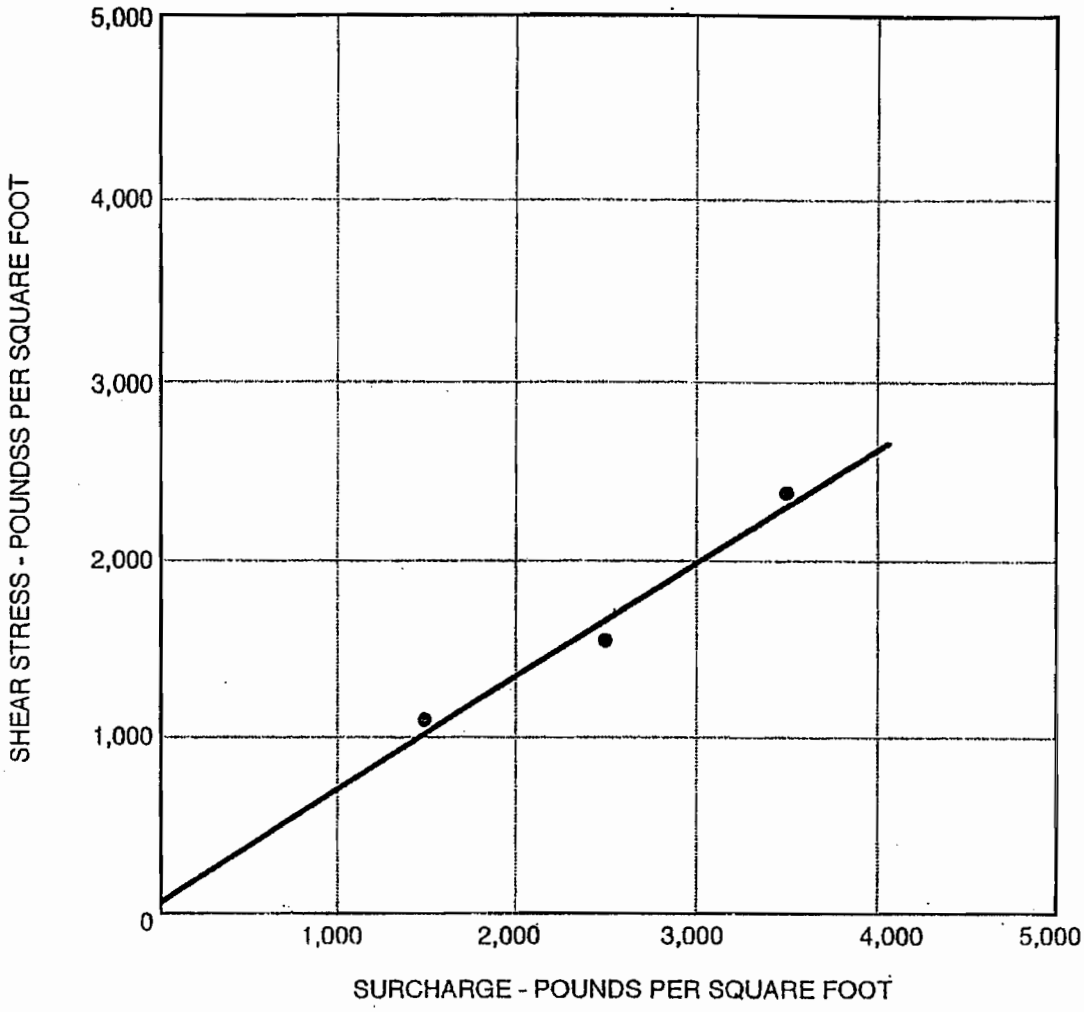
CLASSIFICATION SANDY SILT (ML), brown			SOURCE Boring B-23 @ 2.5 feet
APPARENT COHESION (PSF) 570		ANGLE OF INTERNAL FRICTION 19.5°	
SPECIMEN NO.	A	B	C
SURCHARGE STRESS (PSF)	1,000	2,000	3,000
MAXIMUM SHEAR STRESS (PSF)	821	1,326	1,515
STRAIN RATE (%/MIN)	1.000	1.000	1.000

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

Treadwell&Rollo

DIRECT SHEAR TEST

Project No. 1270.05 | Figure A-37



CLASSIFICATION SANDY SILT (ML), brown			SOURCE Boring B-25 @ 5.0 feet
APPARENT COHESION (PSF) 50		ANGLE OF INTERNAL FRICTION 32.5°	
SPECIMEN NO.	A	B	C
SURCHARGE STRESS (PSF)	1,500	2,500	3,500
MAXIMUM SHEAR STRESS (PSF)	1,105	1,547	2,389
STRAIN RATE (%/MIN)	1.000	1.000	1.000

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

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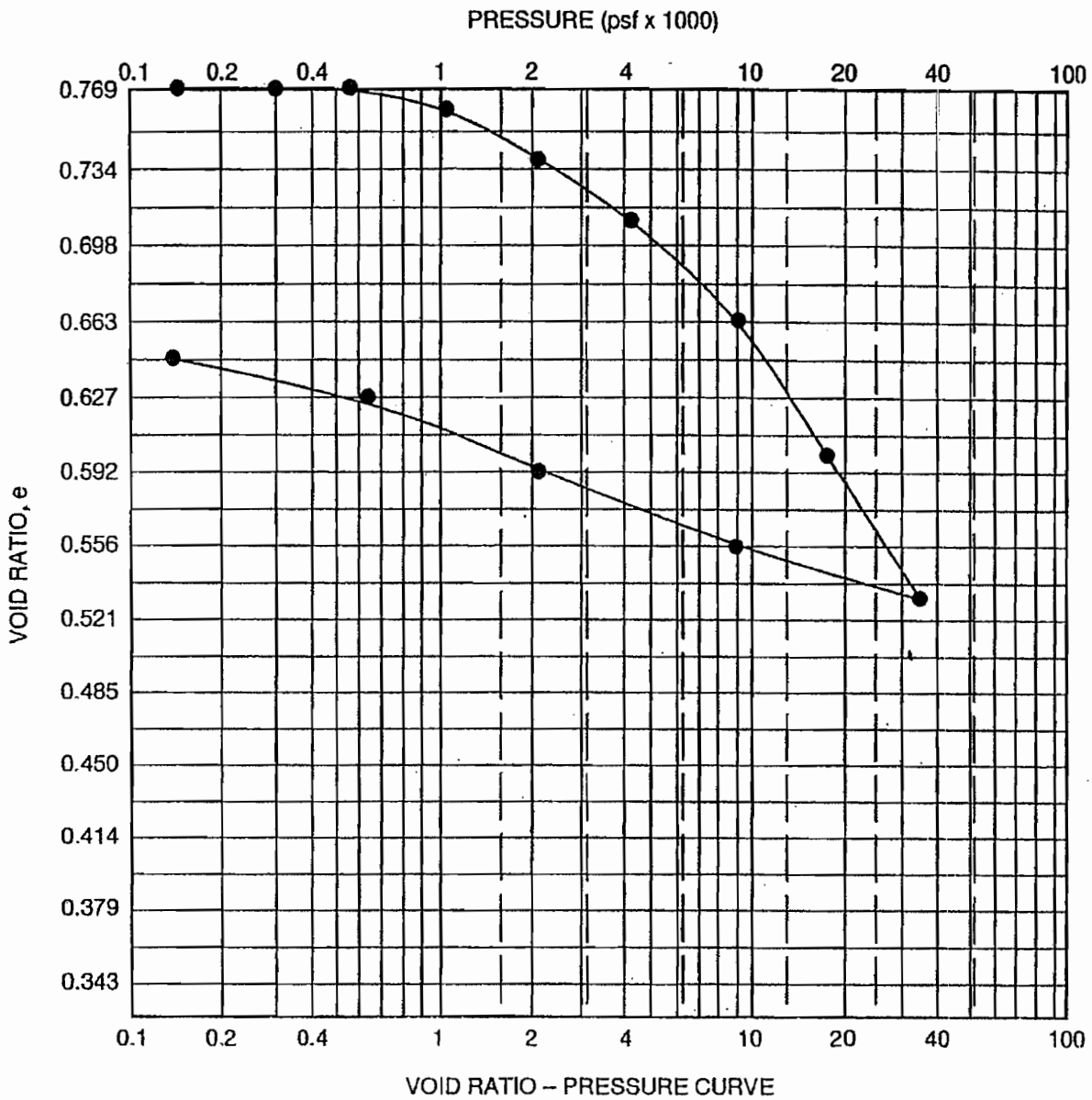
DIRECT SHEAR TEST

Project No. 1270.05 | Figure A-38



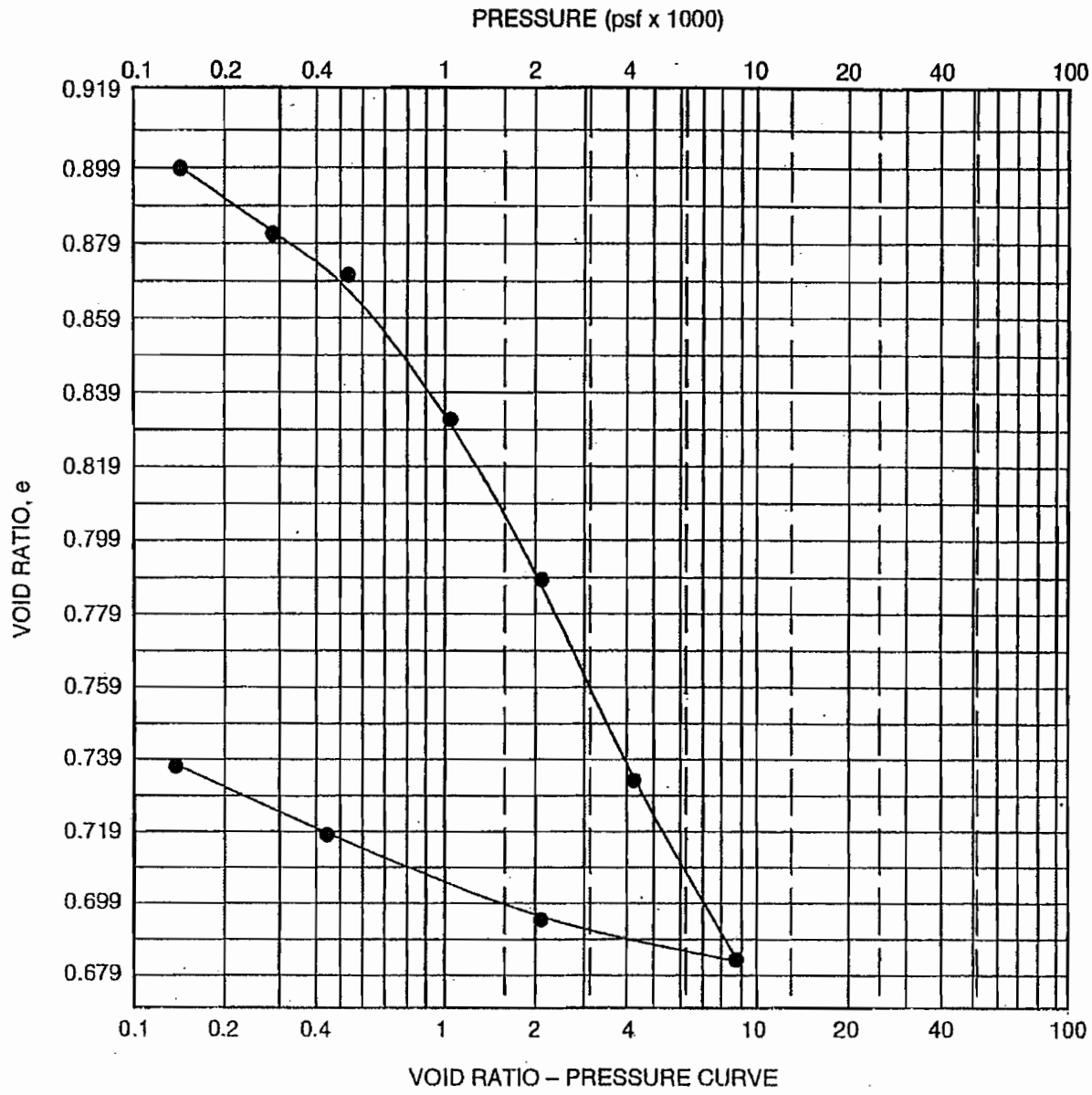
Type of specimen Undisturbed		Condition		Before test		After test	
Diameter (in) 2.37	Height (in) 1.0	Water Content	w_o	24.2 %	w_f	22.9 %	
Overburden Pressure, P_o	1,200 psf	Void Ratio	e_o	0.769	e_f	0.646	
Preconsol. Pressure, P_c	psf	Saturation	S_o	88 %	S_f	100 %	
Compression Ratio, C_{ec}	0.13	Dry Density	γ_d	99 pcf	γ_d	106 pcf	
LL —	PL —	PI —		G_s 2.8 (assumed)			
Classification CLAY (CL), brown		Source B-4 @ 9.5 feet					

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

Treadwell&Rollo

CONSOLIDATION TEST REPORT

Project No. 1270.05 | Figure A-39



VOID RATIO – PRESSURE CURVE

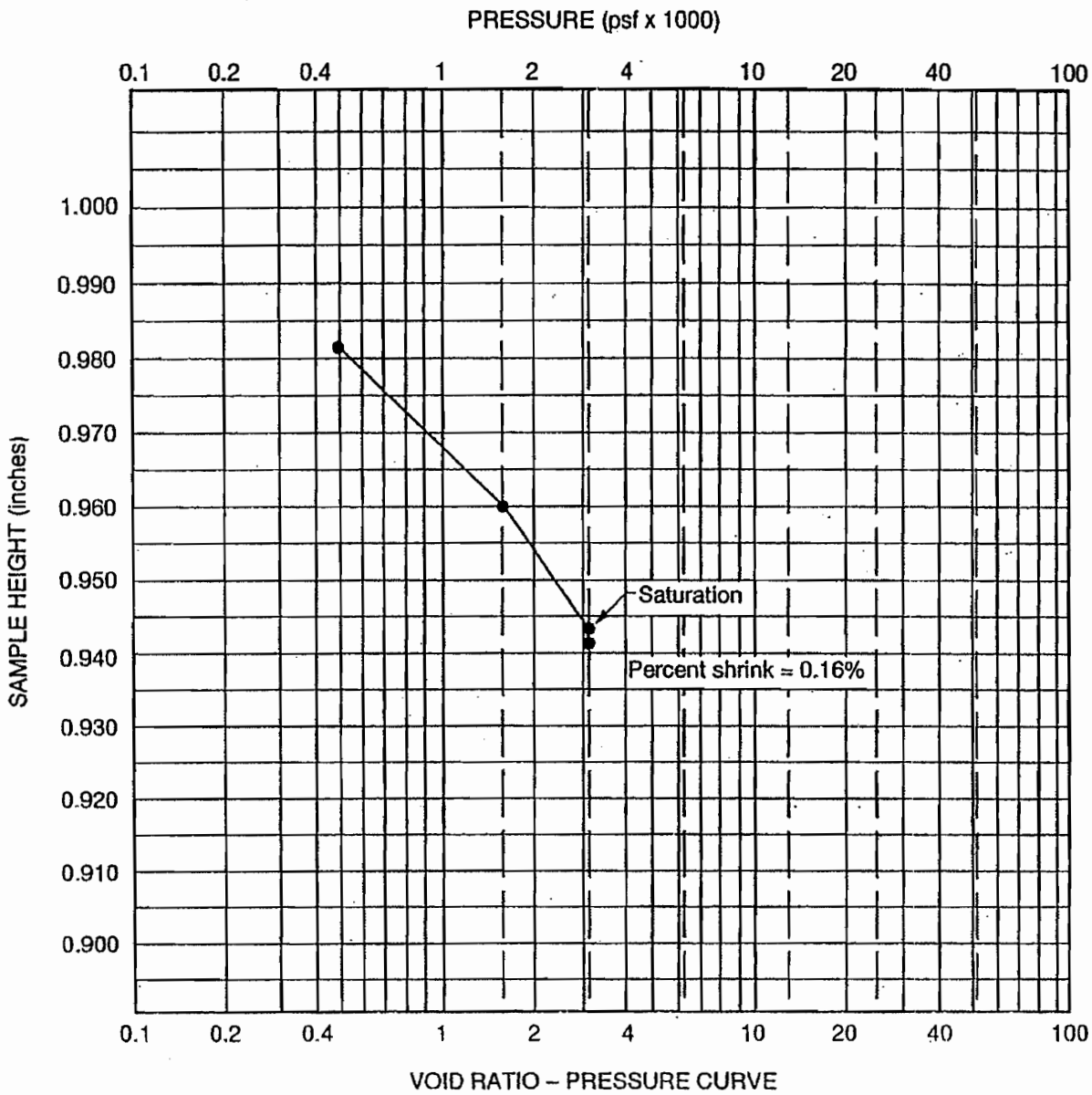
Type of specimen Undisturbed		Condition		Before test		After test	
Diameter (in) 2.37	Height (in) 1.0	Water Content	w_o	33.6 %	w_f	28.0 %	
Overburden Pressure, P_o	1,800 psf	Void Ratio	e_o	0.919	e_f	0.738	
Preconsol. Pressure, P_c	psf	Saturation	S_o	99 %	S_f	100 %	
Compression Ratio, C_{ec}	0.09	Dry Density	γ_d	102 pcf	γ_d	102 pcf	
LL —	PL —	PI —		G_s 2.7 (assumed)			
Classification SANDY CLAY (CL), gray-brown		Source B-22 @ 15.5 feet					

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

Treadwell&Rollo

CONSOLIDATION TEST REPORT

Project No. 1270.05 | Figure A-40



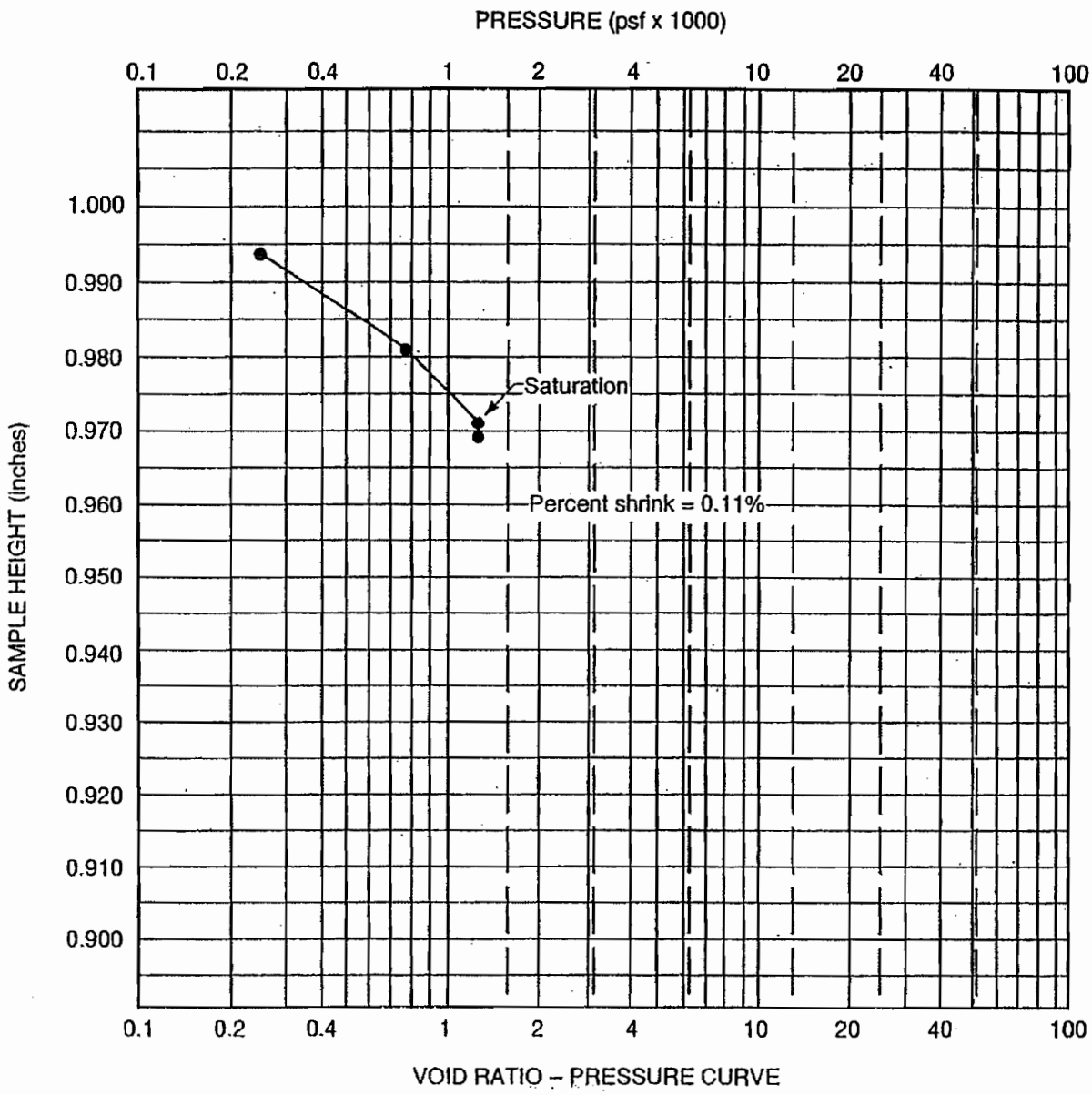
Type of specimen Undisturbed		Condition		Before test		After test	
Diameter (in) 2.42	Height (in) 1.0	Water Content	w_o	30.3 %	w_f	29.8 %	
Overburden Pressure, P_o	690 psf	Void Ratio	e_o	0.89	e_f	0.78	
Maximum Surcharge Pressure	2,500 psf	Saturation	S_o	92 %	S_f	%	
Compression Ratio, C_{ec}		Dry Density	γ_d	89 pcf	γ_d	pcf	
LL —	PL —	PI —		G_s 2.70 (asssumed)			
Classification SANDY SILT (ML), brown		Source B-18 @ 5.5 feet					

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

SHRINK-SWELL TEST REPORT

Treadwell&Rollo

Project No. 1270.05 | Figure A-41



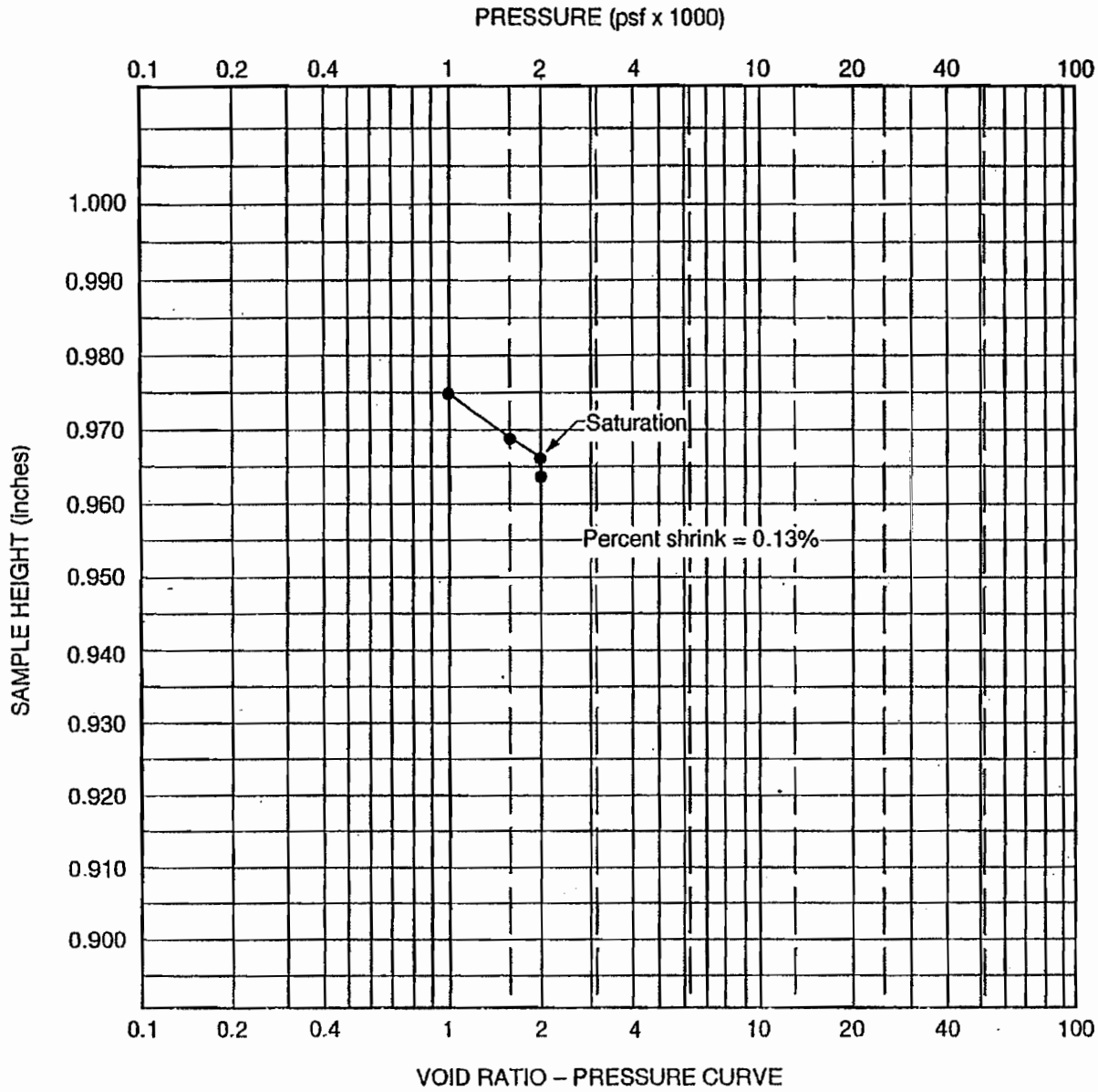
Type of specimen Undisturbed		Condition		Before test		After test
Diameter (in) 2.42	Height (in) 1.0	Water Content	w_o	25.3 %	w_f	26.4 %
Overburden Pressure, P_o	690 psf	Void Ratio	e_o	0.75	e_f	0.69
Maximum Surcharge Pressure	1,250 psf	Saturation	S_o	91 %	S_f	%
Compression Ratio, C_{ec}		Dry Density	γd	96 pcf	γd	pcf
LL —	PL —	PI —		G_s 2.70 (asssumed)		
Classification SANDY SILT (ML), brown			Source B-22 @ 5.5 feet			

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

SHRINK-SWELL TEST REPORT

Treadwell&Rollo

Project No. 1270.05 | Figure A-42



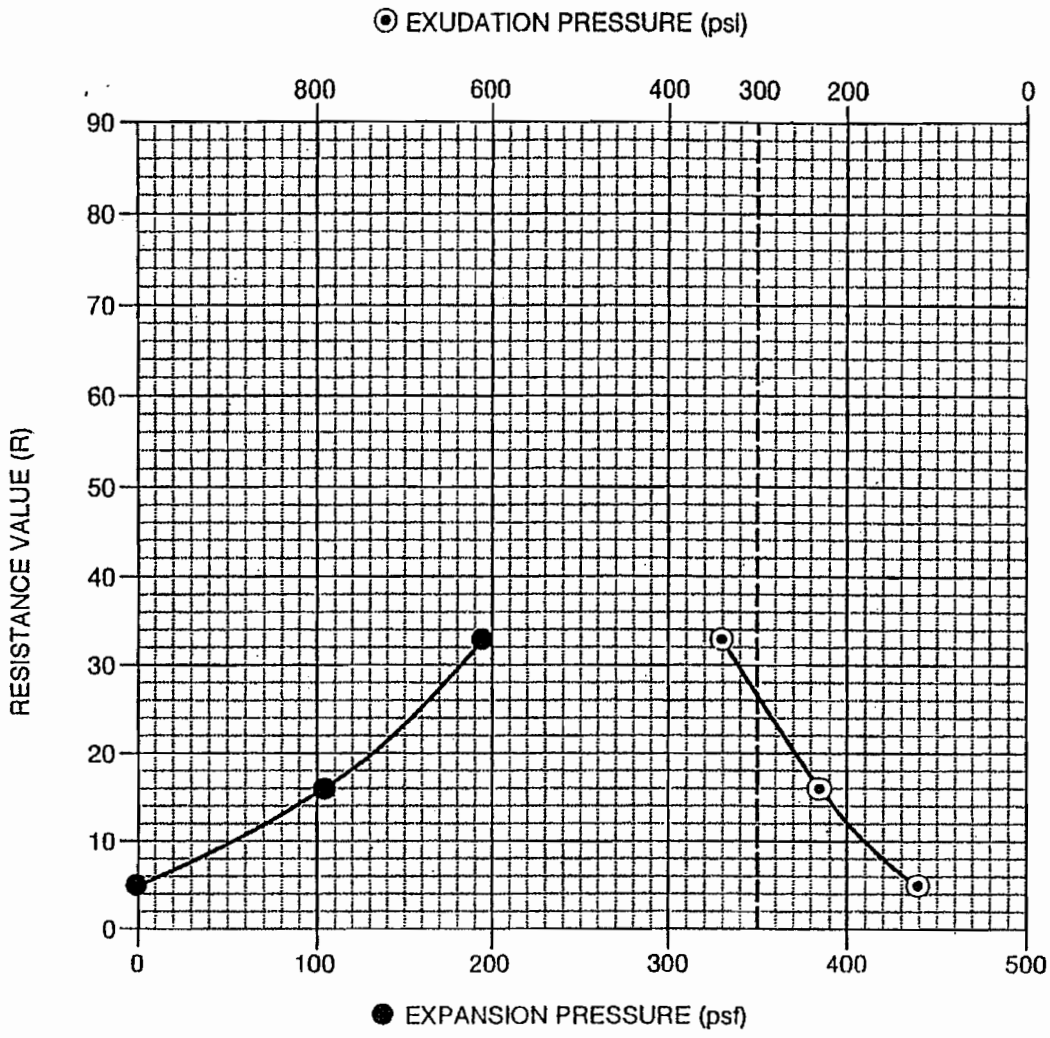
Type of specimen Undisturbed		Condition		Before test		After test	
Diameter (in) 2.41	Height (in) 1.0	Water Content	w_o	22.3 %	w_f	23.1 %	
Overburden Pressure, P_o	310 psf	Void Ratio	e_o	0.72	e_f	0.66	
Maximum Surcharge Pressure	2,000 psf	Saturation	S_o	84 %	S_f	%	
Compression Ratio, C_{ec}		Dry Density	γ_d	98 pcf	γ_d	pcf	
LL —	PL —	PI —		G_s 2.70 (asssumed)			
Classification SANDY SILT (ML), brown		Source B-25 @ 2.5 feet					

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

Treadwell&Rollo

SHRINK-SWELL TEST REPORT

Project No. 1270.05 | Figure A-43



Specimen No.	A	B	C	
Water Content (%)	18.4	20.8	16.9	
Dry Density (pcf)	109	104	111	
Exudation Pressure (psi)	235	139	343	
Expansion Pressure (psf)	107	0	193	
Resistance Value (R)	16	5	33	

Sample Source	Classification	Sand Equivalent	Expansion Pressure	R Value
Shallow bulk samples (composited)	SANDY SILT (ML - CL) brown		160	26

OCTEL COMMUNICATIONS
PHASES II AND III
Milpitas, California

Treadwell&Rollo

RESISTANCE VALUE TEST DATA

Project No. 1270.05 | Figure A-44

Treadwell&Rollo

DISTRIBUTION

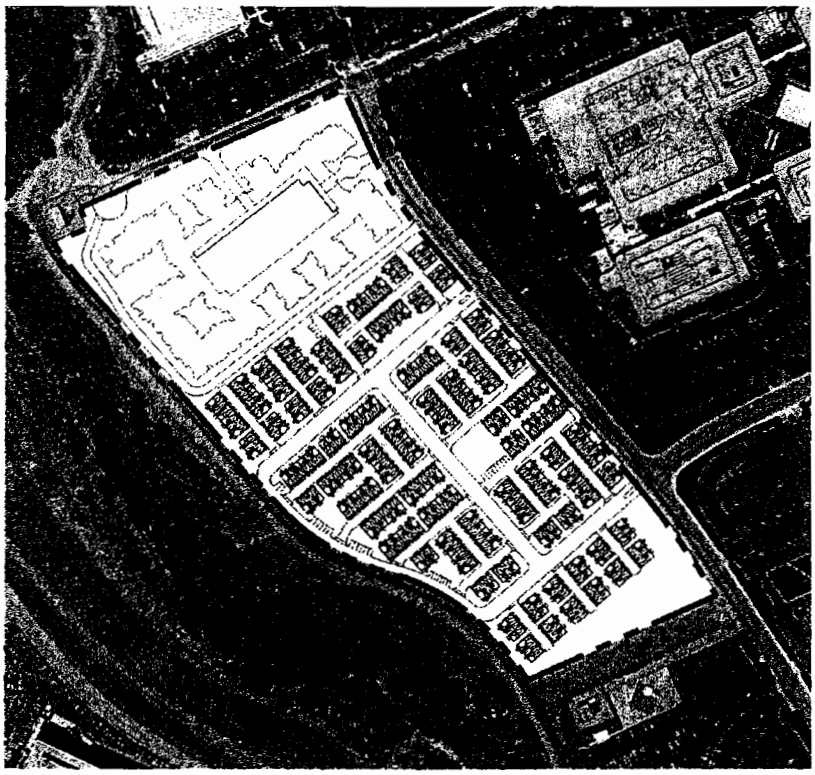
6 copies:	Mr. Shon E. Finch Fairfield Residential, LLC 5510 Morehouse Drive, Suite 200 San Diego, California 92121

Appendix B

STORMWATER CONTROL REPORT

MURPHY RANCH

FAIRFIELD RESIDENTIAL, LLC



For
Stormwater C.3 Guideline Compliance Submittal
With
Tentative Map

March 10, 2006

Prepared By:

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS

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SECTION 1

C.3 STORMWATER CONTROL PLAN
FOR
FAIRFIELD RESIDENTIAL
MURPHY RANCH

March 10, 2006

Introduction

This Stormwater Control Plan for Murphy Ranch improvements is submitted to the Department of Public Works of the City of Milpitas (City) as a recommendation on the use of permanent Best Management Practices (BMPs) on the site. Probable design storm flows and permanent BMP selection are presented in this report. BMP technical requirements are presented in the Storm water C.3 Guidebook adopted by the City of Milpitas on February 23, 2005.

The project site for the Fairfield Residential – Murphy Ranch Project is located at the southern intersection of Technology Drive and Murphy Ranch Road in the City of Milpitas, as shown in Figure 1. The improvements to the Site will include one multi-family residential apartment building with a total of 374 units that includes a multi-story parking structure, 65 multi-family residential townhome buildings, additional on-site parking, landscaping areas and a public park. The total project area is approximately 21.73 acres. Figure 2 is an aerial photo showing the project site.

The entire site is currently vacant, undeveloped land with no impervious surfaces.

Upon construction of the proposed improvements, approximately 15.45 acres (71%) of the site will be covered by impervious surface and about 6.28 acres (29%) will be covered by landscaped or pervious surfaces. Landscape areas include lawn, shrubs, trees and swales. Walkways and patios included in any landscape areas for the purpose of determining drainage sub-areas are accounted in the runoff calculations for BMP treatment by weighting the corresponding runoff coefficients.

On-site Conditions

Currently stormwater runoff on the site flows overland towards Murphy Ranch Road to five existing storm drain inlets located along the eastern boundary of the project site. The existing drainage areas with treatment flows are shown in Figure 3 and the existing storm drain facilities are identified in Figure 4.

For the purpose of this Stormwater Control Plan, the site has been divided into eight principle drainage areas.

- Drainage area A, with approximately 6.08 acres, will discharge into an existing storm drain inlet located along Murphy Ranch Road.
- Drainage area B, with approximately 4.21 acres, will discharge into the existing City storm drain system within Murphy Ranch Road just north of drainage area A.
- Drainage area C, with approximately 3.86 acres, will discharge into the existing City storm drain inlet within Murphy Ranch Road.
- Drainage area D, with approximately 2.82 acres, will discharge into the existing City storm drain system within Murphy Ranch Road.
- Drainage area E, with approximately 1.35 acres, will discharge into an existing City storm drain inlet within Murphy Ranch Road.
- Drainage area F, with approximately 1.44 acres, will discharge into the existing City storm drain system within Technology Drive.
- Drainage area G, with approximately 1.95 acres, will discharge into the existing City storm drain system within Technology Drive.
- Drainage area H, with approximately 0.02 acres, will discharge into an existing City storm drain inlet within Murphy Ranch Road.

Each drainage area is further divided by surface type. Pervious and impervious surface areas are shown in Figures 3 and 5, and the corresponding land type areas are presented in Tables 1 and 2.

Proposed on-site storm drainage system improvements for the site will tie into portions of the existing storm drain system as shown in Figure 6.

Additional On-site Conditions:

- Soil Type: From the on-site geotechnical investigation, the subsurface soils conditions indicate the site is generally underlain by 8 to 10 feet of soft to medium stiff silt and low-plasticity clay with varying sand content.

- Groundwater Depth: From the on-site geotechnical investigation, approximate groundwater depth ranged between 10-1/2 to 14-1/2 feet deep. Groundwater levels are anticipated to fluctuate depending on seasonal variations, variations in the water level in Coyote Creek, and the amount of groundwater being pumped in the general vicinity.

Hydrology

Runoff coefficients for existing and proposed on-site conditions are based on values given in the City of Milpitas Land Development Engineering Manual and are presented in Tables 1 and 2.

A rainfall intensity value of *0.2 inches per hour* is used for treatment flows based on the City of Milpitas Stormwater C.3 Guidebook. The weighted runoff coefficient was based on the percentage imperviousness of each tributary drainage area. Based on the existing on-site conditions, runoff during a treatment flow event would be 0.87 cfs. Treatment flow for the proposed on-site improvements will be 3.03 cfs. A net increase of 2.16 cfs can be expected in the rate of runoff due to a treatment flow event for the proposed on-site improvements. The Rational Method is used to calculate minimum treatment flow runoff and is presented in Tables 1 and 2 for the existing and proposed on-site conditions.

In addition, Table 3 identifies the 10-year peak runoff rates for each drainage area within the proposed site. The weighted runoff coefficients and City rainfall intensity charts were used to calculate each drainage areas peak runoff rate.

Recommended Permanent BMPs

Permanent Best Management Practices (BMPs) are required for the site. Pollution sources for the site include grease, oil, litter and waste. Table 5 identifies potential pollutant source areas and the associated source control BMP. Site constraints limit the type and number of BMPs that can be included as part of the site improvements. Site constraints include limited landscape areas, grading constraints, large building foundations, walkways, patios, parking lot layout, property line boundaries and existing fronting roadways.

The recommended BMP alternatives for the project site are shown in Figure 7. These BMPs would provide a level of treatment that would meet the C.3 requirements for the additional runoff generated by the project improvements:

1. Selected landscaping areas could be used as landscape infiltration BMPs. Route pathway and patio runoff to landscape infiltration BMP, with excess flows conveyed to the on-site storm drain system.

2. A landscape swale along the north and west boundaries of the site parallel to the fire lane will be incorporated as a treatment BMP. Runoff from the drive aisle will sheet flow into the landscape swale and flows will be conveyed to a final area drain connected to the on-site storm drain system

3. Installation of a structural stormwater treatment units prior to the point of connections to public storm drain systems along Murphy Ranch Road (See Section 4 for typical structural BMP details).

4. Installation of oil-grease separators in parking structure to treat runoff that could be mixed with vehicle hydrocarbons.

BMP sizing for the landscape swale is shown in Table 3.

For proposed Drainage Area 'F':

- The minimum surface area required to treat the driveway runoff is 2,130 sf
- The proposed landscape swale has a surface area of 3,960 sf

For proposed Drainage Area 'G':

- The minimum surface area required to treat the driveway runoff is 1,300 sf
- The proposed landscape swale has a surface area of 4,360 sf

For proposed Drainage Area 'H':

- The minimum surface area required to treat the driveway runoff is 70 sf
- The proposed landscape swale has a surface area of 540 sf

Structural BMP sizing was calculated using the *flow-based* methodology described in the City of Milpitas Stormwater C.3 Guidebook.

For proposed Drainage Area 'A':

- The minimum required flow to be treated is 0.81 cfs (as shown in Table 2)
- The proposed Stormwater Treatment Unit has a treatment capacity of 1.10 cfs (as shown in Section 4)

For proposed Drainage Area 'B':

- The minimum required flow to be treated is 0.65 cfs (as shown in Table 2)
- The proposed Stormwater Treatment Unit has a treatment capacity of 0.70 cfs (as shown in Section 4)

For proposed Drainage Area 'C':

- The total minimum required flow to be treated is 0.57 cfs (as shown in Table 2)
- The proposed Stormwater Treatment Unit has a treatment capacity of 0.70 cfs (as shown in Section 4)

For proposed Drainage Area 'D':

- The total minimum required flow to be treated is 0.38 cfs (as shown in Table 2)
- The proposed Stormwater Treatment Unit has a treatment capacity of 0.70 cfs (as shown in Section 4)

For proposed Drainage Area 'E':

- The total minimum required flow to be treated is 0.22 cfs (as shown in Table 2)
- The proposed Stormwater Treatment Unit has a treatment capacity of 0.70 cfs (as shown in Section 4)

It is recommended that the structural BMP's be installed at the downstream collection point of each drainage area in order to provide the most effective method of preventing pollutants from entering the public storm drain system and meet the City C.3 stormwater requirements.

Maintenance procedures for the recommended BMPs are outlined in Section 4, BMP Maintenance Recommendations.

SECTION 2

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Date: 3/10/2006
Job No.: 1299-00

TABLE 1. EXISTING ON-SITE FLOWS
MURPHY RANCH

Drainage Area ID	Land Type	Area (acres)	C	Flow (cfs)
A - Pervious Areas	Natural Earth	3.0	0.2	0.12
Total		3.0	0.2	0.12
B - Pervious Areas	Natural Earth	2.3	0.2	0.09
Total		2.3	0.2	0.09
C - Pervious Areas	Natural Earth	13.1	0.2	0.52
Total		13.1	0.2	0.52
D - Pervious Areas	Natural Earth	3.3	0.2	0.13
Total		3.3	0.2	0.13
TOTAL		21.7	0.20	0.87

Rainfall Intensity (in/hr) = 0.2
Impervious Runoff Coefficient = 0.9
Pervioius Runoff Coefficient = 0.2

Note: Total Runoff Coefficient based on weighted average of total on-site project drainage area.

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Date: 3/10/2006
Job No.: 1299-00

TABLE 2. PROPOSED FLOWS
(MINIMUM TREATED FLOWS PER CITY OF MILPITAS STORMWATER C.3 GUIDEBOOK)
MURPHY RANCH

Drainage Area ID	Land Type	Area (acres)	C	Flow (cfs)
A - Impervious Areas	Roof	2.00	0.9	0.36
A - Impervious Areas	Parking/Driveway	1.64	0.9	0.30
A - Impervious Areas	Walks	0.43	0.9	0.08
A - Pervious Areas	Landscaping	2.01	0.2	0.08
Total		6.08	0.7	0.81
B - Impervious Areas	Roof	1.77	0.9	0.32
B - Impervious Areas	Parking/Driveway	1.26	0.9	0.23
B - Impervious Areas	Walks	0.40	0.9	0.07
B - Pervious Areas	Landscaping	0.78	0.2	0.03
Total		4.21	0.8	0.65
C - Impervious Areas	Roof	1.53	0.9	0.28
C - Impervious Areas	Parking/Driveway	1.12	0.9	0.20
C - Impervious Areas	Walks	0.34	0.9	0.06
C - Pervious Areas	Landscaping	0.87	0.2	0.03
Total		3.86	0.7	0.57
D - Impervious Areas	Roof	1.43	0.9	0.26
D - Impervious Areas	Parking/Driveway	0.39	0.9	0.07
D - Impervious Areas	Walks	0.06	0.9	0.01
D - Pervious Areas	Landscaping	0.94	0.2	0.04
Total		2.82	0.7	0.38
E - Impervious Areas	Roof	1.10	0.9	0.20
E - Impervious Areas	Parking/Driveway	0.08	0.9	0.01
E - Impervious Areas	Walks	0.03	0.9	0.01
E - Pervious Areas	Landscaping	0.14	0.2	0.01
Total		1.35	0.8	0.22
F - Impervious Areas	Roof	0.52	0.9	0.09
F - Impervious Areas	Parking/Driveway	0.23	0.9	0.04
F - Impervious Areas	Walks	0.18	0.9	0.03
F - Pervious Areas	Landscaping	0.51	0.2	0.02
Total		1.44	0.7	0.19
G - Impervious Areas	Roof	0.67	0.9	0.12
G - Impervious Areas	Parking/Driveway	0.14	0.9	0.03
G - Impervious Areas	Walks	0.11	0.9	0.02
G - Pervious Areas	Landscaping	1.03	0.2	0.04
Total		1.95	0.5	0.21
H - Impervious Areas	Roof	0.00	0.9	0.00
H - Impervious Areas	Parking/Driveway	0.01	0.9	0.002
H - Impervious Areas	Walks	0.01	0.9	0.002
H - Pervious Areas	Landscaping	0.00	0.2	0.00
Total		0.02	0.9	0.00
TOTAL		21.73	0.70	3.03

Rainfall Intensity (in/hr) = 0.2
Impervious Runoff Coefficient = 0.9
Pervioius Runoff Coefficient = 0.2

Note: Total Runoff Coefficient based on weighted average of total on-site project drainage area.

P:\1235-00\Stormwater.xls\2-PR FLOW

Date: 3/10/2006
Job No.: 1299-00

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TABLE 3. PEAK RUNOFF CALCULATION WORKSHEET
(PROPOSED ON-SITE DRAINAGE AREAS)
MURPHY RANCH

Drainage Area ID	Land Type Description	Area (Acres)			Percentage Imprevious (%)	Weighted Runoff Coeff. 'C'	Time of Concentration Tc (min)	Rainfall Intensity 10-Year (in/hr)	Peak Runoff 10-Year (cfs)	Permanent BMP Measure
		Impervious	Pervious	Total						
Drainage Area 'A'	South portion of site draining to Murphy Ranch Rd	4.07	2.01	6.08	67%	0.70	13	1.70	7.24	Structural BMP (Stormwater Treatment Unit)
Drainage Area 'B'	Middle portion of site draining to Murphy Ranch Rd	3.43	0.78	4.21	81%	0.80	12	1.77	5.96	Structural BMP (Stormwater Treatment Unit)
Drainage Area 'C'	Middle portion of site draining to Murphy Ranch Rd	2.99	0.87	3.86	77%	0.70	12	1.77	4.78	Structural BMP (Stormwater Treatment Unit)
Drainage Area 'D'	Middle portion of site draining to Murphy Ranch Rd	1.88	0.94	2.82	67%	0.70	12	1.77	3.49	Structural BMP (Stormwater Treatment Unit) Bio-Filtration Swale
Drainage Area 'E'	NE portion of site draining to Murphy Ranch Rd	1.21	0.14	1.35	90%	0.80	9	2.07	2.24	Structural BMP (Stormwater Treatment Unit)
Drainage Area 'F'	NW portion of site draining to Technology Drive	0.93	0.51	1.44	65%	0.70	8	2.21	2.23	Bio-Filtration Swale
Drainage Area 'G'	North portion of site draining to Technology Drive	0.92	1.03	1.95	47%	0.50	7	2.37	2.31	Bio-Filtration Swale
Drainage Area 'H'	North portion of site draining to Murphy Ranch Rd	0.02	0.00	0.02	100%	0.90	5	2.84	0.05	Bio-Filtration Swale

Structural BMP Notes:

1. *All Stormwater Treatment Units will have the appropriate capacity to meet the minimum required treat flows from each Drainage Area (See Table 2).*
2. *All Stormwater Treatment Units will be installed at downstream point of each Drainage Area prior to discharging into the public storm drain system (See Figure 7).*

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS

Date: 3/10/2006
Job No.: 1299-00

TABLE 4. BMP SIZING - LANDSCAPE SWALE
MURPHY RANCH

Drainage Area ID	Land Type	Area (sf)	BMP Type	Sizing Factor	Minimum Surface Area Required (sf)	Surface Area as Designed (sf)
D	Parking/Driveway	16,990	Landscape Swale	0.2125	3,610	1,290
	(Pavement)					
F	Parking/Driveway	10,020	Landscape Swale	0.2125	2,130	3,960
	(Pavement)					
G	Parking/Driveway	6,100	Landscape Swale	0.2125	1,300	4,360
	(Pavement)					
H	Parking/Driveway	340	Landscape Swale	0.2125	70	540
	(Pavement)					

Sizing Factor:
Landscape Swale: 0.2125 *

* *The equivalent sizing factor of 0.17 assumes that the treatment BMP can infiltrate runoff from 100% impervious area at 0.17 inches per hour intensity through soil or sand with a minimum infiltration rate of 1 inches per hour. (0.17/0.8 = 0.2125)*

The soil material to be used within the swale area shall have a minimum infiltration rate of 0.8 inches per hour to meet the minimum treatment criteria above.

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS

Date: 3/10/2006
Job No.: 1299-00

TABLE 5. POTENTIAL SOURCES OF RUNOFF POLLUTANTS
MURPHY RANCH

Potential Source	Permanent Source Contral BMPs
Parking Lots and Driveways	Landscape Bio-Filtration Swale
Illegal Dumping	Onsite inlets will be imprinted with "NO DUMPING - FLOW TO CREEK."
Refuse Areas	All refuse into bins.
Litter Waste	Provide trash bins.
Landscape Maintenance	Landscape maintenance contractor to submit to O&M procedures to owner.

SECTION 3

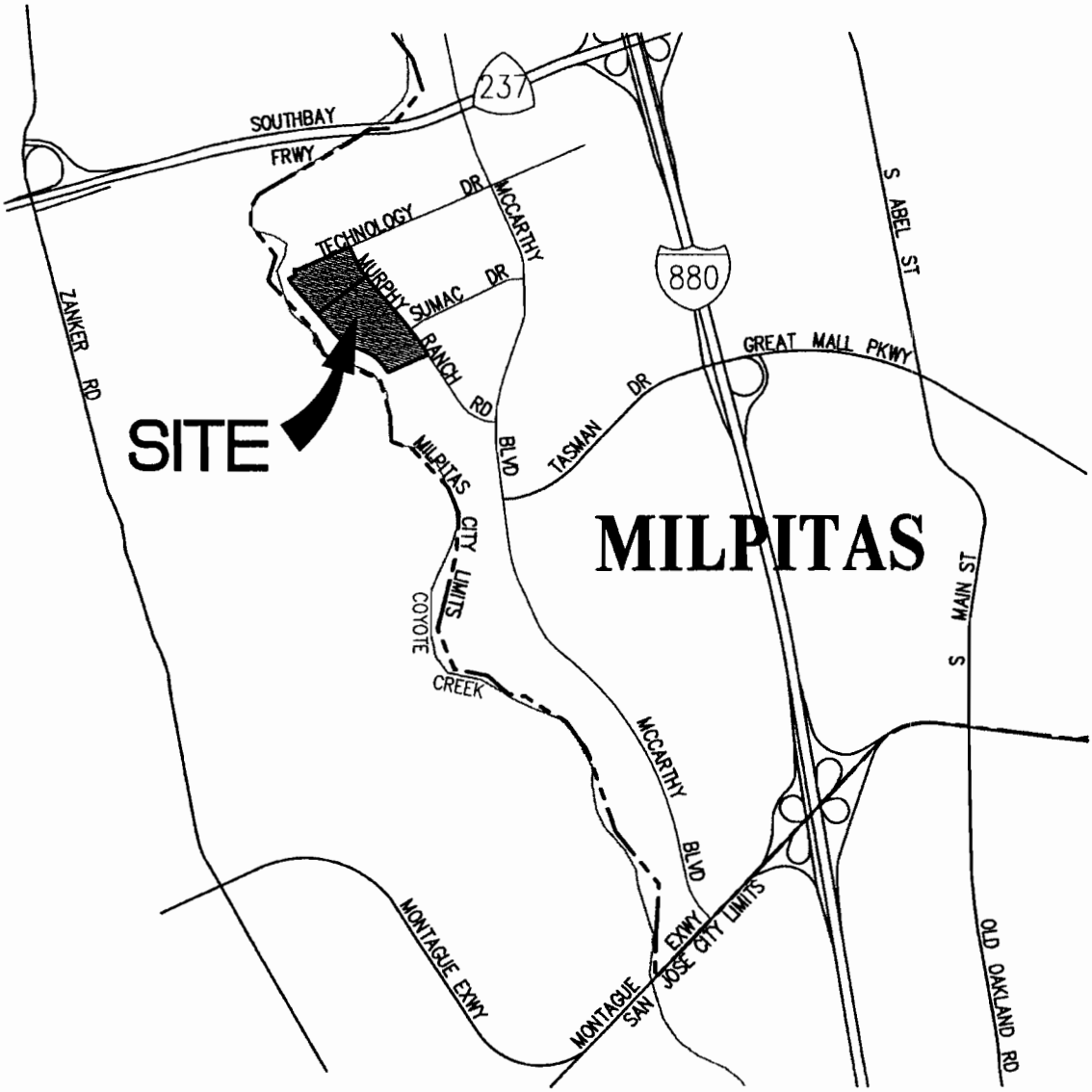

FIGURE 1

VICINITY MAP

MURPHY RANCH

SANTA CLARA COUNTY, CALIFORNIA

DATE: MARCH 2006

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
6111 Bollinger Canyon Road, Suite 150 • San Ramon, CA 94583
925-866-0322 • fax 925-866-8575
www.cbandg.com

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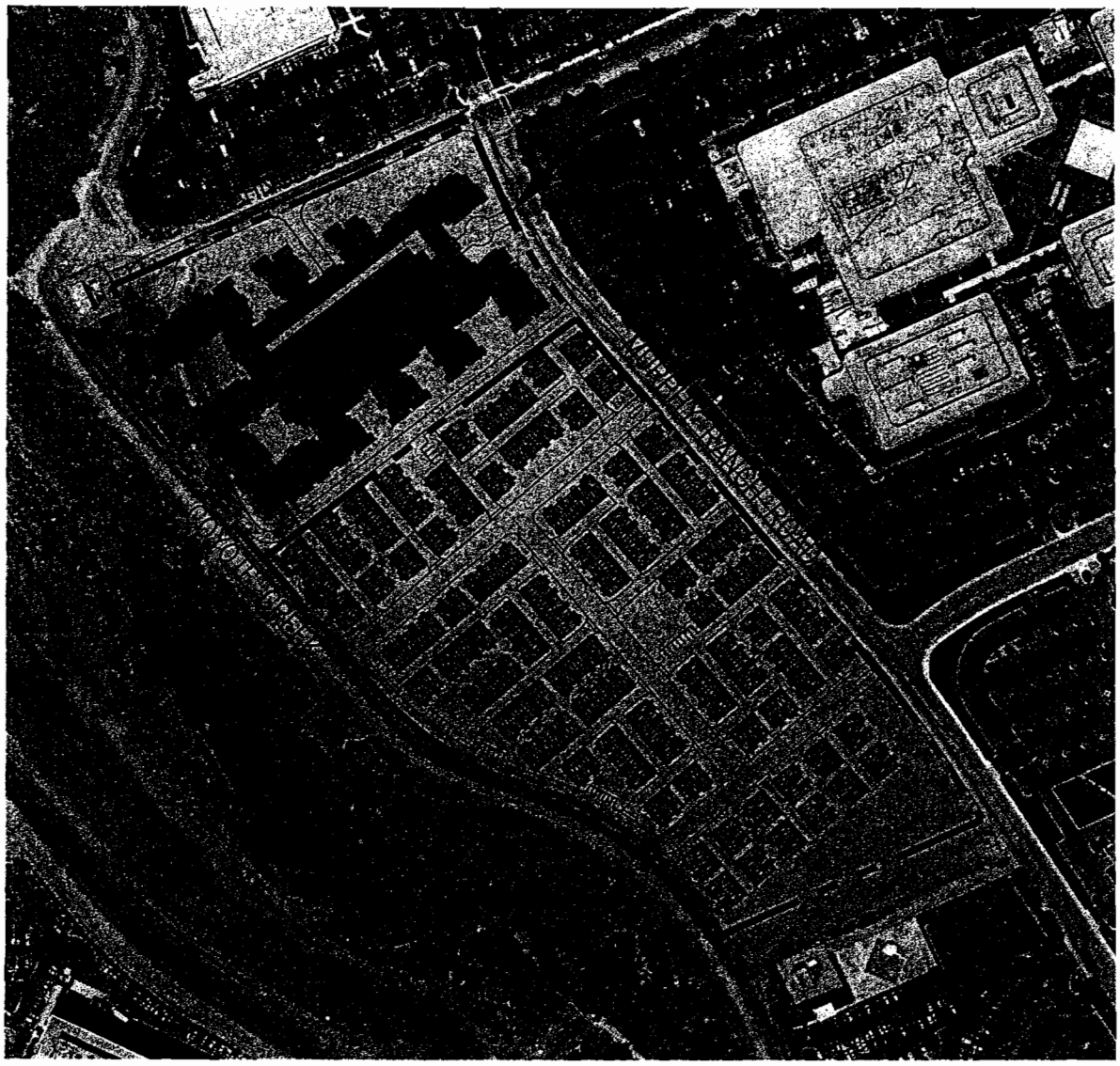

FIGURE 2

AERIAL PHOTO EXHIBIT

MURPHY RANCH

SANTA CLARA COUNTY, CALIFORNIA

DATE: MARCH 2006

cbg

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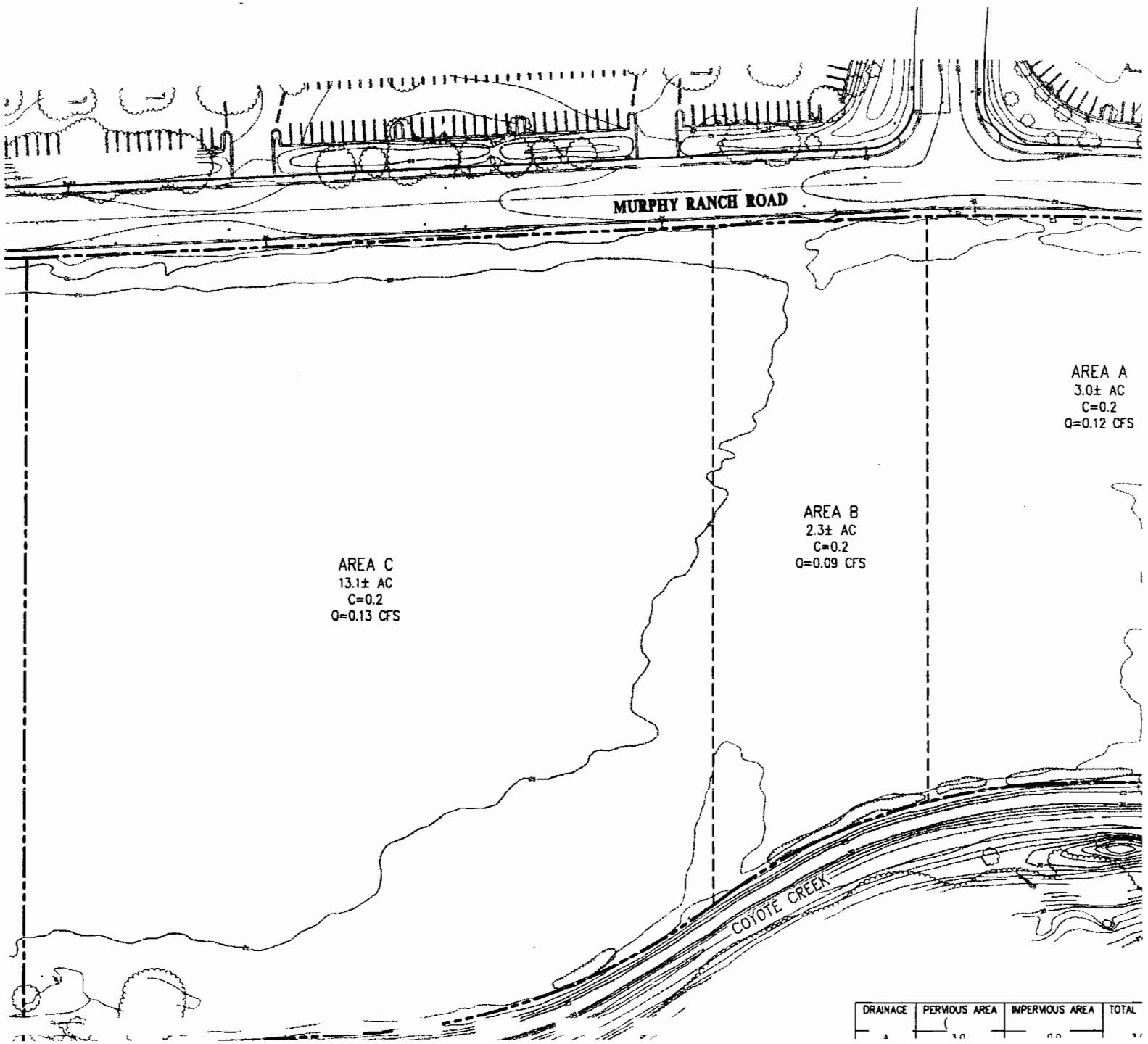
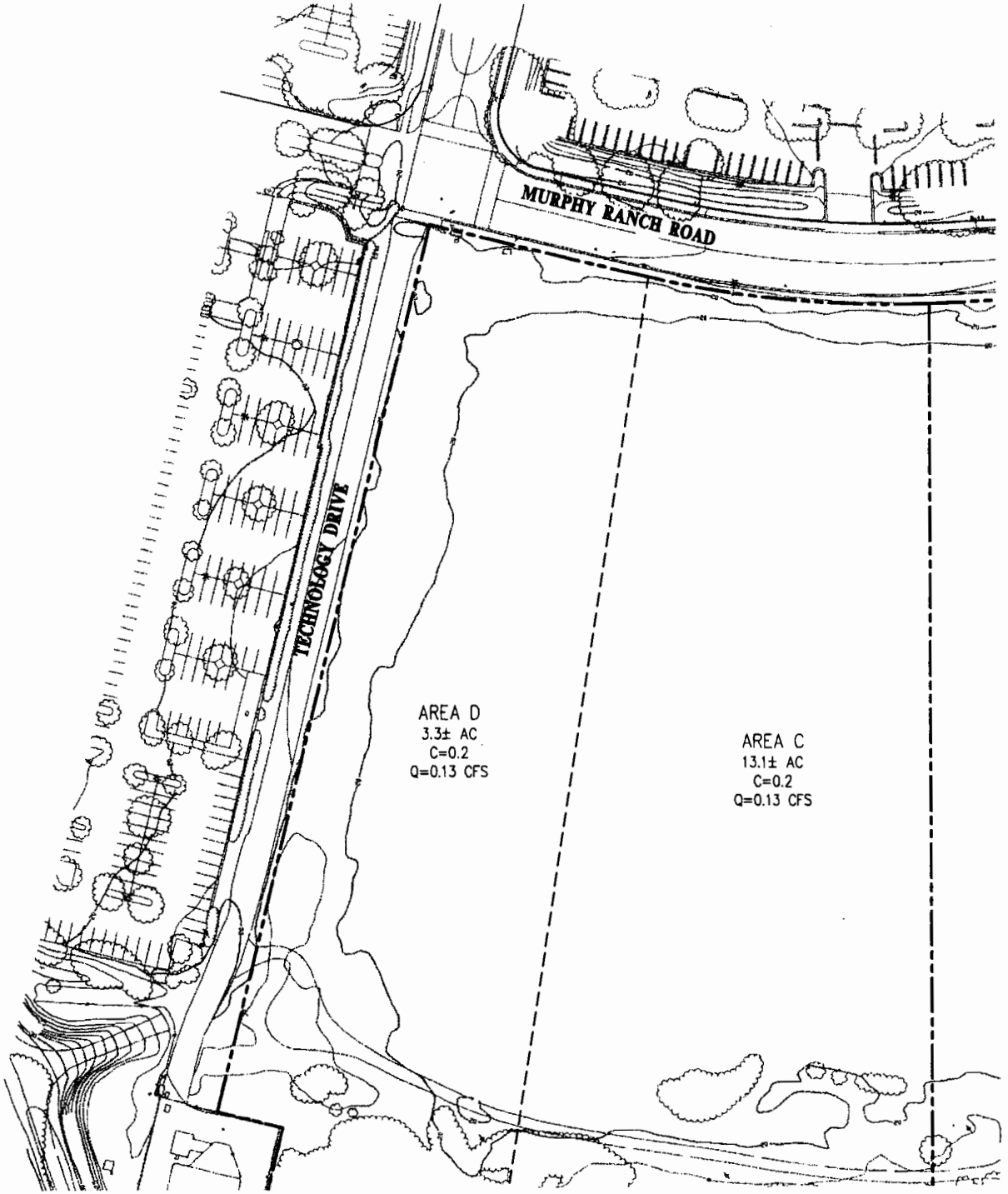
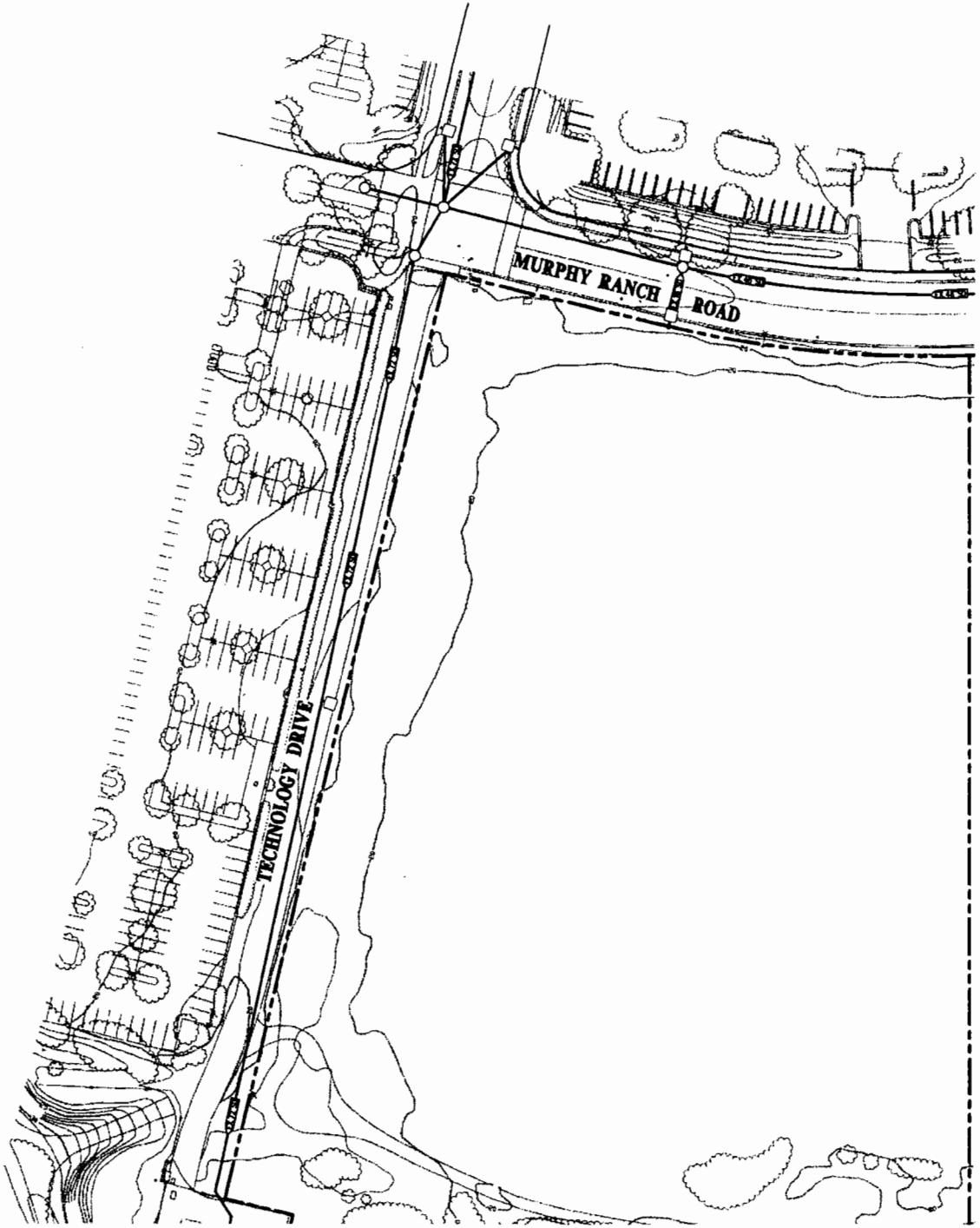
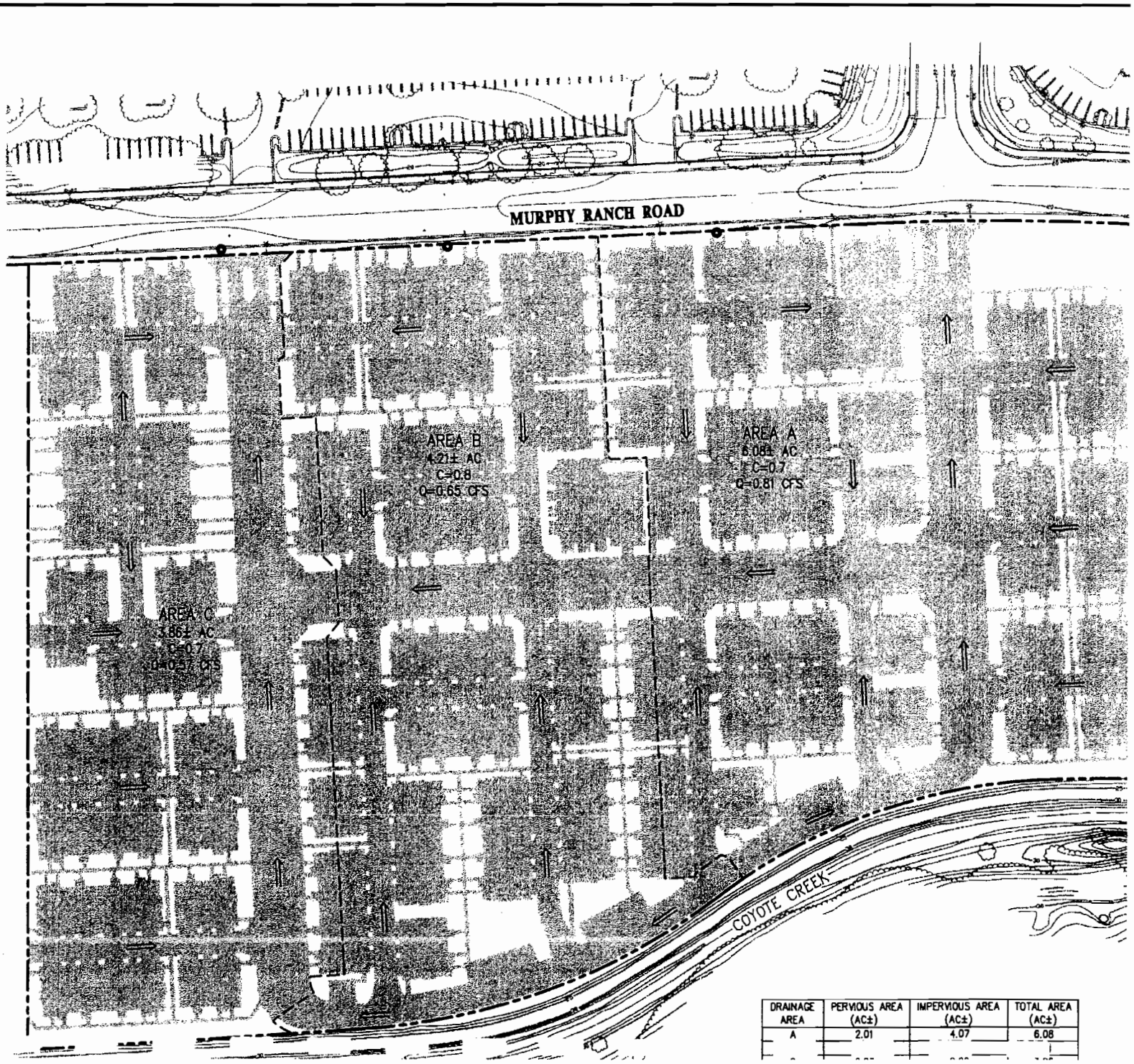


DRAINAGE	PERVIOUS AREA	IMPERVIOUS AREA	TOTAL
A	3.0	0.0	3.0

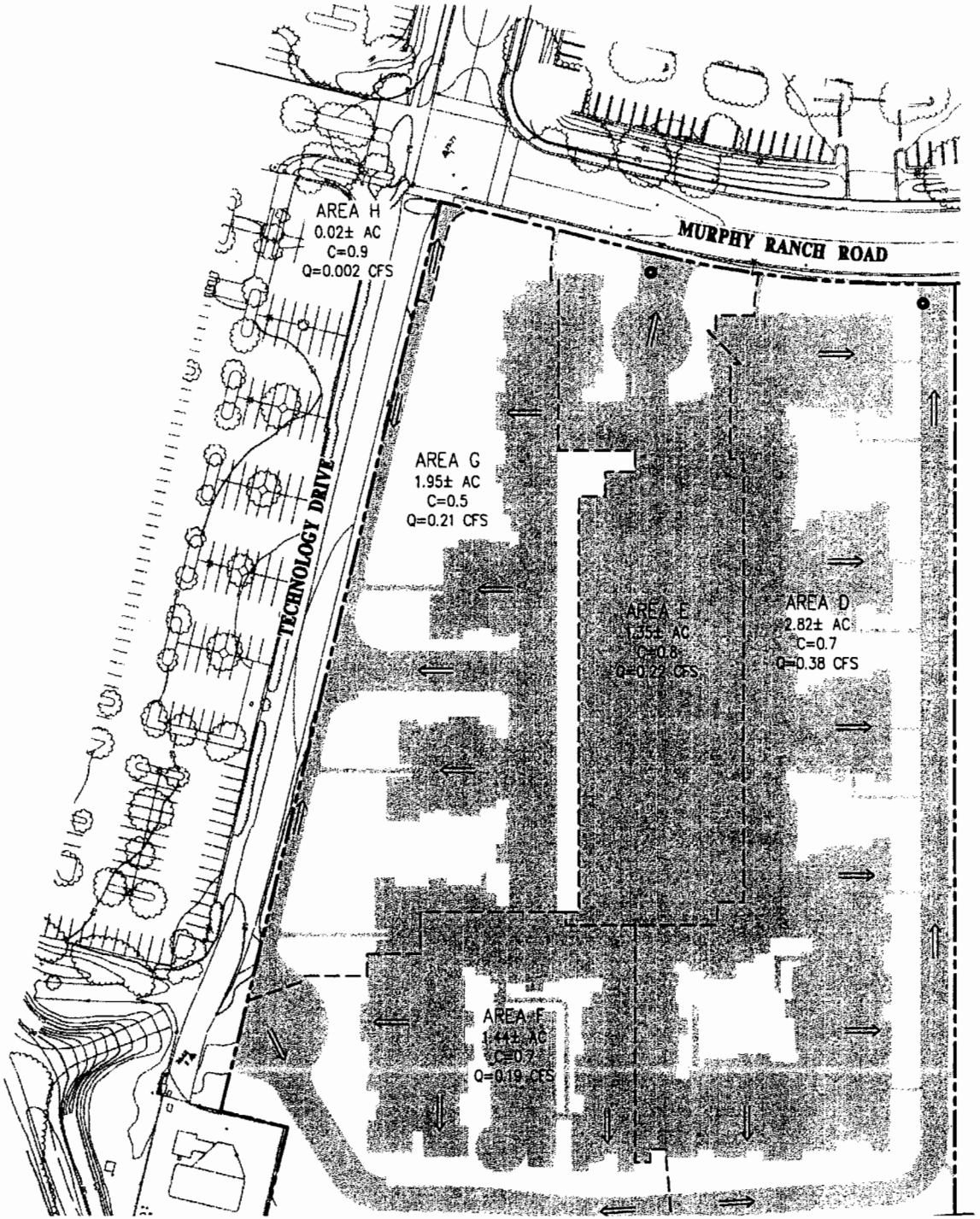

MURPHY RANCH ROAD
TECHNOLOGY DRIVE
AREA D
3.3± AC
C=0.2
Q=0.13 CFS
AREA C
13.1± AC
C=0.2
Q=0.13 CFS

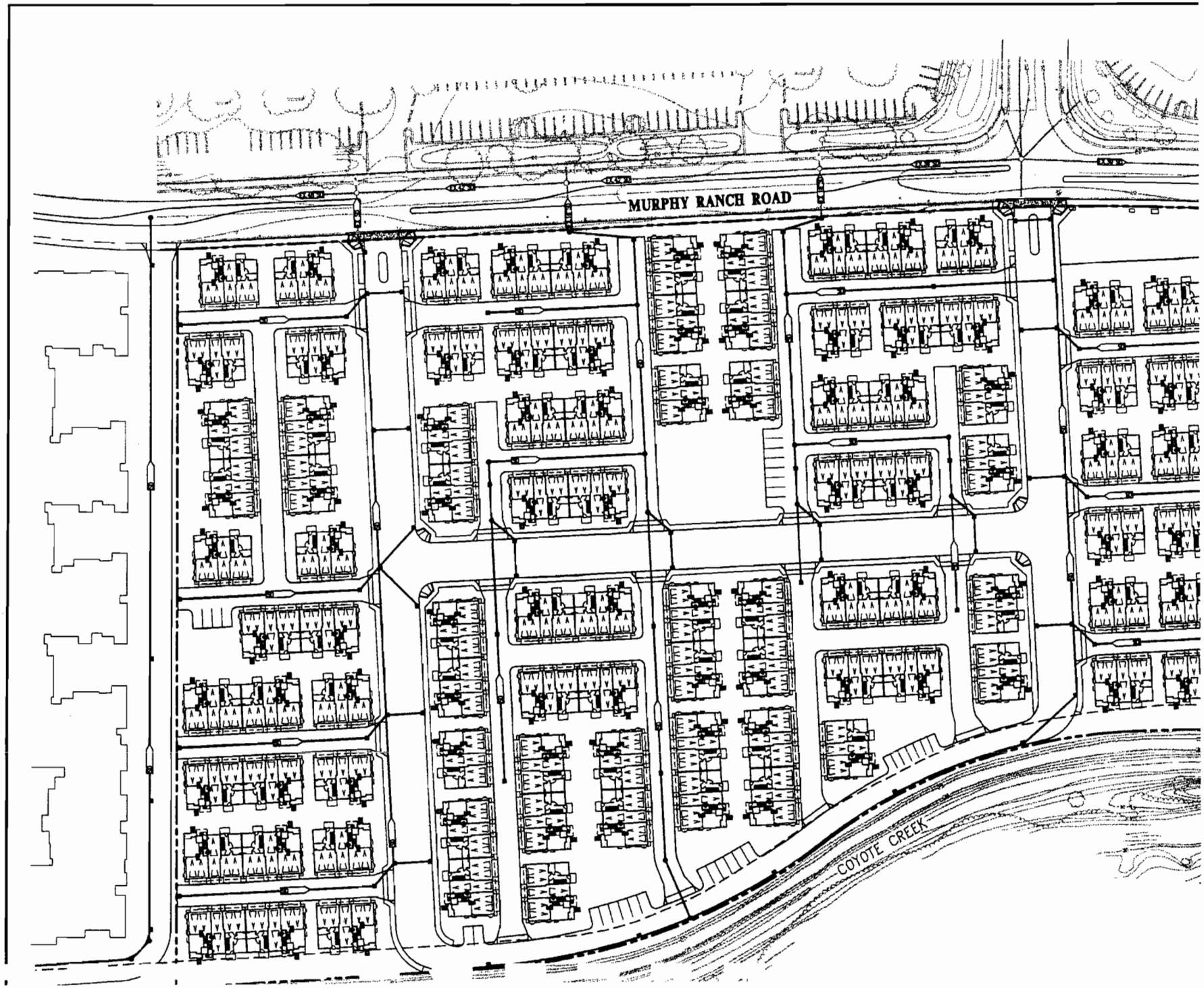
MURPHY RANCH ROAD
COYOTE CREEK


MURPHY RANCH ROAD
TECHNOLOGY DRIVE

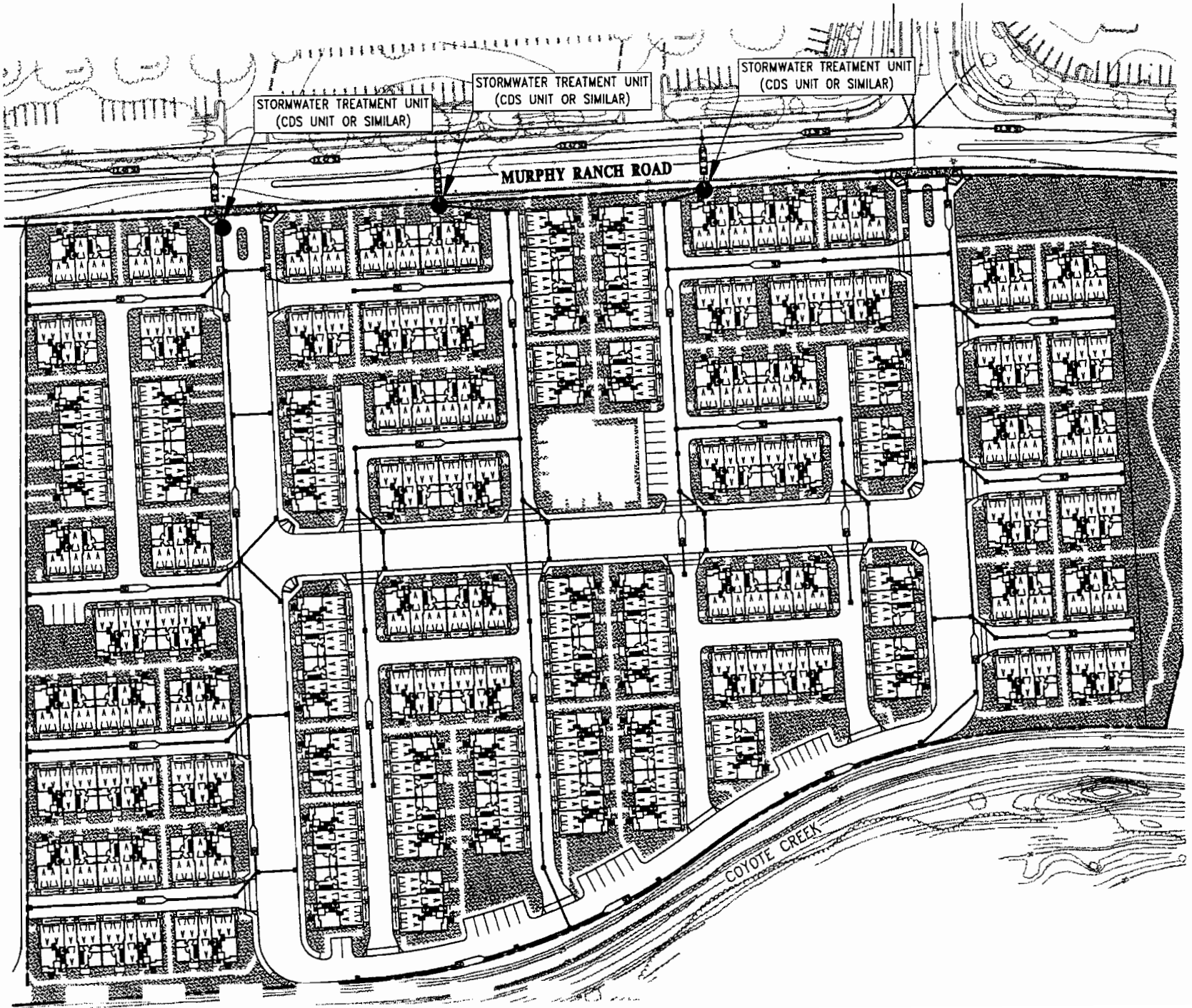


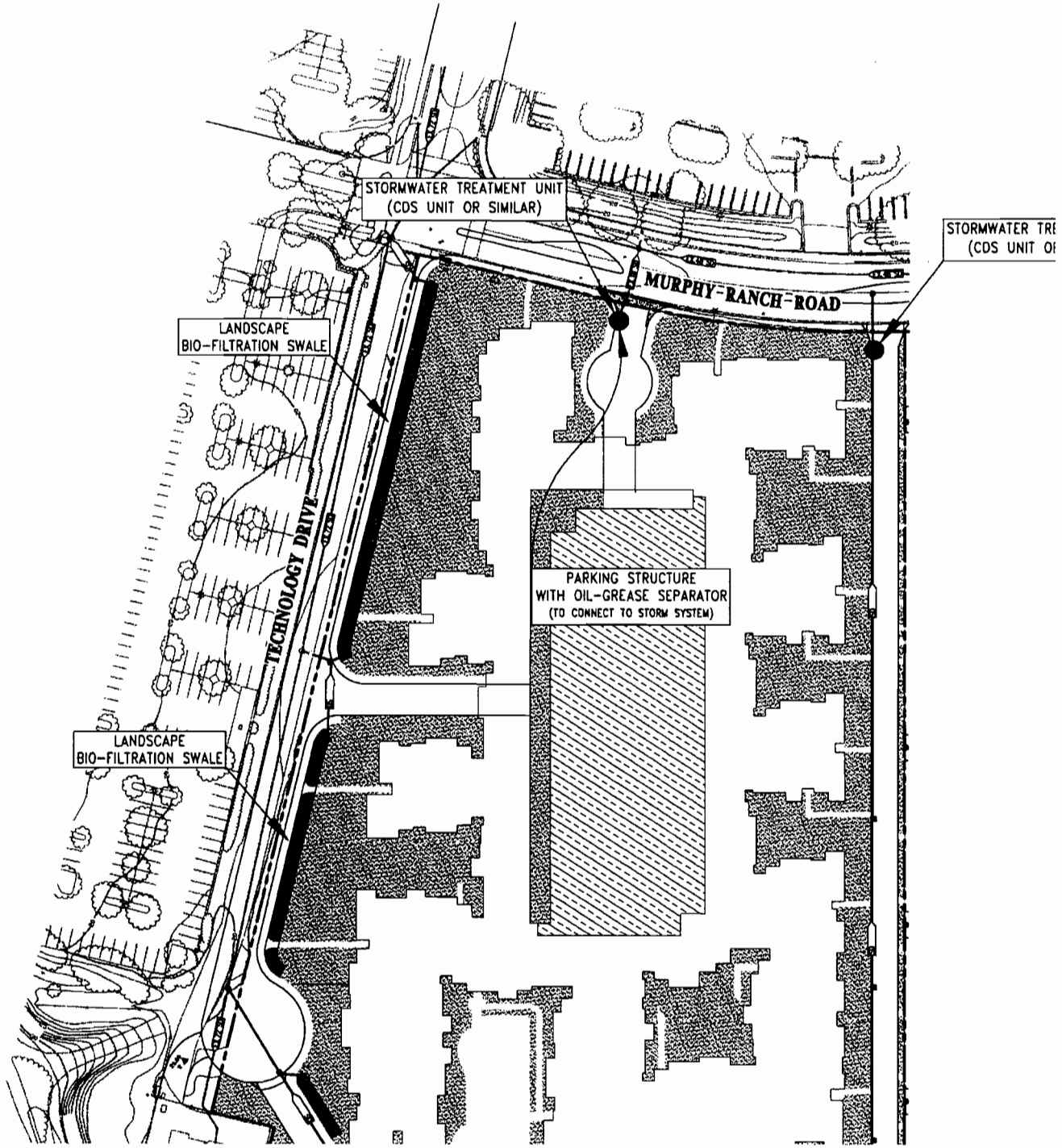
DRAINAGE AREA	PERVIOUS AREA (AC±)	IMPERVIOUS AREA (AC±)	TOTAL AREA (AC±)
A	2.01	4.07	6.08


MURPHY RANCH ROAD
TECHNOLOGY DRIVE
AREA H
0.02± AC
C=0.9
Q=0.002 CFS
AREA G
1.95± AC
C=0.5
Q=0.21 CFS
AREA E
1.35± AC
C=0.8
Q=0.22 CFS
AREA D
2.82± AC
C=0.7
Q=0.38 CFS
AREA F
1.44± AC
C=0.7
Q=0.19 CFS


MURPHY RANCH ROAD
COYOTE CREEK

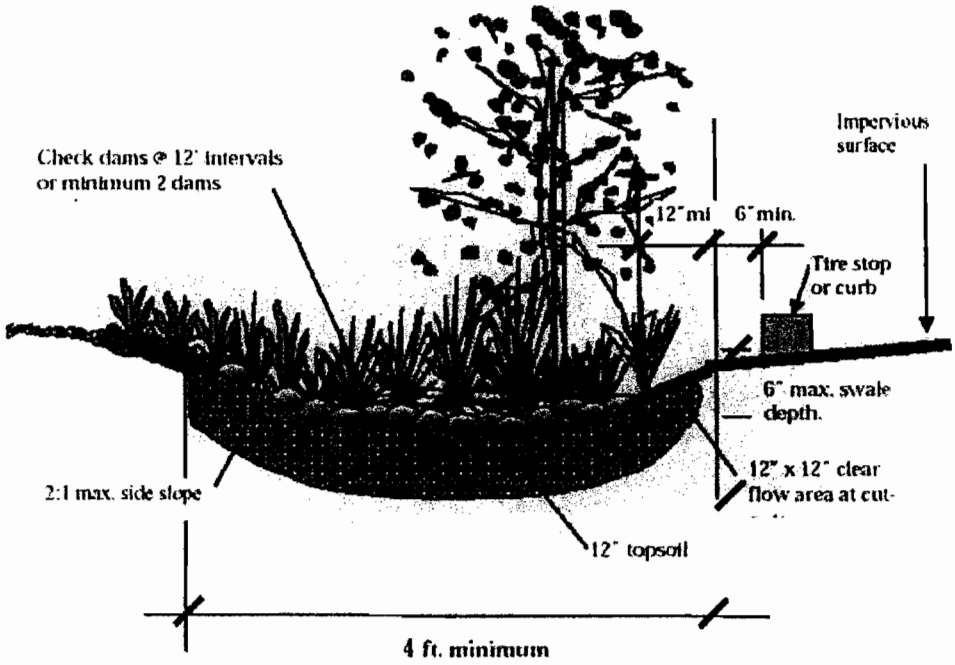
MURPHY RANCH ROAD
TECHNOLOGY DRIVE


STORMWATER TREATMENT UNIT
(CDS UNIT OR SIMILAR)
STORMWATER TREATMENT UNIT
(CDS UNIT OR SIMILAR)
STORMWATER TREATMENT UNIT
(CDS UNIT OR SIMILAR)
MURPHY RANCH ROAD
COYOTE CREEK


STORMWATER TREATMENT UNIT
(CDS UNIT OR SIMILAR)
STORMWATER TRE
(CDS UNIT OF
MURPHY-RANCH-ROAD
LANDSCAPE
BIO-FILTRATION SWALE
TECHNOLOGY DRIVE
PARKING STRUCTURE
WITH OIL-GREASE SEPARATOR
(TO CONNECT TO STORM SYSTEM)
LANDSCAPE
BIO-FILTRATION SWALE

SECTION 4

► **LANDSCAPE SWALE**



Section Not to Scale

Minimum length: 20 feet.
Maximum slope: 6%.
Soils in the top 12" to be equivalent to a sandy loam with a minimum infiltration rate of 5 inches/hour.
Irrigation required to maintain plant viability.
Check dams should extend the width of the swale, be 12" in length along the swale, 3"-5" high and constructed of rock, old brick, concrete, or similar.
No bypass required for larger storms.
Provide liner where depth to groundwater is less than 10'. Provide underdrain system in "D" soils or where liner is required.

Drawing courtesy City of Portland, OR.

RECOMMENDED PERMANENT BMP

LANDSCAPE SWALE

Model* Designation			Treatment Capacity Range		Screen Diameter\Height (ft)	Sump Capacity (yd^3)	Depth Below Pipe Invert (ft)	Foot Print Diameter (ft)
			cfs	MGD				
Precast**	Inline	PMIU20_15 (Drop-in Inlet)	0.7	0.5	2.0 \ 1.5	0.5	4.2	4.8
		PMSU20_15_4	0.7	0.5	2.0 \ 1.5	0.5	3.5 - 4	4.8
		PMSU20_15	0.7	0.5	2.0 \ 1.5	1.1	5.1	6.0
		PMSU20_20	1.1	0.7	2.0 \ 2.0	1.1	5.7	6.0
		PMSU20_25	1.6	1	2.0 \ 2.5	1.1	6.0	6.0
		PMSU30_20	2	1.3	3.0 \ 2.0	2.1	6.2	7.2
		PMSU30_30	3	1.9	3.0 \ 3.0	2.1	7.2	7.2
		PMSU40_30	4.5	3	4.0 \ 3.0	5.6	8.6	9.5
		PMSU40_40	6	3.9	4.0 \ 4.0	5.6	9.6	9.5
	Offline	PSWC30_20	2	1.3	3.0 \ 2.0	1.9	6.0	7.2
		PSW30_30	3	1.9	3.0 \ 3.0	1.8	7.0	6.0
		PSWC30_30	3	1.9	3.0 \ 3.0	2.1	7.0	7.2
		PSWC40_30	4.5	3	4.0 \ 3.0	1.9	8.5	8.3
		PSWC40_40	6	3.9	4.0 \ 4.0	1.9	9.6	8.3
		PSW50_42	9	5.8	5.0 \ 4.2	1.9	9.6	9.5
		PSWC56_40	9	5.8	5.6 \ 4.0	1.9	9.6	9.5
		PSW50_50	11	7.1	5.0 \ 5.0	1.9	10.3	9.5
		PSWC56_53	14	9	5.6 \ 5.3	1.9	10.9	9.5
		PSWC56_68	19	12	5.6 \ 6.8	1.9	12.6	9.5
		PSWC56_78	25	16	5.6 \ 7.8	1.9	13.6	9.5
		PSW70_70	26	17	7.0 \ 7.0	3.9	14	12.5
		PSW100_60	30	19	10.0 \ 6.0	6.9 or 14.1	12	18
		PSW100_80	50	32	10.0 \ 8.0	6.9 or 14.1	14	
		PSW100_100	64	41	10.0 \ 10.0	6.9 or 14.1	16	
Cast in Place		CSW150_134	148	95.5	15.0 \ 13.4	14.1***	19.6***	25.5
		CSW200_164	270	174	20.0 \ 16.4	14.1***	22.6***	34.5
		CSW240_160	300	194	24.0 \ 16.0	14.1***	21.2***	41

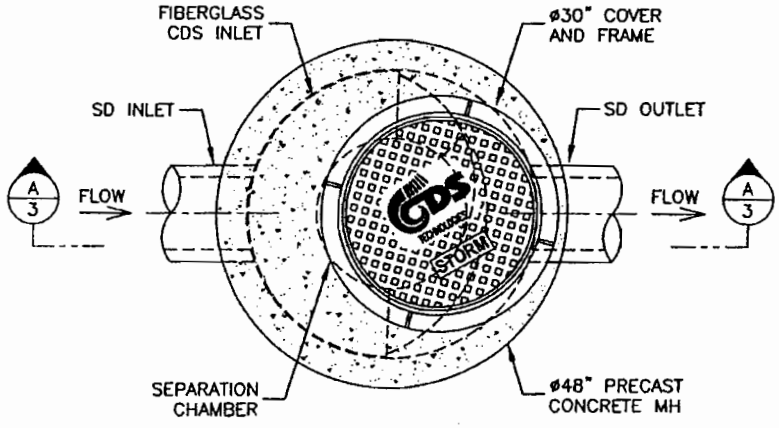
*CDS Precast Manhole Insert Unit (PMIU), Precast Manhole Stormwater Unit (PMSU), Precast Stormwater Concentric (PSWC), Precast (P), and Cast in Place (C), Stormwater (SW)

**CDS Technologies can customize units to meet specific design flows and sump capacities

***Sump Capacities and Depth Below Pipe Invert can vary due to specific site design

RECOMMENDED PERMANENT STRUCUTRAL BMP
STORMWATER TREATMENT UNIT –
MANUFACTURER CAPACITY INFORMATION

PLAN VIEW



NOTE:
CDS UNIT IS SHIPPED COMPLETE WITH FIBERGLASS INLET/OIL BAFFLE AND SEPARATION SCREEN ASSEMBLY PRE-INSTALLED.

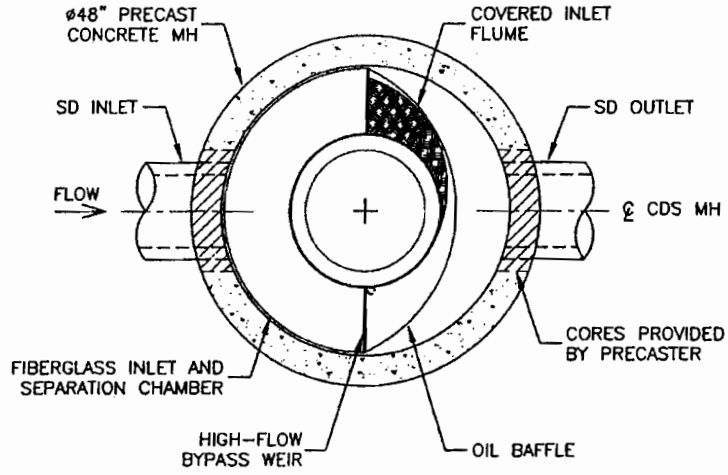
CDS MODEL PMSU20_15_4
STORMWATER TREATMENT UNIT

CDS TECHNOLOGIES™	PROJECT NAME CITY, STATE	JOB# DATE: DRAWN: APPROV.	SCALE 1"=20" SHEET 1

16360 MONTEREY RD. SUITE 250 MORGAN HILL, CA 95037 TEL: (888) 535-7559 FAX: (408) 782-0721

RECOMMENDED PERMANENT STRUCUTRAL BMP
STORMWATER TREATMENT UNIT

SECTION B-B



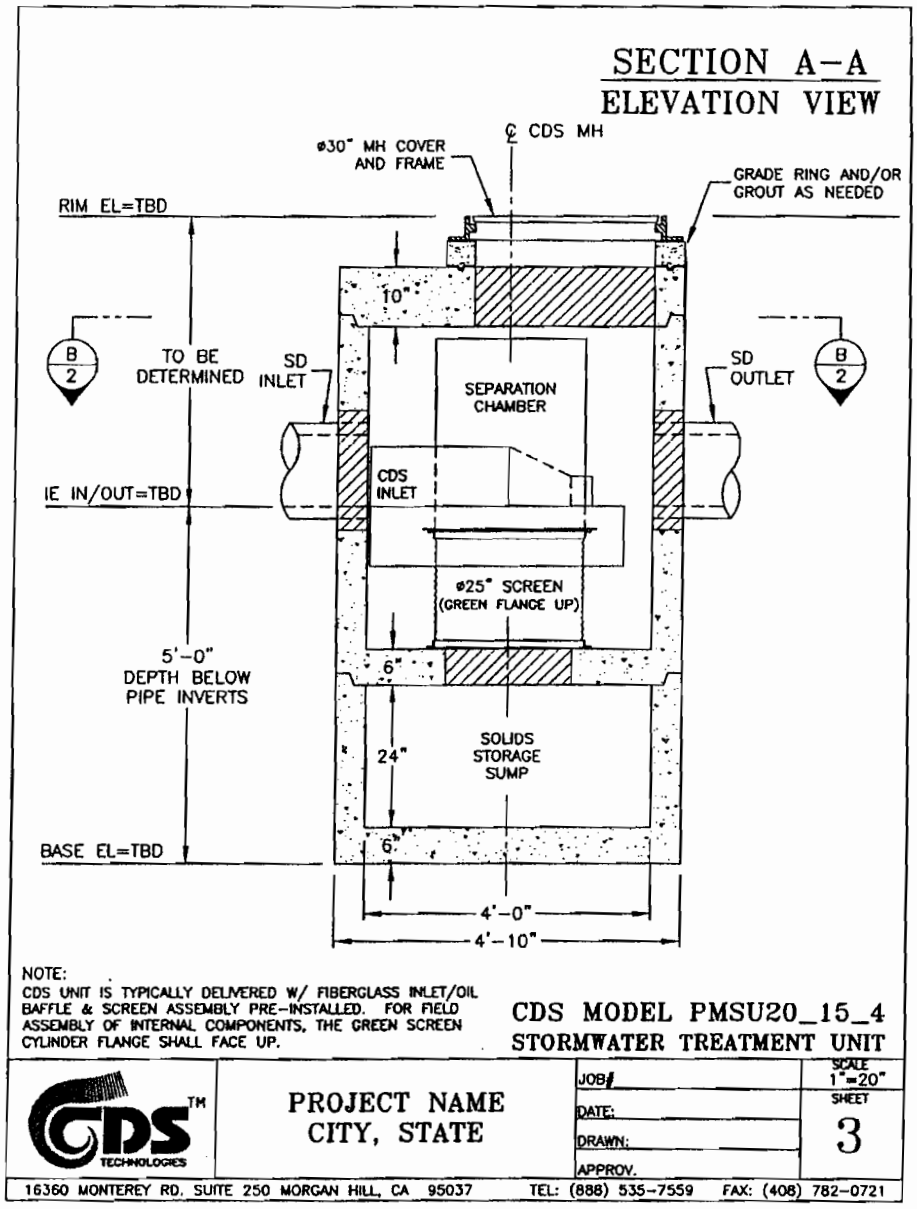
NOTE:
CDS UNIT IS SHIPPED COMPLETE WITH FIBERGLASS INLET/OIL BAFFLE AND SEPARATION SCREEN ASSEMBLY PRE-INSTALLED.

CDS MODEL PMSU20_15_4
STORMWATER TREATMENT UNIT

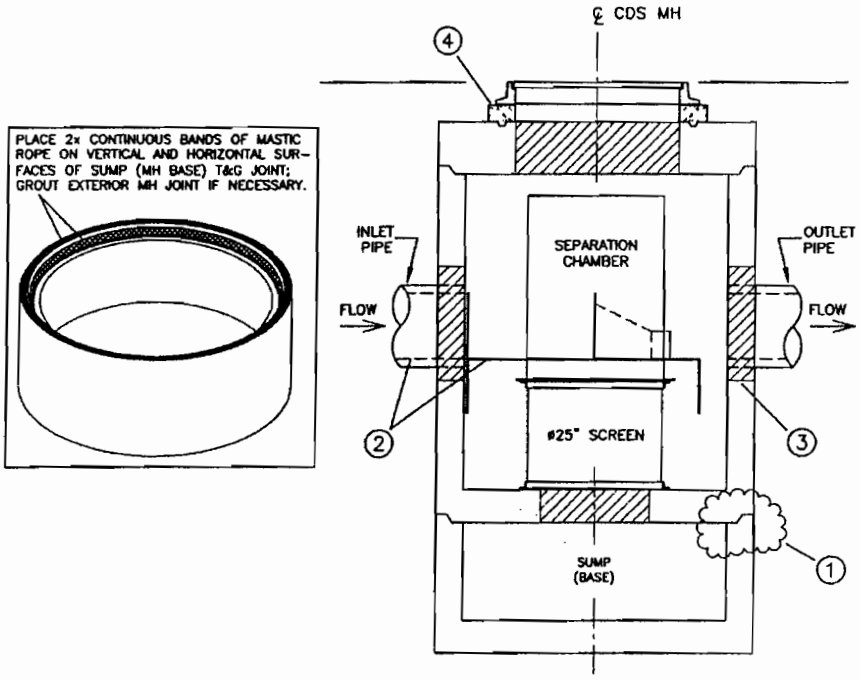
CDS TECHNOLOGIES™	PROJECT NAME CITY, STATE	JOB# DATE: DRAWN: APPROV.	SCALE 1"=20" SHEET 2

16360 MONTEREY RD. SUITE 250 MORGAN HILL, CA 95037 TEL: (888) 535-7559 FAX: (408) 782-0721

RECOMMENDED PERMANENT STRUCUTRAL BMP
STORMWATER TREATMENT UNIT



RECOMMENDED PERMANENT STRUCUTRAL BMP
STORMWATER TREATMENT UNIT



CONSTRUCTION NOTES:

1. APPLY BUTYL MASTIC TO SEAL JOINTS OF MANHOLE STRUCTURE (SEE INSET DETAIL DRAWING); APPLY GROUT TO EXTERIOR T&G JOINTS OF MH SECTIONS TO COMPLETELY SEAL IF NECESSARY (UNIT MUST BE WATER TIGHT, HOLDING WATER UP TO FLOWLINE INVERT, MINIMUM).
2. BEFORE PLACING MORE PRECAST COMPONENTS OR BACKFILLING, ENSURE FIBERGLASS INLET & (OUTLET) PIPE INLET INVERT ELEVATIONS MATCH – ADJUST IF NECESSARY.
3. PLACE GROUT OR USE FLEXIBLE CONNECTORS TO SEAL PIPE–MH CONNECTIONS.
4. USE GRADE RINGS, WALL SECTIONS, AND/OR GROUT TO MEET FINISHED–GRADE ELEVATION; SEAL AS NECESSARY.

GENERAL NOTES:

1. CDS UNIT COMES COMPLETE WITH FIBERGLASS INLET/OIL BAFFLE AND SCREEN ASSEMBLY PRE–INSTALLED.
2. INSTALL UNIT PER CDS INSTALLATION GUIDELINES AND ALL APPLICABLE PROJECT SPECIFICATIONS.
3. CONTRACTOR TO BE EQUIPPED TO LIFT HEAVIEST PICK SECTION (5,000# TYPICAL, 6,500# MAXIMUM).

CDS TECHNOLOGIES™	CDS MODEL PMSU20_15_4 MISCELLANEOUS NOTES	JOB# DATE: DRAWN: APPROV.	SCALE N.T.S. SHEET 4

16360 S. MONTEREY RD. SUITE 250 MORGAN HILL, CA 95037 TEL: (888) 535–7559

RECOMMENDED PERMANENT STRUCUTRAL BMP
STORMWATER TREATMENT UNIT

Recommended BMP Maintenance

Treatment BMPs require minimum maintenance similar to that for any landscape areas. BMPs must be regularly maintained to insure that they continue to be effective and do not cause flooding or other harmful nuisances. The maintenance requirements are:

- Irrigate landscape swales and landscape infiltration areas throughout the dry season. Irrigation will be provided with sufficient quantity and frequency to allow plants to thrive.

- Limit the use of fertilizers and/or pesticides. Mosquito larvicides should be applied only when absolutely necessary.

- Replace and amend plants and soils as necessary to insure the BMPs are effective and attractive. Plants must remain healthy and trimmed if overgrown. Soils must be maintained to efficiently filter the stormwater.

- After all major storm events, inspect storm drain inlets, drain pipes, check dams, swales and channels for obstructions and remove if necessary.

- Continue general landscape maintenance, including pruning and cleanup throughout the year.

- A BMP maintenance plan agreement shall be prepared and entered in an agreement with the City of Milpitas with the building permit process.

- Structutal BMP units (CDS devices) shall be annually inspected and maintained. Any collected debris shall be removed from the unit, typically by a vacuum truck industry.

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS

March 10, 2006
Job No.: 1299-00

Mr. Babak Kaderi
CITY OF MILPITAS
Engineering Department
455 E. Calaveras Blvd.
Milpitas, CA 95035

Subject: Stormwater Control Plan Certification
Murphy Ranch – Fairfield Residential Apartments
APN: 086-01-041 / 086-01-042
Milpitas, California

Dear Babak,

The selection, sizing, and preliminary design of treatment BMP's and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order 01.119.

Very truly yours,

Jason J. Neri, P.E.
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
JASON J. NERI
No. 59136
Exp. 6-30-07
CIVIL
STATE OF CALIFORNIA

P:\1200 - 1299\1299-00\Stormwater Control Plan\Stormwater Cert.doc

6111 BOLLINGER CANYON ROAD, SUITE 150 • SAN RAMON, CA 94583 • (925) 866-0322 • FAX (925) 866-8575 • www.cbandg.com

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS

Date: 3/10/2006
Job No.: 1299-00

Construction Plan C.3 Checklist
MURPHY RANCH

Stormwater Control Plan Page #	BMP Description	See Plan Sheet #s
Figure 7	Landscape Swale	
Figure 7	Structural BMP / Stormwater Treatment Unit (CDS unit or similar)	

City of Milpitas **C.3 Data Form**

Submit with Stormwater Control Plan

When Should This Form Be Completed?

Complete this form if any of the following applies:

- Project was "deemed complete" between Oct. 15, 2003 – Oct. 5, 2005 and has added or replaced an impervious surface area of 1 acre (43,500 square feet) or more.
- Project was "deemed complete" after Oct. 6, 2005 and has added or replaced an impervious surface area of 10,000 square feet or more and falls within the Group 2A categories (see below).

Note: For public roadways, include new impervious surface areas, but not replaced impervious surface areas.

What is an Impervious Surface?

Any surface on or above ground that prevents the infiltration or passage of water into the soil. Impervious surfaces include, but are not limited to, non-absorbent rooftops, paved or covered patios, driveways, parking lots, paved walkways, compacted soil or rock, and streets. It includes streets, roads, highways, and freeways that are under the City of Milpitas' jurisdiction and any newly constructed paved surface used primarily for the transportation of automobiles, trucks, motorcycles, and other motorized vehicles. Excluded from this category are public sidewalks, bicycle lanes, trails, bridge accessories, guardrails, and landscape features.

How To Determine the Date "Deemed Complete"

Private projects are "deemed complete" when the list of requirements needed for planning application submittals (provided by the Planning Division) is complete and ready to be processed. This list includes the Stormwater Control Plan. **Public projects** are "deemed complete" when City Council approves ***design*** funding.

What are the Group 2A Categories?

- Gas stations;
- Auto wrecking yards;
- Loading dock areas and surface parking lots containing more than 10,000 square feet or more of impervious surface area;
- Vehicle or equipment maintenance areas (including washing and repair), outdoor handling or storage of waste or hazardous materials, outdoor manufacturing area(s), outdoor food handling or processing, outdoor animal care, outdoor horticultural activities, and various other industrial and commercial uses where potential pollutant loading cannot be satisfactorily mitigated through other post-construction source control and site design practices.

For More Information

Contact the Planning Division at 408-586-3279.

Date: 3/10/06

APN # 086-01-041 (086 - 01 - 04 2)

Project Name: MURPHY RANCH

Project Description: 659 MULTIFAMILY UNITS

Project Location (Address): 1001 MURPHY RANCH ROAD

Applicant Info (Name, Address, Phone #): FAIRFIELD RESIDENTIAL
5510 MOREHOUSE DRIVE, SAN DIEGO CA 92121 (SUITE 200) (858) 457-2123

Contractor / Designer Info (Name, Company, Address, Phone #): CARLSON BARBEE GIBSON
6111 BOLLINGER CANYON ROAD, SUITE 100
SAN RAMON, CA 94583 (925) 866-0322

1. ☐ **Public** ☒ **Private**
2. ☒ **New** ☐ **Redevelopment**
3. **Project Type** (select one): ☒ Commercial/Industrial ☐ Restaurant / Retail ☐ Mixed Use ☐ Shopping Center ☐ Residential ☒ Streets / Roads / Highways
4. **Impervious Surface Area (SF = Square Feet):**
   a. Entire Site Size 21.73 AC. ~~SF~~
   b. **EXISTING** Impervious Surface Area 0 AC. SF
   c. **EXISTING** Impervious Surface Area **to be Removed** 0 AC. SF

d.	**NEW** Impervious Surface Area **to be Added or Replaced**	15.45 AC.	SF
e.	**TOTAL** Impervious Surface Area (b-c+d)	15.45 AC.	SF

50% Rule (only applies to existing developments NOT subject to stormwater treatment measures):

f.	Percent Impervious Surface Area in Final Design (e/a x 100%)	71	%

For Significant Redevelopments (check appropriate box):
- ☐ If 50% or more, the entire project must be included in the treatment measure design.
- ☐ If less than 50%, only that affected portion must be included in the treatment measure design.

g. **Total Land Disturbance** During Construction Includes clearing, grading, and excavating. 21.73 SF

5. **Pesticide Reduction Measures Used (Check all that apply):**

- ☐ None - Doesn't Apply
- ☐ Education
- ☐ Conditions of Approval
- ☐ Physical and Mechanical Horticultural Measures
- ☐ Environmental Measures
- ☐ Biological Measures
- ☐ Chemical Measures
- ☐ Other _____

6. **Stormwater Control Measures Used (Check the appropriate boxes that apply to the project):**

SITE DESIGN

- ☐ Minimize land disturbance
- ☐ Minimize impervious surfaces
- ☒ Minimum-impact street design
- ☒ Minimum-impact driveway or parking lot design
- ☒ Cluster structures/pavement
- ☐ Disconnect downspouts
- ☐ Alternative driveway design
- ☐ Microdetention in landscape
- ☐ Preserve open space: _____ sq. ft.
- ☐ Protect riparian and wetland areas, riparian buffers (setback from top of bank: _____ ft.)
- ☐ Minimize change in runoff hydrograph
- ☐ Other: _____

STORMWATER TREATMENT

(TO BE DETERMINED)

- ☐ Bioretention
- ☐ Drain Insert
- ☐ Exfiltration Trench
- ☐ Extended Detention Basin
- ☐ Hydrodynamic Separators
- ☐ Infiltration Basin
- ☐ Infiltration Trench
- ☐ Media Filter
- ☐ Multiple Systems
- ☐ Planter Boxes
- ☐ Porous Pavement
- ☐ Retention/Irrigation
- ☐ Roof Gardens
- ☐ Underground Detention Systems
- ☐ Vegetated Buffer Strip
- ☐ Vegetated Swale
- ☐ Vortex Separator*
- ☐ Water Quality Inlet
- ☐ Wet Pond
- ☐ Wet Vault
- ☐ Wetland
- ☐ Other: _____

SOURCE CONTROLS

- ☐ Alternative building materials
- ☐ Wash area/racks, drain to sanitary sewer
- ☐ Covered dumpster area, drain to sanitary sewer
- ☒ Swimming pool/fountain drain to sanitary sewer
- ☒ Beneficial landscaping (minimizes irrigation, runoff, pesticides and fertilizers; promotes treatment)
- ☒ Outdoor material storage protection
- ☐ Covers, drains for loading docks, maintenance bays, fueling areas
- ☒ Maintenance (street sweeping, catch basin cleaning)
- ☐ Permeable pavement
- ☐ Storm Drain Signage
- ☐ Green or Blue Roofs
- ☐ Other: _____

FOR CITY STAFF ONLY

PRIVATE PROJECTS	***PUBLIC PROJECTS***
Planning:	***Design & Construction Engineering / Special Projects:***
Date Received: _____	Date Received: _____
By (Name): _____	By (Name): _____
Permit #: _____	Permit #: _____
Project #, if aplicable: _____	Project #, if aplicable: _____
Master Permit #, if applicable: _____	Master Permit #, if applicable: _____
Date Entered into Database: _____	Date Entered into Database: _____
By (Name): _____	By (Name): _____

Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS

1299-00
9-May-06

PROPOSED PROJECT CONDITION
SANITARY SEWER FLOWS

Land Use	Dwelling Units (DU)	Area (Acres)	Average Day Flow [1] Generation Factor (GPD/unit)	Average Daily Flow (MGD)	Peak Factor (not less than 1.6)	I/I [2] (gpad)	Q (MGD)
Multi-Family (condos)	285	14.15	225	0.0641	1.71	1,800	0.14
Multi-Family (apts)	374	7.58	225	0.0842	1.61	1,800	0.15
TOTAL	**659**	**21.7**	**225**	**0.1483**	1.60	**1,800**	0.28

Notes:

1. Milpitas Average Daily Flow for 'Multiple Family Residential'.

2. I/I based on Milpitas Sanitary Sewer Drainage Basin A01.

Appendix C

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

RECEIVED
DEC 01 2005
DAVID J. POWERS
& ASSOCIATES, INC.

November 29, 2005

Ms. Shannon George
David J. Powers and Associates
1885 The Alameda, Suite 204
San Jose, CA 95126

RE: Murphy Ranch Road Burrowing Owl Assessment (HTH #2608-01)

Dear Ms. George:

Per your request, H.T. Harvey & Associates has conducted a habitat assessment for Burrowing Owls (*Athene cunicularia*) on a ±22-acre site located on the west side of Murphy Ranch Road, immediately east of Coyote Creek and south of Technology Drive, in Milpitas, California . The purpose of this survey was to determine whether suitable habitat for Burrowing Owls is present on this site.

H.T. Harvey & Associates wildlife ecologist Laird Henkel, M.S., conducted a reconnaissance-level survey of the site on November 3, 2005, during the Burrowing Owl non-breeding season. The site consists of an open field of bare dirt that had been disked relatively recently (i.e., probably within the past few months). It is surrounded by light industrial development to the north, east, and south, and by the Coyote Creek levee to the west. No Burrowing Owls or secondary evidence of their presence (e.g., feathers, castings, prey remains) were observed. However, California ground squirrel (*Spermophilus beecheyi*) burrows were found throughout the site, and conditions on the site were suitable for foraging by owls, making the site consistent with potential Burrowing Owl foraging, nesting, and roosting habitat. Because this reconnaissance-level survey was not conducted according to the protocol accepted by the California Department of Fish and Game (CDFG) for surveys for this species (which requires site visits on four separate days if suitable habitat is present), presence/absence was not determined by our survey.

H.T. Harvey & Associates previously surveyed the majority of this site, finding two Burrowing Owls on the site in January 2001. A Mitigation Agreement (CDFG #1802-2001-011-3) between Townsend Milpitas LLC and the CDFG, dated January 2001, provided for mitigation for impacts to Burrowing Owls on this site. The Mitigation Agreement was assumed by Lucent Technologies Inc. in May 2001, and in July 2002, Lucent purchased 26 mitigation credits at the Agua Fria Conservation Bank as mitigation for impacts to Burrowing Owls on this site. In our opinion, this mitigation reduces impacts to nesting, roosting, and foraging Burrowing Owls on the Murphy Ranch Road project site to less-than-significant levels under the California Environmental Quality Act.

Please feel free to contact me at srottenborn@harveyecology.com or (408) 448-9450 ext. 220 if you have any questions regarding our assessment. Thank you for contacting H.T. Harvey & Associated regarding this project.

Sincerely,

Stephen C. Rottenborn

Stephen C. Rottenborn, Ph.D.
Senior Associate Wildlife Ecologist

Appendix D

TRC Lowney

June 12, 2006
2189-1A

Fairfield Residential
c/o Ms. Nadia L. Costa, Esq.
BINGHAM MCCUTCHEN LLP
1333 North California Blvd., Suite 210
Walnut Cree k, California 94596

RE: VICINITY RISK ASSESSMENT
1001 MURPHY RANCH ROAD
MILPITAS, CALIFORNIA

Dear Ms. Costa:

At your request, we present our evaluation of hazardous materials usage and review of potential risks associated with hazardous materials usage in the immediate vicinity of 1001 Murphy Ranch Road in Milpitas, California (Project Site) depicted on Figure 1. We understand that Fairfield Residential is planning to acquire the property for construction of a residential development and therefore desired to evaluate any potential risks associated with siting residential uses in the vicinity of existing industrial uses.

1.0 SITE VICINITY RECONNAISSANCE

To attempt to identify potential hazardous materials users located within a ¼-mile radius of the site[1], we performed the following tasks:

Our representative conducted a limited drive-by survey on September 29, 2006 of an area surrounding the site for a radius of approximately ¼ mile to note readily observable facilities from publicly accessible areas that appeared likely to use, handle, or store significant quantities of hazardous materials based on outdoor storage of materials.

In addition, we obtained and reviewed a regulatory agency database report that identified known hazardous materials users in a ¼ mile radius around the site.

We reviewed a Phase I environmental site assessment prepared for the Project Site by PES Environmental, Inc. (August 2004) that contained information about existing uses in the vicinity of the Project Site, and compared that information to our observations noted during the vicinity drive-by survey and during the review of the regulatory agency database report.

We identified a total of ten sites, which could potentially house hazardous materials and therefore present a potential risk. Those identified sites are listed in Table 1. We obtained facility-specific information on hazardous materials usage, including Hazardous Materials Business Plans and chemical inventories, of the sites identified in the previous tasks; readily available files for these selected facilities were reviewed at the San Jose and Milpitas Fire Departments. Copies of pertinent documents are attached in Appendix A.

[1] As we discussed, there is no "industry standard" with respect to the appropriate geographic scope for the analysis. Therefore TRC Lowney utilized the ¼ mile radius based on the precedent established by a similar risk evaluation for the Cisco Child Care Center in Milpitas.

405 Clyde Avenue • Mountain View, California 94043
Main: 650-967-2365 • Fax: 650-967-2785
www.lowney.com • www.trcsolutions.com

As discussed in more detail below, Lowney determined that one of the ten identified sites, the Calpine-Agnews Cogeneration Facility, warranted further review because of the hazardous materials used. Accordingly, you requested that Lowney conduct further research regarding this facility. On February 21, 2006, our representative conducted a drive-by survey of an area surrounding the Agnews facility for a radius of approximately 1 mile. The goal was to attempt to identify sensitive receptors, including schools, hospitals, parks, residences, and daycare facilities within this one-mile radius. Results of the reconnaissance are summarized as follows:

The schools noted were the University of Phoenix and Palmer College of Chiropractics West, both located in San Jose.

A hospital was located at the Department of Developmental Services- Agnews Developmental Center. This Center covers a large area in San Jose and reportedly includes parks/recreational areas, a school, medical clinics, and residences. The Center is scheduled to undergo closure.

Many residences, existing and under construction, were noted within the 1-mile radius in San Jose. These consist mainly of high-density, mid-rise apartments, town-homes, and condominiums.

Figure 2 depicts results of the reconnaissance, and also includes San Jose and Milpitas Planning Department land use zoning.

2.0 REGULATORY AGENCY DATABASE REPORT

TRC Lowney reviewed a regulatory agency database report (Appendix A), and facilities identified as hazardous materials users are listed in Table 1. The review identified two hazardous materials users just outside of the ¼-mile radius of the site given the amount and type of materials stored on these two sites, you requested that TRC Lowney include these facilities in its risk assessment. These facilities are also listed on Table 1.

3.0 SAN JOSE AND MILPITAS FIRE DEPARTMENT FILE REVIEW

TRC Lowney reviewed the available files for the facilities listed in Table 1 at the San Jose Fire Department on October 4, 2005, and on October 6, 2005 at the Milpitas Fire Department to obtain facility-specific information on hazardous materials usage, including Hazardous Materials Management Plans (HMMP) and chemical inventories. Copies of pertinent documents are attached in Appendix B and a brief summary of chemicals used at these facilities is included in Table 1.

Table 1. Potential Hazardous Materials Users in the Site Vicinity

Facility Name and Number	Address	Approximate Distance from the Project Site	Site Drive-by Observations	Database Review	Reported Chemical Inventories-File Review
1. Intersil	1001 Murphy Ranch Road, Milpitas	⅛ mile southeast	Office Buildings (two) possible R&D use	This facility was not listed in government database	No files available at the fire department
2. Murphy Ranch Pump Station	801 Murphy Ranch Road, Milpitas	⅛ mile east southeast	Small concrete building with DOT placard posted outside	This facility is listed on the Cortese, LUST, CA FID, and SWEEPS lists	HMMP on file dated 4/12/2004 listed one 2,000 gallon diesel AST
3. No Signage	Unmarked site on Sumac Drive, Milpitas; all numbers have been removed from building	⅛ mile east	Vacant office building, no posted signs	Unknown	Unknown
4. Maxtor Corporation-Building 1, FA Lab	1140 Technology Drive, Milpitas	⅛ mile north northeast	Conglomerate of office buildings with several cylindrical tanks stored in fenced area around the back of the property, no DOT placards visible	This facility is on the RCRA info list and is listed as a small quantity generator of hazardous waste and in the toxic chemical release inventory system	HMMP on file date 12/10/2003 listed small amounts of various hazardous materials (alcohols, and acids) in liquid containers up to 62 gallons, and various gases (compressed oxygen, nitrogen, and helium) in cylinders with up to 291 cubic foot capacities
5. KLA Tencor	5 South Technology Drive, Milpitas	⅛ mile north	Conglomerate of office buildings, only posted signs are for use of recycled water on the property, no placards posted	This facility was not listed in any government database	No files available at the fire department
6. Cisco Systems	170 West Tasman Drive, Milpitas	¼ mile west southwest	Large campus of office buildings and recreational areas, no posted placards	This facility was not listed in any government database	No files available at the fire department
7. Avaya	1033 McCarthy Blvd., Milpitas	¼ mile east southeast	Office building (R&D), no posted placards	This facility was not listed in any government database	No files available at the fire department
8. No signage	855 Tasman Drive and 1020 McCarthy, Milpitas	¼ mile east southeast	Vacant office buildings, available by Peery/Arrillaga sign, fountain still operating, but all driveways blocked by planter boxes	This facility was not listed in any government database	No files available at the fire department

(continued)

Table 1. Potential Hazardous Materials Users in the Site Vicinity
(continued)

Facility Name and Number	Address	Approximate Distance from the Project Site	Site Drive-by Observations	Database Review	Reported Chemical Inventories- File Review
9. PG&E- Los Esteros Substation	1515 Milpitas Alviso Road, San Jose	2,300 feet north northwest (just beyond ¼-mile radius)	Power plant, several smoke/steam stacks, piping, cylinders, and tanks visible on the property	This facility is listed on the HAZNET and LUST lists	HMMP on file dated 11/03/2003 listed large quantities of various chemical liquids including insulating, hydraulic, lubricating, and turbine oils (up to 6,513 gallons), battery and sulfuric acids (up to 5,000 gallons), aqueous ammonia (up to 10,000 gallons), nitrogen and carbon dioxide gases (up to 300 cubic feet), and diesel fuel (up to 320 gallons)
10. Calpine-Agnews Cogeneration Facility	3800 Cisco Way, San Jose	1,500 feet north northwest (just beyond ¼-mile radius)	Power plant, some steam stacks, piping, various cylinders and holding tanks visible on property	This facility was not listed in any government database	HMBP dated April 1, 2004 listed 12,000 gallons (52, 333 lbs) anhydrous ammonia, 325 gallons oil/waste oil, 75 gallons corrosion inhibitor, alkaline additive and boiler chemicals, 150 cubic feet of carbon dioxide/monoxide and nitrogen, 1,600 gallons of sodium hypochlorite, up to 5,000 gallons of sodium hydroxide, 75 gallons sodium bromide, 5,000 gallons sulfuric acid and various 75-gallon containers of petroleum, oil and gas.

4.0 HAZARDOUS MATERIALS BUSINESS PLANS

TRC Lowney reviewed the readily available chemical inventories of the above referenced facilities (provided by the City of Milpitas and San Jose) within approximately ¼ mile of the Project site to evaluate the general nature and quantities of hazardous materials used. Four facilities located in the general vicinity of the Project site reported hazardous materials in excess of the threshold planning quantities required for them to submit Hazardous Materials Business Plans.

From a risk assessment perspective, the primary concern of this review was to identify chemicals that may have off-site consequences in the unlikely event of a catastrophic release. Generally, chemicals that are acutely toxic exist in a form that readily allows off-site transport (after release), and if used/stored in sufficient quantities, represent chemicals of concern (COCs) for risk assessment purposes.

Of the four facilities reviewed, two reportedly use materials that have the potential for off-site consequences if released at exterior locations at the facility, the Los Esteros Critical Energy Facility and the Calpine Agnews Cogeneration Facility. These facilities are described below.

4.1 Los Esteros Critical Energy Facility, 800 Thomas Foon Chew Way

COCs present at this facility reportedly include a 5,000-gallon container (93-98%) of sulfuric acid, and a 4,180-pound container of dichlorotrifluoroethane.

4.2 Calpine Agnews Cogeneration Facility, 3800 Cisco Way

The primary COC at this location consists of a 60,000-pound container of liquefied ammonia gas.

5.0 PROTECTIVE PROGRAMS

Facilities that store, handle, and use hazardous materials are heavily regulated at local, state, and federal levels. The primary regulations that protect the public and environment from hazardous materials releases include the Uniform Fire Code, Uniform Building Code, the Santa Clara County Toxic Gas Ordinance (TGO)[1], and the more recently enacted Federal and State regulations that include the Risk Management and Prevention Programs (RMP)[2], California Accidental Release Program (CalARP)[3] and the Process Safety Standards (Federal and State OSHA)[4].

The primary controls that limit the risks of releases of significant quantities of acutely hazardous materials include TGO, RMP, CalARP, and Process Safety. TGO regulates toxic gas users and requires that acutely hazardous process materials (AHMs) be housed in secondary containment facilities that typically include ventilated storage of gases, leak detection, secondary containment of process piping, automatic shutdown at the source, and treatment capability for discharged gases.

[1] Ordinance No. NS-517.44 Code of County of Santa Clara – Division B11, Chapter X
[2] Federal Accidental Release Prevention Program [Title 40, Code of Federal Regulations (CFR) Part 68]
[3] CCR, Title 19, Division 2, Chapter 4.5
[4] CCR, Title 19, Section 5189

RMP, CalARP, and Process Safety standards, require comprehensive management programs that include hazard analysis, process operating procedures, process inspections, mechanical integrity, and management of change programs, risk reduction, and the active management of hazardous chemical facilities to reduce the risks and potential consequences of catastrophic chemical releases.

6.0 OFF-SITE CONSEQUENCE ANALYSIS (OCA)

Given the COCs present at the Los Esteros Facility and the Calpine Facility, you requested that TRC Lowney conduct an off-site consequence analysis to assess the level of potential risk involved. With respect to the inventory of chemicals located at the Calpine Agnews and PG&E Los Esteros facilities, the primary and overriding concern would be related to the large quantity of ammonia stored at the Calpine Agnews facility. Although the sulfuric acid stored at both facilities is acutely hazardous, it does not possess the necessary physio-chemical properties to qualify as a chemical that requires federal Risk Management Planning (RMP) and/or California Accidental Release Program (CalARP) compliance. With the respect to the dichlorotrifluoroethane stored at the Los Esteros facility, this material also does not possess the toxicity to be regulated either through the RMP or CalARP programs. Therefore, a release of these chemicals would not likely present significant offsite impacts. Accordingly, only the Calpine facility is further discussed below.

6.1 Calpine OCA

As required by U.S. EPA and Cal/EPA, the operators of the Calpine facility conducted a screening level evaluation of potential impacts to the region surrounding the energy plant as part of their compliance obligations under RMP and CalARP. The evaluation included worst-case and alternative release scenarios. In accordance with RPM requirements, the worst-case release scenario assumes that the entire contents of the ammonia tank (approximately 60,000 pounds) are released over a 10-minute period. The release was modeled using conservative (required) parameters so that potential risks are not underestimated. For their worst-case scenario (Scenario 1), Calpine estimated the distance to the toxic endpoint to be approximately 8.1 miles from the facility.

The toxic endpoint for ammonia is assumed to be the Emergency Response Planning Guideline 2 (ERPG-2) concentration. The ERPG-2 concentration is defined as the maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action. The current ERPG-2 concentration for ammonia is 150 parts per million (ppm).

The worst-case release scenario assumes a large amount of ammonia is released over a short period of time and the dispersion model predicts the downwind dilution of the ammonia cloud. After release, the hypothetical ammonia cloud travels downwind and disperses as clean air is entrained into the gas cloud. The rate of dispersion (dilution) is dependent upon wind speed, surface topography, and atmospheric conditions. As the plume travels downwind it becomes less concentrated. Therefore, at distances nearer to the release, higher concentrations are expected. At distances farther from the release, concentrations are lower.

In addition to the worst-case Scenario 1 release, Calpine conducted an alternative release scenario, Scenario 2, which assumed that a release occurs during the loading/unloading of ammonia from the tank. Scenario 2 assumed that a ten-minute release of 4,137 pounds of ammonia occurs through a hole in a pipe during loading/unloading. For this scenario, the

distance to the toxic endpoint (ERPG-2) was estimated to be approximately 0.41 mile from the facility. Alternative release scenarios are generally considered more realistic with respect to probable release risks associated with chemical facilities. In this case, the operators of the Calpine facility, through engineering judgment and through the conduct of the facility specific hazard and operability study, determined that this was a more likely release scenario.

6.1.1 Additional Screening Level Modeling

TRC Lowney conducted additional screening level modeling to forecast concentrations at the exterior of the Project site, and at other locations (distances) in the event of a release under the Worst-Case Scenario at the Calpine facility. The ALOHA CAMEO Program was used to conduct evaluation. ALOHA incorporates a modified (computationally simplified) version of the Dense Gas Dispersion (DEGADIS) algorithm, and also incorporates a Gaussian Dispersion algorithm for non-dense gas releases. FEMA (1989) provides descriptions of Gaussian dispersion and release rate calculations incorporated in ALOHA. U.S. EPA (1989), and Trinity Consultants (1991) provide descriptions of the DEGADIS algorithm.

At the Project site, outdoor concentrations of ammonia could reach 80,000 ppm assuming a 60,000-pound release of ammonia from the Calpine facility under the Scenario 1 worst-case conditions. Calpine is approximately 0.35 mile from the Project site.

The worst case Scenario 1 release implies that the tank containing the ammonia looses its integrity resulting in the loss of its entire contents. Examples of events that could cause such a release include elevated pressures within the tank caused by extreme heat (fire), puncture of the tank through impact by a heavy object (airplane, automobile, large object dropped from a crane, etc.) and failure of a welded seam through corrosion (or a defect). In addition, the shearing/bursting of a large ammonia process pipe downstream from the tank could also result in the loss of the tank's contents over a short period of time. Seismic events, elevated pressures, and mechanical impacts could result in significant process pipe damage that may result in a worst-case release.

Worst-case release scenarios also assume conservative atmospheric conditions that include atmospheric Stability Class F and wind speed of 1.5 meters per second (m/sec). The atmospheric stability and wind speed determines the chemical's dispersion in the vertical and horizontal directions. Stability Class F implies low atmospheric turbulence and calm winds and is associated with night time conditions, or dark cloudy days.

At 0.5 mile from the release, outdoor concentrations of ammonia could reach 43,000 ppm under Scenario 1 worst case conditions.

At a distance of 1 mile from the point of release, outdoor ammonia concentrations are predicted to reach 13,000 ppm under worst-case conditions. Accordingly, under Scenario 1 worst-case conditions, in the event of a catastrophic release, TRC Lowney's evaluation showed that the outdoor concentrations would significantly exceed the ERPG-2 concentration of 150 ppm. With respect to the alternative Scenario 2 release amount, outdoor concentrations of ammonia could reach 5,600 ppm under worst-case conditions at the Project site.

However, the results of the assessment significantly change when the analysis assumes normal wind speeds and atmospheric conditions. Normal conditions assume a wind speed of 3.5 m/sec and atmospheric Stability Class C. For a worst-case release, at a distance of 0.35 mile from the release, outside concentrations are predicted to be approximately 2,300 ppm. At 0.5 mile from the release, the outside concentrations are predicted to be 1,200 ppm. At a distance of one mile from the Scenario 1 worst-case release, the outside concentrations are predicted to be 320 ppm.

Under the alternative Scenario 2 release amount, assuming normal wind speed and atmospheric conditions, at a distance of 0.35 mile from the release, outside concentrations are predicted to be approximately 160 ppm. At 0.5 mile from the release, the outside concentrations are predicted to be 80 ppm. At a distance of one mile from the release, the outside concentrations are predicted to be 22 ppm. It is very clear from the discussion above that the most important determinants for downwind concentrations include atmospheric turbulence and wind speed, and that concentrations are significantly lower under normal conditions. Of course, the direction of the wind will determine the migration path and affected receptors.

6.2 Calpine Agnews Cogeneration Facility Risk Reduction Program

The above discussion evaluates the results of a release in the unlikely event one should occur. A number of factors reduce the risk of such occurrence. Risk management at the Calpine Agnews facility is summarized below.

Based on our discussions with staff at the County of Santa Clara (Jim Blalmy, personal communications, March 2006) the Calpine Agnews facility appears to be exempt from TGO since it is on state-owned land. However, the facility reportedly has completed a seismic evaluation, a hazard and operability study, and has developed mechanical integrity and management programs (hazard reduction practices) in compliance with RMP/CalARP. In addition, Calpine reports that it has had no ammonia related accidents in its operational history (beginning December 1990).

With respect to the seismic evaluation, this facility appears to be located in a Seismic Zone 4, which indicates a high seismic risk. In a high seismic risk zone, damage to gas, sewer, and water mains can occur during an earthquake. To mitigate this risk, the facility reportedly has seismically anchored the ammonia tank, installed flexible lines from the tank to the piping system, and has completed additional seismic bracing upgrades for the ammonia piping system. The seismic evaluation is important since a large gas main supplies the plant, and mechanical integrity of the piping system is important during a seismic event.

In addition to seismic improvements, release reduction measures (mechanical and procedural) have also reportedly been implemented and emergency drills have been conducted with on-site emergency response personnel and the San Jose Fire Department.

The hazard and operability (HAZOP) study for this facility included a break down of the ammonia system into nodes that included delivery, the storage tank, and the dilution skid. At each node, a series of "what if" questions were applied to the node to identify potential deviations/failures that could result in a release, and to identify the potential consequences of each deviation/failure. Then, existing safeguards to prevent each node specific deviation/failure were listed. If the HAZOP team identified insufficient safeguards to prevent deviations/failures, then additional risk reduction measures were recommended. The risk reduction measures were prioritized based on likelihood and the potential consequences of each deviation/failure.

Appendix C of this report includes the HAZOP study conducted for this facility. The HAZOP identifies potential release scenarios, consequences of the potential releases, severity and risk of each scenario, existing safeguards, and recommended risk reduction measures to be taken by the facility. In addition, facility hazard reduction practices are included in Appendix C.

6.2.1 Additional Risk Discussion

To provide additional perspective on the likelihood of a catastrophic event that could result in the loss of the entire contents of the ammonia tank, the HAZOP identified potential root causes that included a seismic event, fire, and mechanical impacts (crane dropping, material/vehicular impact). Another plausible cause could also include an airplane crash into the facility.

To place the terms "highly unlikely" and "improbable" in terms of estimating potential risks, the Bureau of Labor Statistics (BLS) provides statistics relative to fatalities recorded in U.S. industry. According to the BLS, in all of U.S industry 618 fatalities occurred in 2004 as a result of exposure to hazardous substances, fire, and explosions. Estimating a total non-farm work force in the U.S of approximately 130,000,000 persons (BLS), the incidence rate in 2004 for this type of fatality was approximately 0.46 per 100,000 persons employed.

In addition, according to the National Transportation Safety Board (NTSB), in 2001 there were 2.36 aviation accidents per million flight hours and 266 fatalities per 629 million passengers. This translates into a fatality incidence rate of 0.042 fatalities per 100,000 passengers.

Based on industry experience (as reflected in BLS statistics), it would appear that the probability of a serious release resulting in loss of life is very low or highly unlikely. In addition, an aviation accident event that causes a release also has low likelihood or is improbable.

With respect to other mechanical impacts, the Calpine HAZOP reports that the layout of the facility, steel guard poles, and 5 mph speed limitations, reduce the possibility that vehicle impacts upon the ammonia system could occur. In addition, excess flow valves are identified as a mechanical safety measure should piping be damaged. Excess flow valves generally sense high flow (due to a pipe break) and shut flow off if detected. The safeguards for crane operations are procedural and training related.

Finally, a fire event was also identified as a potential cause of a release of ammonia from the tank. However this event was deemed unlikely since no flammable materials are stored near the tank and the tank facility is constructed of concrete and steel. As discussed in Section 6.1.1 above, if a release were to occur, the offsite risks would be dependent upon strength of release, distance from the release, atmospheric conditions, wind speed, and wind direction.

Based on meteorological data obtained from the San Francisco Airport (the nearest regional facility with available data) for the years 1984 and 1992, the wind blows from the west to northwest (3 wind vector directions) approximately 49% of the time. Wind blows less than 5% of the time from each of the other 13 wind vector directions. In addition, worst-case wind speeds (all directions) and calms occur approximately 7% of the time. Therefore, wind speeds conducive to plume dilution (lower downwind concentrations and less severe impacts) occur approximately 93% of the time.

In summary, the particular risk at any "location" in the vicinity of the Calpine facility is based on: (1) the likelihood of an event that compromises the integrity of the ammonia tank/piping system such that ammonia is released; (2) the relative likelihood of release size and amount; (3) the likelihood that in place engineering features fail to mitigate the leaking ammonia; (4) the likelihood that there is an operational failure to initiate emergency shut-down and plant level emergency procedures; (5) the likelihood that first responders fail to or are unable to respond in a timely fashion; (6) the likelihood that wind is blowing towards the location; and (7) the likelihood that atmospheric conditions and wind speed are not conducive to rapid dispersion of the released material.

7.0 CONCLUSIONS

The potential for adverse health consequences related to a catastrophic release of a large amount of ammonia could be substantial at significant distances from the Calpine facility.

However, the likelihood that a significant release of ammonia from the Calpine facility will occur is very low based on industry statistics, Calpine's experience, and the reported programs and controls in place. Moreover, any potential risk associated with these industrial facilities is not project-specific, but rather regional in nature given the potentially significant impact of such potential release at distances of several miles from the facility, since sensitive receptors including schools, hospital, recreational areas, medical clinics, and residential land uses were noted within a 1-mile radius of the Calpine facility.

8.0 LIMITATIONS

As with all site assessments, the extent of information obtained is a function of client demands, time limitations, and budgetary constraints. Our conclusions and recommendations regarding the site are based on readily observable site conditions, review of readily available documents and data collected and/or reported by others. We are not responsible for the accuracy of information or data presented by others.

This report was prepared for the sole use of Fairfield Residential and Bingham McCutchen LLP. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location.

If you have any questions, please call and we shall be glad to discuss them with you.

Very truly yours,

TRC LOWNEY

Daniel W. Hernandez, C.I.H.
Senior Risk Assessor

Leonardo Alvarez, P.G., C.E.G.
Senior Project Geologist

THE AMERICAN BOARD OF INDUSTRIAL HYGIENE INCORPORATED CERTIFICATION NUMBER 4050 CP EXPIRES 6-1-2011 PENNSYLVANIA - 1960 DANIEL WILHELM HERNANDEZ, C.I.H.

LA:DH:AJB:cah

Copies: Addressee (2)

Figure 1. Vicinity Map
Figure 2. Land Use

Appendix A- EDR Database Report
Appendix B- Select Records from the San Jose and Milpitas Fire Departments
Appendix C- Hazard and Operability (HAZOP) Study

MV, 2189-1A Site Vicinity Risk Assessment.doc

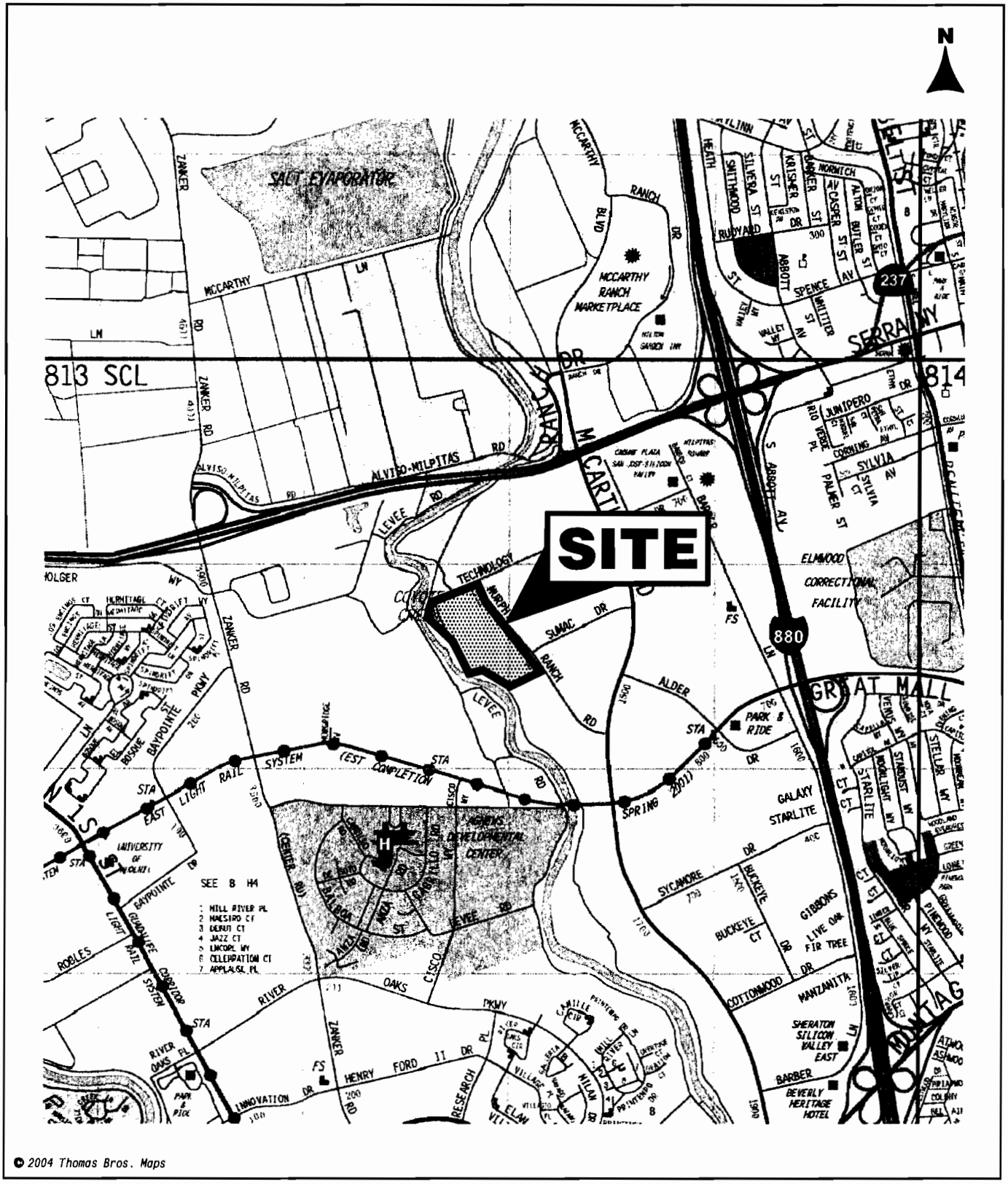
REFERENCES

FEMA, 1989. Handbook of Chemical Hazard Analysis Procedures. Federal Emergency Management Agency Publications Office, 500 C Street, S.W. Washington, D.C. 20472

Trinity Consultants, 1991. Users Manual for DEGADIS 2.1. Trinity Consultants Inc., 12801 North Central Expressway, Suite 1200, Dallas, Texas. 75243. September 1991

U.S. EPA, 1989. User's Guide for the DEGADIS 2.1 Dense Gas Dispersion Model. Office of Air Quality Planning and Standards Office of Air and Radiation. U.S. Environmental Protection Agency Research Triangle Park, NC 27711

Wind Rose Data from Station #23234 San Francisco International Airport 1984, 1992



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2/06*EB

VICINITY MAP

1001 MURPHY RANCH ROAD
Milpitas, California

TRC Lowney

FIGURE 1
2189-1A

N

LEGEND

- Zoning PD use: Industrial Park/Light Industrial
- Zoning PD use: Residential
- Zoning PD use: Open Space
- Zoning PD use: Commercial

0 1/4 mile

Base by USGS TerraServer, dated 2/04.

LAND USE
1001 MURPHY RANCH ROAD
Milpitas, California

TRC Lowney

FIGURE 2
2189-1A

2/06 EB

APPENDIX A

SELECT RECORDS FROM THE SAN JOSE AND MILPITAS FIRE DEPARTMENTS

COPY

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MILPITAS
FIRE PREVENTION

UNIFIED PROGRAM CONSOLIDATED FORM
FACILITY INFORMATION
BUSINESS ACTIVITIES

I. FACILITY IDENTIFICATION

FACILITY ID # *(Agency Use Only)*	1.	EPA ID # (Hazardous Waste Only)	2.
		CAD982434714	

BUSINESS NAME (Same as Facility Name or DBA - Doing Business As) 3.

Maxtor Corporation

II. ACTIVITIES DECLARATION

NOTE: If you check YES to any part of this list, please submit the Business Owner/Operator Identification page (OES Form 2730).

Does your facility...	If Yes, please complete these pages of the UPCF...	
A. HAZARDOUS MATERIALS		
Have on site (for any purpose) hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	☒ YES ☐ NO 4.	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731)
B. UNDERGROUND STORAGE TANKS (USTs)		
1. Own or operate underground storage tanks?	☐ YES ☒ NO 5.	UST FACILITY (Formerly SWRCB Form A) UST TANK (one page per tank) (Formerly Form B)
2. Intend to upgrade existing or install new USTs?	☐ YES ☒ NO 6.	UST FACILITY UST TANK (one per tank) UST INSTALLATION - CERTIFICATE OF COMPLIANCE (one page per tank) (Formerly Form C)
3. Need to report closing a UST?	☐ YES ☒ NO 7.	UST TANK (closure portion – one page per tank)
C. ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs)		
Own or operate ASTs above these thresholds: ---any tank capacity is greater than 660 gallons, or ---the total capacity for the facility is greater than 1,320 gallons?	☐ YES ☒ NO 8.	NO FORM REQUIRED TO CUPAs
D. HAZARDOUS WASTE		
1. Generate hazardous waste?	☒ YES ☐ NO 9.	EPA ID NUMBER – provide at the top of this page
2. Recycle more than 100 kg/month of excluded or exempted recyclable materials (per H&SC §25143.2)?	☐ YES ☒ NO 10.	RECYCLABLE MATERIALS REPORT (one per recycler)
3. Treat hazardous waste on site?	☐ YES ☒ NO 11.	ONSITE HAZARDOUS WASTE TREATMENT – FACILITY (Formerly DTSC Forms 1772) ONSITE HAZARDOUS WASTE TREATMENT – UNIT (one page per unit) (Formerly DTSC Forms 1772 A,B,C,D and L)
4. Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	☐ YES ☒ NO 12.	CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)
5. Consolidate hazardous waste generated at a remote site?	☐ YES ☒ NO 13.	REMOTE WASTE / CONSOLIDATION SITE ANNUAL NOTIFICATION (Formerly DTSC Form 1196)
6. Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned onsite?	☐ YES ☒ NO 14.	HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)

E. LOCAL REQUIREMENTS 15.

(You may also be required to provide additional information by your CUPA or local agency.)

Date: 12/10/2003

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Business Name: **Maxtor Corporation** (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: **Building 1, HDB Lab** (Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only)

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
FL	11204	ACETONE CAS No.: 67-64-1 ☐ EHS		99	☐	67-64-1	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	4 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute hea ☐ chronic he. ☐ radioactive
FL	11204	ISOPROPYL ALCOHOL CAS No.: 67-63-0 ☐ EHS		99	☐	67-63-0	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	8 Curies: (If radioactive)	4 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11204	VERTREL XF CAS No.: 138495-42-8 ☐ EHS	2,3-Dihydroperfluoropentane	99	☐	138495-42-8	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	5 Curies: (If radioactive)	1 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
OXY/ COR	11204	NITRIC ACID CAS No.: ☐ EHS	Nitric Acid	70%	☐	7697-37-2	☐ pure ☒ mixture ☐ solid ☒ liquid ☐ gas	4 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☒ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
COR	11204	SULFURIC ACID CAS No.: 7664-93-9 ☐ EHS	Sulfuric Acid	98	☐	7664-93-9	☒ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	2 Curies: (If radioactive)	1 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
—	11204	LIQUID NITROGEN CAS No.: 7727-37-9 ☐ EHS	Liquid Nitrogen	99	☐	7727-37-9	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	124 Curies: (If radioactive)	124 Days On Site: 365	62 Storage Container:* L	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☒ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive

*

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below:

Date: 12/10/2003

Non-Waste Hazardous Materials Inventory Statement

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Business Name: Maxtor Corporation (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: Building 1, HDB Lab (Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only)

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
FL	11204B	ACETONITRILE CAS No.: 75-05-8	Acetonitrile	99	☐	75-05-8	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	4 Curies: (If radioactive)	4 Days On Site: 365	1 Storage Container:* N	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute hea' ☐ chronic hi. ☐ radioactive
FL	11204B	HEXANE CAS No.: 110-54-3	Hexane	90	☐	110-54-3	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	4 Curies: (If radioactive)	4 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11204B	ISOPROPYL ALCOHOL CAS No.: 67-63-0	Isopropyl Alcohol	99	☐	67-63-0	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	2 Curies: (If radioactive)	1 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11204B	METHANOL CAS No.: 67-56-1	Methyl Alcohol	99	☐	67-56-1	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	2 Curies: (If radioactive)	1 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11204B	VERTREL XF CAS No.: 138495-42-8	2,3-Dihydroperfluoropentane	99	☐	138495-42-8	☒ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	4 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
CL	11204B	DECANE CAS No.: 124-18-5	Decane	99	☐	124-18-5	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	4 Curies: (If radioactive)	4 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive

* Storage Codes:

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

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Date: 12/10/2003

Non-Waste Hazardous Materials Inventory Statement

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Business Name: Maxtor Corporation
(Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: Building 1, FA Lab
(Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only)

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
FL	11904	ACETONE CAS No.: 67-64-1 ☐ EHS		99	☐	67-64-1	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	4 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute hea ☐ chronic h. ☐ radioactive
FL	11904	CYCLOHEXANE CAS No.: 110-82-7 ☐ EHS		100	☐	110-82-7	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	3 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* N	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11904	CYCLOHEXENE CAS No.: 110-83-8 ☐ EHS		100	☐	110-83-8	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	2 Curies: (If radioactive)	1 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11904	HEXANE CAS No.: 110-54-3 ☐ EHS		90	☐	110-54-3	☐ pure ☒ mixture ☐ solid ☒ liquid ☐ gas	5 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11904	ISOPROPYL ALCOHOL CAS No.: 67-63-0 ☐ EHS		99	☐	67-63-0	☒ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	5 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
FL	11904	METHANOL CAS No.: 67-56-1 ☐ EHS		99	☐	67-56-1	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	3 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* L	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive

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A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
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(Same as Facility Name or DBA)

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Chemical Location: Building 1, FA Lab
(Building/Storage Area)

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Facility ID # (Agency Use Only)

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FL	11904	VERTREL XF CAS No.: 138495-42-8 ☐ EHS	2,3-Dihydroperfluoropentane	99	☐	138495-42-8	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	4 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute heal ☐ chronic hea. ☐ radioactive
—	11904	AK-225 CAS No.: ☐ EHS	3,3-Dichloro-1,1,1,2,2-pentafluoropropane 1,3-Dichloro-1,1,2,2,3-pentafluoropropane	45 55	☐ ☐	422-56-0 507-55-1	☐ pure ☒ mixture ☐ solid ☒ liquid ☐ gas	3 Curies: (If radioactive)	2 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
—	11904	1,1,2-TRICHLORO-1,2,2-TRIFLUORO-ETHANE CAS No.: 76-13-1 ☐ EHS		100	☐	76-13-1	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	2 Curies: (If radioactive)	1 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
POISON	11904	METHYLENE CHLORIDE CAS No.: 75-09-2 ☐ EHS		100	☐	75-09-2	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	2 Curies: (If radioactive)	1 Days On Site: 365	1 Storage Container:* M	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
NFG	11906	HELIUM CAS No.: 7440-59-7 ☐ EHS		100	☐	7440-59-7	☒ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	1746 Curies: (If radioactive)	1746 Days On Site: 365	291 Storage Container:* L	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
—	11906	LIQUID NITROGEN CAS No.: 7727-37-9 ☐ EHS	Liquid Nitrogen	99	☐	7727-37-9	☒ pure ☐ mixture ☐ solid ☒ liquid ☐ gas	124 Curies: (If radioactive)	124 Days On Site: 365	62 Storage Container:* L	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☒ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive

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OXY	11906	COMPRESSED OXYGEN CAS No.: 7782-44-7 ☐ EHS		99	☐	7782-44-7	☒ pure ☐ mixture ☐ solid ☐ liquid ☒ gas	582 Curies: (If radioactive)	291 Days On Site: 365	291 Storage Container:* L	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☒ pressure release ☒ acute heal ☐ chronic he. ☐ radioactive
		CAS No.: ☐ EHS			☐		☐ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*	☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
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		CAS No.: ☐ EHS			☐		☐ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*	☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
		CAS No.: ☐ EHS			☐		☐ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*	☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
		CAS No.: ☐ EHS			☐		☐ pure ☐ mixture ☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*	☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive

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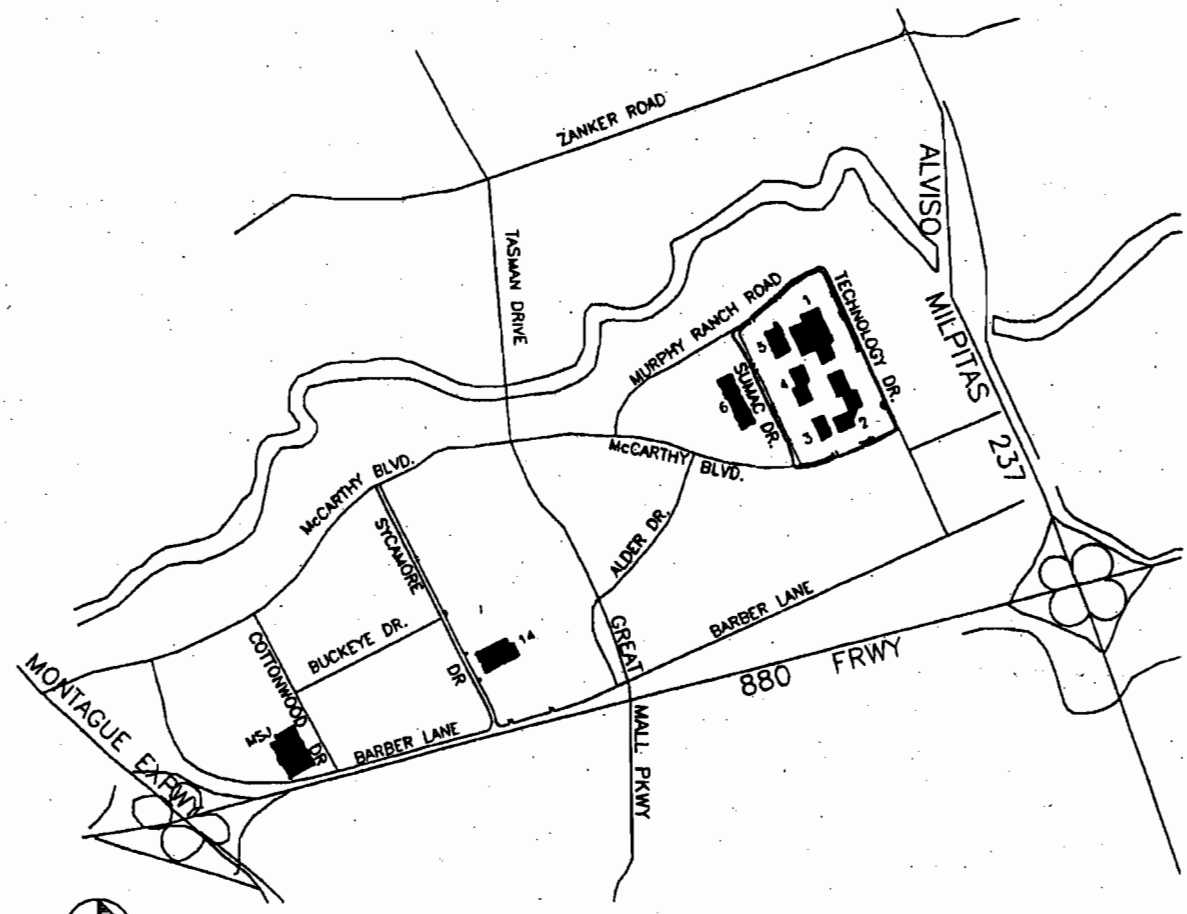
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below:

Maxtor®



Maxtor Corporation
Building Addresses

Campus

Building 1
1140 Technology Dr.
Milpitas, CA. 95035

Building 2
500 McCarthy Blvd.
Milpitas, CA. 95035

Building 3
900 Sumac Dr.
Milpitas, CA. 95035

Building 4
1000 Sumac Dr.
Milpitas, CA. 95035

Building 5
1101 Sumac Dr.
Milpitas, CA. 95035

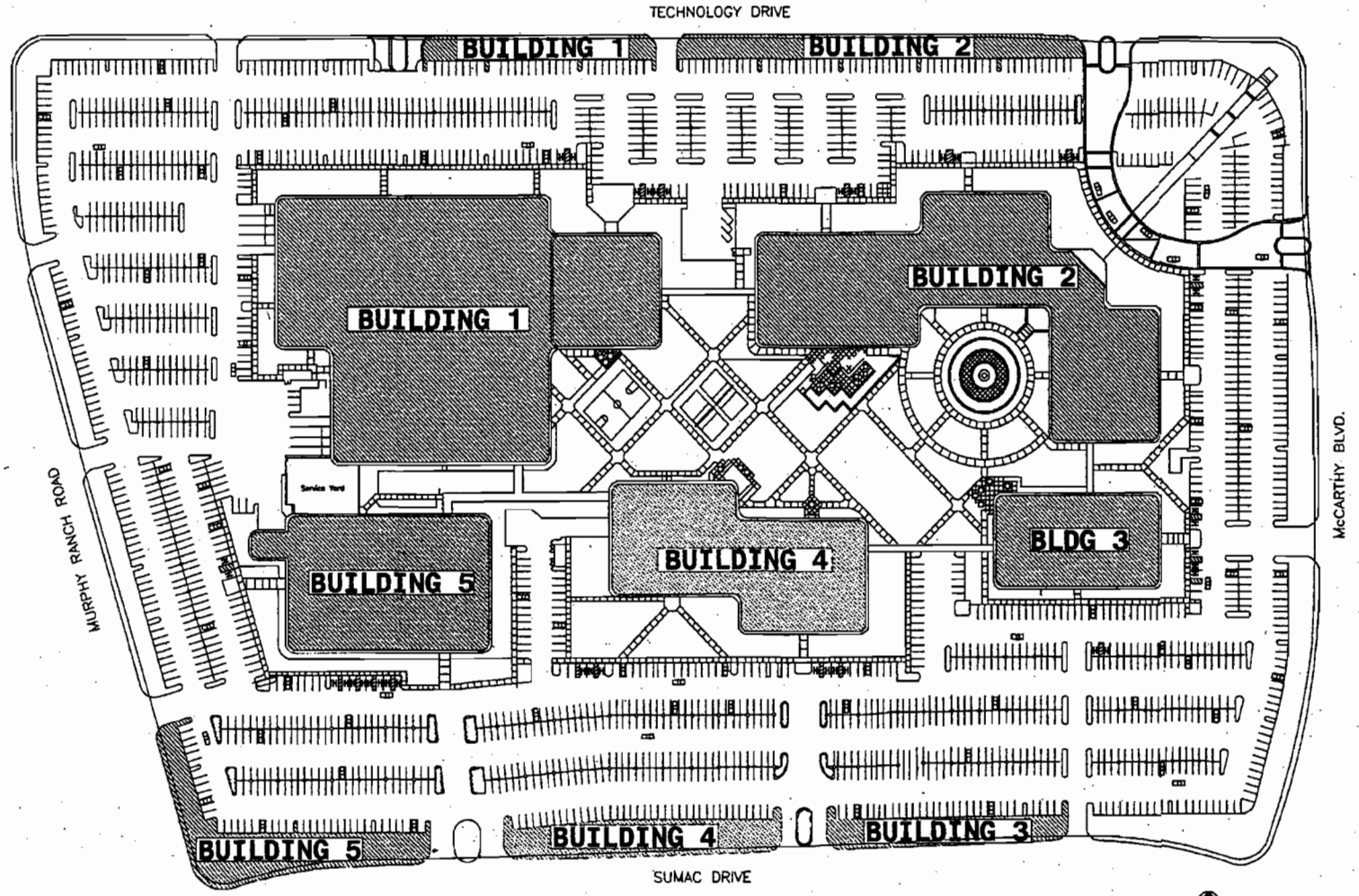
Building 6
601 McCarthy Blvd.
Milpitas, CA. 95035

Sycamore

Building 14
525 Sycamore Dr.
Milpitas, CA. 95035

Maxtor

MAIN CAMPUS
EVACUATION ASSEMBLY AREA



SCALE: NOT TO SCALE
DATE: 05/07/02

Emergency Response/Contingency Plan

(Hazardous Materials Business Plan Module)

Authority Cited: H&SC, Section 25504(b); Title 22, Div. 4.5, Ch. 12, Art. 3 CCR

All facilities that handle hazardous materials in specified quantities must have a written emergency response plan. In addition, facilities that generate 1,000 kilograms or more of hazardous waste per month, or accumulate more than 6,000 kilograms of hazardous waste on-site at any one time, must prepare a contingency plan. Because the requirements are similar, they have been combined in a single document, provided below, for your convenience. This plan is a required module of the Hazardous Materials Business Plan (HMBP). If you already have a plan that meets these requirements, you should not complete the blank plan, below, but you must include a copy of your existing plan as part of your HMBP.

This site-specific Emergency Response/Contingency Plan is the facility's plan for dealing with emergencies and shall be implemented immediately whenever there is a fire, explosion, or release of hazardous materials that could threaten human health and/or the environment. **At least one copy of the plan shall be maintained at the facility for use in the event of an emergency and for inspection by the local agency.** Within Santa Clara County, hospitals and police agencies have delegated receipt of these plans to the local agencies administering Hazardous Materials Business Plans, so additional copies need not be submitted. However, a copy of the plan and any revisions must be provided to any contractor, hospital, or agency with whom special (i.e. contractual) emergency services arrangements have been made *(see section 3, below)*.

1. Evacuation Plan:

a. The following alarm signal(s) will be used to begin evacuation of the facility *(check all that apply)*:

☐ Bells; ☒ Horns/Sirens; ☐ Verbal *(i.e. shouting)*; ☒ Other *(specify)* Strobe Light

b. ☒ Evacuation map is prominently displayed throughout the facility.

Note: A properly completed HMBP Site Plan satisfies contingency plan map requirements. This drawing (or any other drawing that shows primary and alternate evacuation routes, emergency exits, and primary and alternate staging areas) must be prominently posted throughout the facility in locations where it will be visible to employees and visitors.

2. a. Emergency Contacts*:

Fire/Police/Ambulance	Phone No. **911**
State Office of Emergency Services	Phone No. **(800) 852-7550**

b. Post-Incident Contacts*:

Fire Department Hazardous Materials Program	Phone No.: **(408)586-3365**
Santa Clara County Hazardous Materials Compliance Division	Phone No. **(408) 299-6930**
California EPA Department of Toxic Substances Control	Phone No. **(510) 540-3739**
Cal-OSHA Division of Occupational Safety and Health	Phone No. **(408) 452-7288**
Bay Area Air Quality Management District	Phone No. **(415) 771-6000**
Regional Water Quality Control Board	Phone No. **(510) 622-2300**

**** These telephone numbers are provided as a general aid to emergency notification. Be advised that additional agencies may be required to be notified.***

c. Emergency Resources:

Poison Control Center	Phone No. **(800) 876-4766**

Nearest Hospital: Name: Regional Medical Center of San Jose Phone No.: (408)258-5000

Address: 225 N. Jackson Avenue City: San Jose, CA

3. Arrangements With Emergency Responders:

If you have made special (i.e. contractual) arrangements with any police department, fire department, hospital, contractor, or State or local emergency response team to coordinate emergency services, describe those arrangements below:

_____

_____

_____

4. Emergency Procedures:

Emergency Coordinator Responsibilities:

a. Whenever there is an imminent or actual emergency situation such as a explosion, fire, or release, the emergency coordinator *(or his/her designee when the emergency coordinator is on call)* shall:

   i. Identify the character, exact source, amount, and areal extent of any released hazardous materials.

   ii. Assess possible hazards to human health or the environment that may result from the explosion, fire, or release. This assessment must consider both direct and indirect effects *(e.g. the effects of any toxic, irritating, or asphyxiating gases that are generated, the effects of any hazardous surface water run-off from water or chemical agents used to control fire, etc.).*

   iii. Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel.

   iv. Notify appropriate local authorities *(i.e. call 911).*

   v. Notify the State Office of Emergency Services at 1-800-852-7550.

   vi. Monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment shut down in response to the incident.

   vii. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility.

b. Before facility operations are resumed in areas of the facility affected by the incident, the emergency coordinator shall:

   i. Provide for proper storage and disposal of recovered waste, contaminated soil or surface water, or any other material that results from a explosion, fire, or release at the facility.

   ii. Ensure that no material that is incompatible with the released material is transferred, stored, or disposed of in areas of the facility affected by the incident until cleanup procedures are completed.

   iii. Ensure that all emergency equipment is cleaned, fit for its intended use, and available for use.

   iv. Notify the California Environmental Protection Agency's Department of Toxic Substances Control, the County of Santa Clara's Hazardous Materials Compliance Division, and the local fire department's hazardous materials program that the facility is in compliance with requirements b-i and b-ii, above.

Responsibilities of Other Personnel:

On a separate page, list any emergency response functions not covered in the "Emergency Coordinator Responsibilities" section, above. Next to each function, list the job title or name of each person responsible for performing the function. Number the page(s) appropriately.

5. Post-Incident Reporting/Recording:

The time, date, and details of any hazardous materials incident that requires implementation of this plan shall be noted in the facility's operating record.

Within 15 days of any hazardous materials emergency incident or threatened hazardous materials emergency incident that triggers implementation of this plan, a written Emergency Incident Report, including, but not limited to a description of the incident and the facility's response to the incident, must be submitted to the California Environmental Protection Agency's Department of Toxic Substances Control, the County of Santa Clara's Hazardous Materials Compliance Division, and the local fire department's hazardous materials program. The report shall include:

a. Name, address, and telephone number of the facility's owner/operator;
b. Name, address, and telephone number of the facility;
c. Date, time, and type of incident *(e.g. fire, explosion, etc.)*;
d. Name and quantity of material(s) involved;
e. The extent of injuries, if any;
f. An assessment of actual or potential hazards to human health or the environment, where this is applicable;
g. Estimated quantity and disposition of recovered material that resulted from the incident;
h. Cause(es) of the incident;
i. Actions taken in response to the incident;
j. Administrative or engineering controls designed to prevent such incidents in the future.

INCIDENT COMMAND STAFF – RESPONSIBILITIES:

DIRECTOR, FACILITIES AND SITE SERVICES:

- Acts as the Incident Commanders during emergencies.
- Provides overall direction during emergencies.
- Facilitates press release information.
- Serves as a liaison with senior management and community.
- Insures that Incident Command Staff trains subordinate staff in emergency response procedures.

SENIOR MANAGER, ENGINEERING/BUSINESS OPERATIONS:

- Coordinates activities of the Facilities Staff during emergencies.
- Develops and insures the Recovery Team is available during and after the emergency.
- Coordinates Environmental Health & Safety activities during emergencies.
- Provides guidance to Incident Command Staff during emergencies.
- Insures that Emergency Response Staff receives training in emergency response and mitigation.
- Develops training for the Emergency Response Team.
- Acts as Emergency Response Team Incident Commander.
- Coordinates activities of Health Service and MERT during emergencies.

SECURITY MANAGER:

- Maintains communications during emergencies.
- Coordinates Security activities during emergencies.

HUMAN RESOURCES:

- Coordinates personnel activity and reporting during emergencies.

FACILITIES ENGINEERING MANAGER:

- Identifies potential recovery issues.
- Initiates recovery surveys.

EQUIPMENT TECHNOLOGY MANAGER:

- Assess damage to production equipment and tooling
- Finds sources for replacement equipment (new and used)
- Runs scenarios to determine the best ways to utilize available equipment

6. Emergency Equipment:

22 CCR §66265.52(e) [as referenced by 22 CCR §66262.34(a)(4)] and the Hazardous Materials Storage Ordinance require that emergency equipment at the facility be listed. Completion of the following Emergency Equipment Inventory Table meets this requirement.

EMERGENCY EQUIPMENT INVENTORY TABLE

1. Equipment Category	2. Equipment Type	3. Locations *	4. Description**
Personal Protective Equipment, Safety Equipment, and First Aid Equipment	☐ Cartridge Respirators		
	☐ Chemical Monitoring Equipment *(describe)*		
	☐ Chemical Protective Aprons/Coats		
	☐ Chemical Protective Boots		
	☐ Chemical Protective Gloves		
	☐ Chemical Protective Suits *(describe)*		
	☐ Face Shields		
	☒ First Aid Kits/Stations *(describe)*	Coffee Stations	General Office/Light Industrial
	☐ Hard Hats		
	☒ Plumbed Eye Wash Stations	Chemical Labs	
	☐ Portable Eye Wash Kits *(i.e. bottle type)*		
	☐ Respirator Cartridges *(describe)*		
	☒ Safety Glasses/Splash Goggles	Chemical Labs	
	☒ Safety Showers	Chemical Labs	
	☐ Self-Contained Breathing Apparatuses (SCBA)		
	☐ Other *(describe)*		
Fire Extinguishing Systems	☒ Automatic Fire Sprinkler Systems	Building Wide	
	☒ Fire Alarm Boxes/Stations	Building Exits	
	☒ Fire Extinguisher Systems *(describe)*	Every 72 ft.	Dry Chemical (ABC Type)
	☐ Other *(describe)*		
Spill Control Equipment and Decontamination Equipment	☒ Absorbents *(describe)*	Chemical Labs	
	☐ Berms/Dikes *(describe)*		
	☐ Decontamination Equipment *(describe)*		
	☐ Emergency Tanks *(describe)*		
	☒ Exhaust Hoods	Chemical Labs	
	☐ Gas Cylinder Leak Repair Kits *(describe)*		
	☒ Neutralizers *(describe)*	Chemical Labs	
	☒ Overpack Drums	Chemical Labs	
	☐ Sumps *(describe)*		
	☐ Other *(describe)*		
Communications and Alarm Systems	☐ Chemical Alarms *(describe)*		
	☐ Intercoms/ PA Systems		
	☒ Portable Radios	ERT/Facility/Sec.	
	☒ Telephones	Building Wide	
	☐ Underground Tank Leak Detection Monitors		
	☐ Other *(describe)*		
Additional Equipment *(Use Additional Pages if Needed.)*	☐		
	☐		
	☐		
	☐		
	☐		
	☐		

* *Use the map and grid numbers from the Storage Map prepared earlier for your HMBP.*

** *Describe the equipment and its capabilities. If applicable, specify any testing/maintenance procedures/intervals. Attach additional pages, numbered appropriately, if needed.*

All facilities that handle hazardous materials must have a written employee training plan. This plan is a required module of the Hazardous Materials Business Plan (HMBP). A blank plan has been provided below for you to complete and submit if you do not already have such a plan. If you already have a training plan, you are not required to complete the blank plan, below, but you must include a copy of your existing plan as part of your HMBP.

Check all boxes that apply. *[Note: Items marked with an asterisk (*) are required.]*:

1. **Personnel** are trained in the following procedures:

☒	Internal alarm/notification *
☒	Evacuation/re-entry procedures & assembly point locations*
☒	Emergency incident reporting
☒	External emergency response organization notification
☒	Location(s) and contents of Emergency Response/Contingency Plan
☒	Facility evacuation drills, that are conducted at least *(specify)* **once a year** *(e.g. "Quarterly", etc.)*

2. **Chemical Handlers** are additionally trained in the following:

☒	Safe methods for handling and storage of hazardous materials *
☒	Location(s) and proper use of fire and spill control equipment
☒	Spill procedures/emergency procedures
☒	Proper use of personal protective equipment *
☒	Specific hazard(s) of each chemical to which they may be exposed, including routes of exposure *(i.e. inhalation, ingestion, absorption)* *
☐	**Hazardous Waste Handlers/Managers** are trained in all aspects of hazardous waste management specific to their job duties *(e.g. container accumulation time requirements, labeling requirements, storage area inspection requirements, manifesting requirements, etc.)* *

3. **Emergency Response Team Members** are capable of and engaged in the following:

☒	Personnel rescue procedures
☐	Shutdown of operations
☐	Liaison with responding agencies
☒	Use, maintenance, and replacement of emergency response equipment
☒	Refresher training, which is provided at least annually *
☐	Emergency response drills, which are conducted at least *(specify)* **twice a month** *(e.g. "Quarterly", etc.)*

Recordkeeping

(Hazardous Materials Business Plan Module)

All facilities that handle hazardous materials must maintain records associated with their management. A summary of your recordkeeping procedures is a required module of the Hazardous Materials Business Plan (HMBP). A blank summary has been provided below for you to complete and submit if you do not already have such a document. If you already have a brief written description of your hazardous materials recordkeeping systems that addresses all subjects covered below, you are not required to complete this page, but you must include a copy of your existing document as part of your HMBP.

Check all boxes that apply. The following records are maintained at the facility. *[Note: Items marked with an asterisk (*) are required.]*:

☒	Current employees' training records *(to be retained until closure of the facility)* *
☒	Former employees' training records *(to be retained at least three years after termination of employment)* *
☒	Training Program(s) *(i.e. written description of introductory and continuing training)* *
☐	Current copy of this Emergency Response/Contingency Plan *
☐	Record of recordable/reportable hazardous material/waste releases *
☒	Record of hazardous material/waste storage area inspections *
☐	Record of hazardous waste tank daily inspections *
☒	Description and documentation of facility emergency response drills

Note: The above list of records does not necessarily identify every type of record required to be maintained by the facility.

A copy of the Inspection Check Sheet(s) or Log(s) used in conjunction with required routine self-inspections of your facility must be submitted with your HMBP. *(Exception: Available from your local agency is a Hazardous Materials/Waste Storage Area Inspection Form that you may use if you do not already have your own form. If you use the example provided, you do not need to attach a copy.)*

Check the appropriate box:

☐	We will use the "Hazardous Materials/Waste Storage Area Inspection Form" (Document No. UN-023) to document inspections.
☒	We will use our own documents to record inspections. *(A blank copy of each document used must be attached to this HMBP.)*

Aboveground Separation, Containment, and Monitoring Plan

(Appendix to Hazardous Materials Business Plan and Registration Form)

Complete one column for each aboveground storage area shown on the Hazardous Materials Business Plan Storage Map(s). Write the appropriate location code in the box provided at the top of each column, then moving down the column, check all boxes which apply to that location. Make additional copies of this page if needed.

Location	HDB Lab	FA Lab	CCE Lab	Chem Shed	
Storage Type	☒ Inside building ☐ Outside storage shed ☐ Outdoors	☒ Inside building ☐ Outside storage shed ☐ Outdoors	☒ Inside building ☐ Outside storage shed ☐ Outdoors	☐ Inside building ☐ Outside storage shed ☒ Outdoors	☐ Inside building ☐ Outside storage shed ☐ Outdoors
Primary Containment	☒ Original containers ☐ Safety cans ☐ Inside machinery ☐ Drums/barrels ☐ Pressure vessels ☐ Bulk tanks ☐ Aboveground piping ☐ Other	☒ Original containers ☐ Safety cans ☐ Inside machinery ☐ Drums/barrels ☐ Pressure vessels ☐ Bulk tanks ☐ Aboveground piping ☐ Other	☒ Original containers ☐ Safety cans ☐ Inside machinery ☐ Drums/barrels ☐ Pressure vessels ☐ Bulk tanks ☐ Aboveground piping ☐ Other	☒ Original containers ☐ Safety cans ☐ Inside machinery ☐ Drums/barrels ☐ Pressure vessels ☐ Bulk tanks ☐ Aboveground piping ☐ Other	☐ Original containers ☐ Safety cans ☐ Inside machinery ☐ Drums/barrels ☐ Pressure vessels ☐ Bulk tanks ☐ Aboveground piping ☐ Other
Secondary Containment	☒ Approved cabinets ☐ Secondary drum ☐ Tray ☐ Bermed & coated floor ☐ Tank vault ☐ Secondary piping or piping trench ☐ Other	☒ Approved cabinets ☐ Secondary drum ☐ Tray ☐ Bermed & coated floor ☐ Tank vault ☐ Secondary piping or piping trench ☐ Other	☒ Approved cabinets ☐ Secondary drum ☐ Tray ☐ Bermed & coated floor ☐ Tank vault ☐ Secondary piping or piping trench ☐ Other	☒ Approved cabinets ☐ Secondary drum ☐ Tray ☒ Bermed & coated floor ☐ Tank vault ☐ Secondary piping or piping trench ☐ Other	☐ Approved cabinets ☐ Secondary drum ☐ Tray ☐ Bermed & coated floor ☐ Tank vault ☐ Secondary piping or piping trench ☐ Other
Separation	☒ All materials compatible ☐ One-hour separation wall/partition ☐ Separation by at least 20 feet ☐ Approved cabinets ☐ Other	☒ All materials compatible ☐ One-hour separation wall/partition ☐ Separation by at least 20 feet ☐ Approved cabinets ☐ Other	☒ All materials compatible ☐ One-hour separation wall/partition ☐ Separation by at least 20 feet ☐ Approved cabinets ☐ Other	☒ All materials compatible ☐ One-hour separation wall/partition ☐ Separation by at least 20 feet ☐ Approved cabinets ☐ Other	☐ All materials compatible ☐ One-hour separation wall/partition ☐ Separation by at least 20 feet ☐ Approved cabinets ☐ Other
Monitoring Type	☒ Visual ☐ Automatic sensors ☐ Other	☒ Visual ☐ Automatic sensors ☐ Other	☒ Visual ☐ Automatic sensors ☐ Other	☒ Visual ☐ Automatic sensors ☐ Other	☐ Visual ☐ Automatic sensors ☐ Other
Monitoring Frequency	☐ Daily ☒ Weekly ☐ Monthly ☐ Continuous ☐ Other	☐ Daily ☒ Weekly ☐ Monthly ☐ Continuous ☐ Other	☐ Daily ☒ Weekly ☐ Monthly ☐ Continuous ☐ Other	☐ Daily ☐ Weekly ☒ Monthly ☐ Continuous ☐ Other	☐ Daily ☐ Weekly ☐ Monthly ☐ Continuous ☐ Other

In the space provided below, describe the location, type, manufacturer's specifications (if applicable) and suitability of any monitoring methods used other than visual monitoring. Attach additional pages if needed:

HAZARDOUS MATERIALS BUSINESS PLAN CERTIFICATION FORM

For Use by Unidocs Member Agencies or where approved by your Local Jurisdiction
Authority Cited: H&SC §25503.3(c)

To: Agency Name: Milpitas Fire Department, Bureau of Fire Prevention

Agency Mailing Address: 777 South Main Street

Milpitas, CA 95035

Pursuant to Section 25503.3(c) of California Health and Safety Code (H&SC), the Hazardous Materials Business Plan (HMBP) certification described below is hereby submitted for the following facility:

Facility Name: Maxtor Corporation

Facility Street Address: 1140 Technology Drive, Building 1 City: Milpitas

Date of Current HMBP: 12/10/2003.

I certify that: *(Check the appropriate box.)*

☐ I have personally reviewed the Hazardous Materials Business Plan currently on file with your agency and certify that the HMBP is complete and accurate. *(See bottom of page for details.)* **or**

☒ Revisions to the Hazardous Materials Business Plan are necessary. The HMBP as revised is being implemented. A copy of the revisions is enclosed with this Certification.

OWNER/OPERATOR CERTIFICATION: I hereby certify under penalty of law that, based upon my inquiry of those individuals responsible for obtaining the information reported above, I believe that the submitted information is true, accurate, and complete. I understand that a revised HMBP must be submitted within 30 days of any change in this facility's storage or handling of hazardous materials which would require updating of the HMBP.

Name of Owner/Operator *(Print)*: Premie Pascual Title: Sr. EH&S/Security Manager

Signature of Owner/Operator: _____ Date: 12 / 10 / 03.

By checking the upper box on this form, you are certifying that:

- The information contained in the HMBP most recently submitted is complete, accurate, and up-to-date; **and**
- There has been no change in the quantity of any hazardous material as reported in the most recently submitted Hazardous Materials Inventory forms; **and**
- The facility has not begun handling any hazardous material in a HMBP reportable quantity which is not currently listed in the Hazardous Materials Inventory; **and**
- The HMBP most recently submitted HMBP contains the information required by Section 11022 of Title 42 of the United States Code; **and**
- There have been no substantial changes in the facility's hazardous materials operations which would require revision of the current HMBP.

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

BUSINESS NAME: MILPITAS - MURPHY RANCH PUMP STA.		**DATE:** 4/12/2004	**PAGE:** 1 of 1
LOCATION: A	**EPCRA CONFIDENTIAL:** NO	**TRADE SECRET:** NO	**FACILITY ID#:** 43-011-871008

1. Hazard Class	2. Grid Code	3. Common Name	4. Hazardous Components	5. Phys. State	6. Quantities	7. Units	8. Storage Codes	9. Haz. Categories
3	Map: NONE Grid: NONE	DIESEL CAS#: 68334-30-5 EHS: NO	COMPONENT NAME / EHS / % / CAS# DIESEL / N / 99 / 68334-30-5 *NAPHTHALENE / N / 1 / 91-20-3	LIQUID (PURE)	MAX: 2000 LARGEST: 2000 AVG: 1500 CURIES: 0 DAYS: 365 CONTAINERS: A	GAL	Pressure: AMBIENT Temp: AMBIENT	FIRE ACUTE HEALTH

STORAGE CONTAINER CODES

A = Aboveground Tank, B = Belowground Tank, C = Tank Inside Building, D = Steel Drum, E = Plastic/Nonmetallic Drum, F = Can, G = Carboy, H = Silo, I = Fiber Drum, J = Bag, K = Box, L = Cylinder, M = Glass Bottle or Jug, N = Plastic Bottle or Jug, O = Tote Bin, P = Tank Wagon, Q = Rail Car, R = Other

OTHER ABBREVIATIONS

MAX = Max. Amount Daily, AVG = Avg. Amount Daily, DAYS = Days On Site, LARGEST = Largest Container, CURIES = Curies (in mCi), CONTAINERS = Storage Containers

If EPCRA, Please Sign Here: _____

Back to Site Menu

Pump Station
801 McCarthy Ranch Rd

Emergency Response/Contingency Plan

(Hazardous Materials Business Plan Module)

Authority Cited: HSC, Section 25504(b); Title 22, Div. 4.5, Ch. 12, Art. 3 CCR

All facilities that handle hazardous materials in specified quantities must have a written emergency response plan. In addition, facilities that generate 1,000 kilograms or more of hazardous waste per month, or accumulate more than 6,000 kilograms of hazardous waste on-site at any one time, must prepare a contingency plan. Because the requirements are similar, they have been combined in a single document, provided below, for your convenience. This plan is a required module of the Hazardous Materials Business Plan (HMBP). **If you already have a plan that meets these requirements, you should not complete the blank plan, below, but you must include a copy of your existing plan as part of your HMBP.**

This site-specific Emergency Response/Contingency Plan is the facility's plan for dealing with emergencies and shall be implemented immediately whenever there is a fire, explosion, or release of hazardous materials that could threaten human health and/or the environment. **At least one copy of the plan shall be maintained at the facility for use in the event of an emergency and for inspection by the local agency.** Within Santa Clara County, hospitals and police agencies have delegated receipt of these plans to the local agencies administering Hazardous Materials Business Plans, so additional copies need not be submitted. However, a copy of the plan and any revisions must be provided to any contractor, hospital, or agency with whom special (i.e. contractual) emergency services arrangements have been made *(see section 3, below)*.

1. Evacuation Plan:

a. The following alarm signal(s) will be used to begin evacuation of the facility *(check all that apply)*:

☐ Bells; ☐ Horns/Sirens; ☒ Verbal *(i.e. shouting)*; ☐ Other *(specify)* _____

b. ☐ Evacuation map is prominently displayed throughout the facility.

Note: A properly completed HMBP Site Plan satisfies contingency plan map requirements. This drawing (or any other drawing that shows primary and alternate evacuation routes, emergency exits, and primary and alternate staging areas) must be prominently posted throughout the facility in locations where it will be visible to employees and visitors.

2. a. Emergency Contacts*:

Fire/Police/Ambulance	Phone No. 911
State Office of Emergency Services	Phone No. **(800) 852-7550**

b. Post-Incident Contacts*:

Fire Department Hazardous Materials Program	Phone No.: (____) __586-3365_____
Santa Clara County Hazardous Materials Compliance Division	Phone No. **(408) 918-3400**
California EPA Department of Toxic Substances Control	Phone No. **(510) 540-3739**
Cal-OSHA Division of Occupational Safety and Health	Phone No. **(408) 452-7288**
Air Quality Management District	Phone No. **(415) 771-6000**
Regional Water Quality Control Board	Phone No. **(510) 622-2300**

** These telephone numbers are provided as a general aid to emergency notification. Be advised that additional agencies may be required to be notified.*

c. Emergency Resources:

Poison Control Center	Phone No. **(800) 876-4766**
Nearest Hospital: Name: **Regional Med Center**_____	Phone No.: (____) _259-5000_____
Address: **225 N Jackson**	City: **San Jose**

3. Arrangements With Emergency Responders:

If you have made special (i.e. contractual) arrangements with any police department, fire department, hospital, contractor, or State or local emergency response team to coordinate emergency services, describe those arrangements below:

_____

7. Emergency Equipment:

22 CCR §66265.52(e) [as referenced by 22 CCR §66262.34(a)(4)] and the Hazardous Materials Storage Ordinance require that emergency equipment at the facility be listed. Completion of the following Emergency Equipment Inventory Table meets this requirement.

EMERGENCY EQUIPMENT INVENTORY TABLE

1. Equipment Category	2. Equipment Type	3. Locations *	4. Description**
Personal Protective Equipment, Safety Equipment, and First Aid Equipment	☐ Cartridge Respirators		
	☐ Chemical Monitoring Equipment *(describe)*		
	☐ Chemical Protective Aprons/Coats		
	☐ Chemical Protective Boots		
	☒ Chemical Protective Gloves		
	☐ Chemical Protective Suits *(describe)*		
	☐ Face Shields		
	☒ First Aid Kits/Stations *(describe)*		
	☒ Hard Hats		
	☐ Plumbed Eye Wash Stations		
	☐ Portable Eye Wash Kits *(i.e. bottle type)*		
	☐ Respirator Cartridges *(describe)*		
	☒ Safety Glasses/Splash Goggles		
	☐ Safety Showers		
	☐ Self-Contained Breathing Apparatuses (SCBA)		
	☐ Other *(describe)*		
Fire Extinguishing Systems	☐ Automatic Fire Sprinkler Systems		
	☐ Fire Alarm Boxes/Stations		
	☐ Fire Extinguisher Systems *(describe)*		
	☐ Other *(describe)*		
Spill Control Equipment and Decontamination Equipment	☒ Absorbents *(describe)*		
	☐ Berms/Dikes *(describe)*		
	☐ Decontamination Equipment *(describe)*		
	☐ Emergency Tanks *(describe)*		
	☐ Exhaust Hoods		
	☐ Gas Cylinder Leak Repair Kits *(describe)*		
	☒ Neutralizers *(describe)*		
	☒ Overpack Drums		
	☐ Sumps *(describe)*		
	☐ Other *(describe)*		
Communications and Alarm Systems	☐ Chemical Alarms *(describe)*		
	☐ Intercoms/ PA Systems		
	☒ Portable Radios		
	☒ Telephones		
	☐ Underground Tank Leak Detection Monitors		
	☐ Other *(describe)*		
Additional Equipment *(Use Additional Pages if Needed.)*	☐		
	☐		
	☐		
	☐		
	☐		
	☐		

* *Use the map and grid numbers from the Storage Map prepared earlier for your HMBP.*

** *Describe the equipment and its capabilities. If applicable, specify any testing/maintenance procedures/intervals. Attach additional pages, numbered appropriately, if needed.*

Employee Training Plan

(Hazardous Materials Business Plan Module)

Authority Cited: HSC, Section 25504(c); Title 22, Div. 4.5, Ch. 12, Art. 3 CCR

All facilities that handle hazardous materials must have a written employee training plan. This plan is a required module of the Hazardous Materials Business Plan (HMBP). A blank plan has been provided below for you to complete and submit if you do not already have such a plan. **If you already have a brief written description of your training program that addresses all subjects covered below, you are not required to complete the blank plan, below, but you must include a copy of your existing document as part of your HMBP.**

Check all boxes that apply. *[Note: Items marked with an asterisk (*) are required.]*:

1. **Personnel** are trained in the following procedures:

☒	Internal alarm/notification *
☒	Evacuation/re-entry procedures & assembly point locations*
☐	Emergency incident reporting
☐	External emergency response organization notification
☐	Location(s) and contents of Emergency Response/Contingency Plan
☐	Facility evacuation drills, that are conducted at least *(specify)* _____ *(e.g. "Quarterly", etc.)*

2. **Chemical Handlers** are additionally trained in the following:

☒	Safe methods for handling and storage of hazardous materials *
☐	Location(s) and proper use of fire and spill control equipment
☐	Spill procedures/emergency procedures
☒	Proper use of personal protective equipment *
☐	Specific hazard(s) of each chemical to which they may be exposed, including routes of exposure *(i.e. inhalation, ingestion, absorption)* *
☐	**Hazardous Waste Handlers/Managers** are trained in all aspects of hazardous waste management specific to their job duties *(e.g. container accumulation time requirements, labeling requirements, storage area inspection requirements, manifesting requirements, etc.)* *

3. **Emergency Response Team Members** are capable of and engaged in the following:

☐	Personnel rescue procedures
☐	Shutdown of operations
☐	Liaison with responding agencies
☐	Use, maintenance, and replacement of emergency response equipment
☐	Refresher training, which is provided at least annually *
☐	Emergency response drills, which are conducted at least *(specify)* _____ *(e.g. "Quarterly", etc.)*

Record Keeping

(Hazardous Materials Business Plan Module)

All facilities that handle hazardous materials must maintain records associated with their management. A summary of your recordkeeping procedures is a required module of the Hazardous Materials Business Plan (HMBP). A blank summary has been provided below for you to complete and submit if you do not already have such a document. **If you already have a brief written description of your hazardous materials recordkeeping systems that addresses all subjects covered below, you are not required to complete this page, but you must include a copy of your existing document as part of your HMBP.**

Check all boxes that apply. The following records are maintained at the facility. *[Note: Items marked with an asterisk (*) are required.]*:

☒	Current employees' training records *(to be retained until closure of the facility)* *
☒	Former employees' training records *(to be retained at least three years after termination of employment)* *
☒	Training Program(s) *(i.e. written description of introductory and continuing training)* *
☒	Current copy of this Emergency Response/Contingency Plan *
☒	Record of recordable/reportable hazardous material/waste releases *
☐	Record of hazardous material/waste storage area inspections *
☒	Record of hazardous waste tank daily inspections *
☐	Description and documentation of facility emergency response drills

Note: The above list of records does not necessarily identify every type of record required to be maintained by the facility.

A copy of the Inspection Check Sheet(s) or Log(s) used in conjunction with required routine self-inspections of your facility must be submitted with your HMBP. *(Exception: Available from your local agency is a Hazardous Materials/Waste Storage Area Inspection Form that you may use if you do not already have your own form. If you use the example provided, you do not need to attach a copy.)*

Check the appropriate box:

☒	We will use the Unidocs "Hazardous Materials/Waste Storage Area Inspection Form" to document inspections.
☐	We will use our own documents to record inspections. ***(A blank copy of each document used must be attached to this HMBP.)***

UNIFIED PROGRAM CONSOLIDATED FORM
FACILITY INFORMATION

BUSINESS ACTIVITIES

I. FACILITY IDENTIFICATION

FACILITY ID # *(Agency Use Only)*	4 3 0 6 0 4 0 8 7 6 7	1.	EPA ID # (Hazardous Waste Only) CAL000275218	2.

BUSINESS NAME (Same as Facility Name or DBA - Doing Business As) 3.

Los Esteros Critical Energy Facility

II. ACTIVITIES DECLARATION

NOTE: If you check YES to any part of this list, please submit the Business Owner/Operator Identification page (OES Form 2730).

Does your facility...	If Yes, please complete these pages of the UPCF...	
A. HAZARDOUS MATERIALS		
Have on site (for any purpose) hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	☒ YES ☐ NO 4.	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731)
B. UNDERGROUND STORAGE TANKS (USTs)		
1. Own or operate underground storage tanks?	☐ YES ☒ NO 5.	UST FACILITY (Formerly SWRCB Form A) UST TANK (one page per tank) (Formerly Form B)
2. Intend to upgrade existing or install new USTs?	☐ YES ☒ NO 6.	UST FACILITY UST TANK (one per tank) UST INSTALLATION - CERTIFICATE OF COMPLIANCE (one page per tank) (Formerly Form C)
3. Need to report closing a UST?	☐ YES ☒ NO 7.	UST TANK (closure portion – one page per tank)
C. ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs)		
Own or operate ASTs above these thresholds: ---any tank capacity is greater than 660 gallons, or ---the total capacity for the facility is greater than 1,320 gallons?	☒ YES ☐ NO 8.	NO FORM REQUIRED TO CUPAs
D. HAZARDOUS WASTE		
1. Generate hazardous waste?	☒ YES ☐ NO 9.	EPA ID NUMBER – provide at the top of this page
2. Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC §25143.2)?	☐ YES ☒ NO 10.	RECYCLABLE MATERIALS REPORT (one per recycler)
3. Treat hazardous waste on site?	☐ YES ☒ NO 11.	ONSITE HAZARDOUS WASTE TREATMENT – FACILITY (Formerly DTSC Forms 1772) ONSITE HAZARDOUS WASTE TREATMENT – UNIT (one page per unit) (Formerly DTSC Forms 1772 A,B,C,D and L)
4. Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	☐ YES ☒ NO 12.	CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232)
5. Consolidate hazardous waste generated at a remote site?	☐ YES ☒ NO 13.	REMOTE WASTE / CONSOLIDATION SITE ANNUAL NOTIFICATION (Formerly DTSC Form 1196)
6. Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned onsite?	☐ YES ☒ NO 14.	HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)

E. LOCAL REQUIREMENTS 15.

(You may also be required to provide additional information by your CUPA or local agency.)

APPROVED FOR COMPLIANCE WITH HAZ MAT REQUIREMENTS.

MB DATE 11/26/03

UNIFIED PROGRAM CONSOLIDATED FORM
FACILITY INFORMATION

BUSINESS OWNER/OPERATOR IDENTIFICATION

I. IDENTIFICATION

FACILITY ID # (Agency Use Only) 43 0060 408767 1.	BEGINNING DATE 100. 11/1/03	ENDING DATE 101. 10/31/04	
BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3 Los Esteros Critical Energy Facility		BUSINESS PHONE 102 (408) 635-1300	
BUSINESS SITE ADDRESS 103. 800 Thomas Foon Chew Way			
CITY 104. San Jose	CA	ZIP CODE 105. 95134	
DUN & BRADSTREET 106.		SIC CODE (4 digit #) 107. 4911	
COUNTY 108. Santa Clara			
BUSINESS OPERATOR NAME 109. Calpine Corporation		BUSINESS OPERATOR PHONE 110. (408) 635-1300	

II. BUSINESS OWNER

OWNER NAME 111. Calpine Corporation		OWNER PHONE 112. (925)479-6600
OWNER MAILING ADDRESS 113. 4160 Dublin Blvd		
CITY 114 Dublin	STATE 115. CA	ZIP CODE 116. 94568

III. ENVIRONMENTAL CONTACT

CONTACT NAME 117. Dana Petrin, Compliance Manager, South Bay Projects		CONTACT PHONE 118. (408) 592-7915
CONTACT MAILING ADDRESS 119. P.O. Box 1764		
CITY 120 Gilroy	STATE 121. CA	ZIP CODE 122 95021

IV. EMERGENCY CONTACTS

-PRIMARY-	-SECONDARY-
NAME 123. Charles Hoock	NAME 128. Dana Petrin
TITLE 124. Operations Manager	TITLE 129. Compliance Manger
BUSINESS PHONE 125. (408) 456-2690	BUSINESS PHONE 130. (408) 847-5328
24-HOUR PHONE* 126. (408) 640-2324	24-HOUR PHONE* 131. (408) 592-7915
PAGER # 127	PAGER # 132. (831) 643-7176

ADDITIONAL LOCALLY COLLECTED INFORMATION: 133.

Property Owner: Calpine Corporation Phone No.: (925) 479-6600

Billing Address: 4160 Dublin Blvd, Dublin, CA 94568

Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete.

SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE FOR	DATE 134 11/05/03	NAME OF DOCUMENT PREPARER 135. Dana Petrin
NAME OF SIGNER (print) 136. Robert McCaffrey	TITLE OF SIGNER 137 General Manager, South Bay Projects	

* See instructions on next page.

Date: 11/03/2003

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Business Name: Los Esteros Critical Energy Center (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: Los Esteros Critical Energy Center (Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only): 43-060-408767

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
Non-Hazardous	A	Hyvolt II Transformer Insulating Oil	Severely Hydroteated Lightnapthentic Petroleum Butylated	99.7	☐	64742-53-6	☐ pure ☒ mixture	26052	26052	6513	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb	☐ ambient ☒ > amb ☐ < amb ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
			Hydroxytolulene	0.3	☐									
		CAS No.: 64742-53-6 ☐ EHS			☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* R				
8	B	Sulfuric Acid	Sulfuric Acid, H2SO4	93-98	☐	7664-93-9	☐ pure ☒ mixture	5000	3500	5000	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☒ reactive ☐ pressure release ☒ acute health ☒ chronic health ☐ radioactive
			Water	Bal	☐									
		CAS No.: 7664-93-9 ☐ EHS			☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* O				
8	C	Sodium Hypochlorite (bleach)	Soduim Hypochlorite	12	☐	7681-52-9	☐ pure ☒ mixture	5000	3500	5000	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb	☒ ambient ☐ > amb ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
			Water	bal	☐									
		CAS No.: 7671-52-9 ☐ EHS			☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* O				
N/R	D	SUVA 123	Dichlorotrifluorethane	100	☐	306-83-2	☒ pure ☐ mixture	9360	9360	4180	☐ gallons ☒ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☒ chronic health ☐ radioactive
		CAS No.: 306-83-2 ☐ EHS			☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* R				
2.2	E	Nitrogen	Nitrogen	100	☐	7227-37-9	☒ pure ☐ mixture	2400	1200	300	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☐ ambient ☒ > amb ☐ < amb	☒ ambient ☐ > amb ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☒ acute health ☐ chronic health ☐ radioactive
		CAS No.: 7227-37-9 ☐ EHS			☐		☐ solid ☐ liquid ☒ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* L				
2.1	N/A	Natural Gas (pipeline)	Methane	70-99	☐		☐ pure ☒ mixture	N/A	N/A	N/A	☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
			Nitrogen	0-29	☐	7227-37-9								
			Ethane	0-9	☐		☐ solid ☐ liquid ☒ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* R				
		CAS No.: 8006-14-2 ☐ EHS	Propane	0-5	☐									
			Butane	0-3	☐									

* Storage Type Codes:

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below:

Date: 11/01/2003

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Business Name: Los Esteros Critical Energy Center (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: Los Esteros Critical Energy Center (Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only): 43-060-40876-7

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
8	F	Battery Acid	Sulfuric Acid	<30	☐	7664-93-9	☐ pure ☒ mixture	2200	2200	132	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb.	☐ ambient ☒ > amb ☐ < amb. ☐ cryogenic	☐ fire ☒ reactive ☐ pressure release ☒ acute health ☒ chronic health ☐ radioactive
			Water	bal	☐									
		CAS No.: 7664-93-9-6 ☐ EHS			☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* R				
2.2	E	CO/O2 Calibration Gas	Carbon Monoxide	.06	☐	630-08-0	☐ pure ☒ mixture	2400	1600	200	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☒ acute health ☐ chronic health ☐ radioactive
			Oxygen	15	☐	7228-44-7								
			Nitrogen	bal	☐	7727-37-9	☐ solid ☐ liquid ☒ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* L				
		CAS No.: 7664-93-9 ☐ EHS			☐									
2.2	E	NOX Calibration Gas	Nitric Oxide	.01	☐		☐ pure ☒ mixture	2400	1600	200	☐ gallons ☐ pounds ☒ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☒ acute health ☐ chronic health ☐ radioactive
			Nitrogen	bal	☐	7727-37-9								
		CAS No.: ☐ EHS			☐		☐ solid ☐ liquid ☒ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* L				
2.2	G	Carbon Dioxide	Carbon Dioxide	100	☐		☒ pure ☐ mixture	6000	6000	100	☐ gallons ☒ pounds ☐ cu. feet ☐ tons	☐ ambient ☒ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☒ pressure release ☒ acute health ☐ chronic health ☐ radioactive
		CAS No.: 57-55-6 ☐ EHS			☐		☐ solid ☐ liquid ☒ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* L				
N/R	H	Royco	Tricresyl Phosphate	2	☐	1330-78-5	☐ pure ☒ mixture	710	655	150	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
			1-napthalenamine, N-phenyl	2	☐	90-30-2								
			Pentaerythritol Esters	95	☐	68424-31-7	☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* A				
		CAS No.: ☐ EHS			☐									
N/R	H	Hydraulic Oil 46	2-ethylhexanol	<5	☐	104-76-7	☐ pure ☒ mixture	710	655	150	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☒ pressure release ☐ acute health ☐ chronic health ☐ radioactive
			zinc	<.06	☐	7440-66-6								
			Phosphorodithoic acid	<.06	☐	68649-42-3	☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* A				
		CAS No.: ☐ EHS			☐									

* Storage Type Codes:

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below:

Date: 11/01/2003

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Business Name: Los Esteros Critical Energy Center (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: Los Esteros Critical Energy Center (Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only): 43-0600-408767

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only): Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities: Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes: Storage Pressure	Storage Temp.	9. Hazard Categories
N/R	I	GST 32 Generator Lubricating Oil	Highly refined base oils with additives. Any combination of the following CAS Number		☐	72623-83-7	☐ pure ☒ mixture	2165	2055	500	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb	☒ ambient ☐ > amb ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
					☐	72742-54-7								
					☐	64741-88-4	☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* A				
		CAS No.:			☐	64741-89-5								
		☐ EHS			☐	64741-96-5								
8	J	Aqueous Ammonia	Ammonia	19	☐	1336-21-6	☐ pure ☒ mixture	10000	7000	10000	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb	☒ ambient ☐ > amb ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☒ chronic health ☐ radioactive
			Water	bal	☐									
					☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* A				
		CAS No.: 1336-21-6			☐									
		☐ EHS			☐									
N/R	M	Turbine Oil GST-68	Severely hydrotreated hydrocarbon oil and additives	100	☐	72623-85-9	☐ pure ☒ mixture	165	165	55	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* D				
		CAS No.:			☐									
		☐ EHS			☐									
N/R	K	Turbine Oil GST-100	Severely hydrotreated hydrocarbon oil and additives	100	☐	72623-85-9	☐ pure ☒ mixture	280	280	55	☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb ☐ < amb	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* D				
		CAS No.:			☐									
		☐ EHS			☐									
8	L	Nalco 7396	Tetrapotassium Pyrpphosphate	100	☐	7320-34-5	☒ pure ☐ mixture	400	200	400	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb	☒ ambient ☐ > amb ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* O				
		CAS No.:			☐									
		☐ EHS			☐									
N/A	L	TRASAR 23263	Non-Hazardous		☐		☐ pure ☒ mixture	400	200	400	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb.	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* O				
		CAS No.:			☐									
		☐ EHS			☐									

* Storage Codes:

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below:

Date: 11/01/2003

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Business Name: Los Esteros Critical Energy Facility, LLC (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: Los Esteros Critical Energy Facility (Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☒ Yes; ☐ No

Facility ID # (Agency Use Only): 43-060-408767

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
8	S	VITEC 3000 Anti Scale	Phosphonic Acid Salt	12	☐	Poprietary	☐ pure ☒ mixture	70	55	70	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☒ ambient ☐ > amb ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
			Alkali Hydroxide	9	☐	Poprietary								
			Aminotrialkylphosphonic Acid	16	☐	Poprietary	☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* E				
		CAS No.: ☐ EHS	Phosphonic Acid	1	☐	Poprietary								
			Inorganic Acid	.2	☐	Poprietary								
8	S	Sodium Bisulfite	Sodium Bisulfite	40	☐	7631-90-5	☐ pure ☐ mixture	60	30	60	☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☐ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*				
		CAS No.: ☐ EHS			☐									
					☐									
8	L	Nalco 8338	Sodium nitrite	30	☐	7632-00-0	☐ pure ☒ mixture	20	10	20	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb	☒ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☒ chronic health ☐ radioactive
			Sodium Tolyltriazole	5	☐	64665-57-2								
			Sodium Hydroxide	1	☐	1310-73-2	☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* O				
		CAS No.: ☐ EHS			☐									
					☐									
8	L	Nalco 2584	Caustic Soda		☐		☐ pure ☐ mixture	40	40	40	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☒ acute health ☒ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*				
		CAS No.: ☐ EHS			☐									
					☐									
N/A	N	Envirotemp FR3 Fluid	Non-Hazardous		☐		☐ pure ☒ mixture	2826	2826	599	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb	☐ ambient ☒ > amb. ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* A				
		CAS No.: ☐ EHS			☐									
					☐									
3	O	Diesel Fuel			☐		☒ pure ☐ mixture	320	320	320	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb ☐ < amb	☒ ambient ☐ > amb ☐ < amb. ☐ cryogenic	☒ fire ☐ reactive ☐ pressure release ☐ acute health ☒ chronic health ☐ radioactive
					☐									
					☐		☐ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* A				
		CAS No.: 68334-30-5 ☐ EHS			☐									
					☐									

* Storage Type Codes:

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below:

Date: 11/01/2003

Non-Waste Hazardous Materials Inventory Statement

For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Business Name: Los Esteros Critical Energy Facility, LLC (Same as Facility Name or DBA)

Type of Report on This Page: ☐ Add; ☐ Delete; ☒ Revise

Chemical Location: Los Esteros Critical Energy Facility (Building/Storage Area)

EPCRA Confidential Location? ☐ Yes; ☒ No
Trade Secret Information? ☐ Yes; ☒ No

Facility ID # (Agency Use Only): 43-060-408767

1. Haz. Class	2. Map and Grid or Location Code	3. Common Name	4. Hazardous Components (For mixtures only) Chemical Name	% Wt.	EHS	CAS No.	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
N/A	P	Diala Oil AX			☐		☒ pure ☐ mixture	9210	9210	4605	☒ gallons ☐ pounds ☐ cu. feet ☐ tons	☒ ambient ☐ > amb. ☐ < amb.	☐ ambient ☒ > amb ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☒ chronic health ☐ radioactive
		CAS No.: 64742-53-6			☐ EHS		☒ solid ☒ liquid ☐ gas	Curies: (If radioactive) N/A	Days On Site: 365	Storage Container:* A				
					☐		☐ pure ☐ mixture				☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
		CAS No.:			☐ EHS		☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*				
					☐		☐ pure ☐ mixture				☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
		CAS No.:			☐ EHS		☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*				
					☐		☐ pure ☐ mixture				☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
		CAS No.:			☐ EHS		☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*				
					☐		☐ pure ☐ mixture				☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
		CAS No.:			☐ EHS		☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*				
					☐		☐ pure ☐ mixture				☐ gallons ☐ pounds ☐ cu. feet ☐ tons	☐ ambient ☐ > amb. ☐ < amb.	☐ ambient ☐ > amb. ☐ < amb. ☐ cryogenic	☐ fire ☐ reactive ☐ pressure release ☐ acute health ☐ chronic health ☐ radioactive
		CAS No.:			☐ EHS		☐ solid ☐ liquid ☐ gas	Curies: (If radioactive)	Days On Site:	Storage Container:*				

* Storage Codes

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

If EPCRA, sign below: _____

Emergency Response/Contingency Plan

(Hazardous Materials Business Plan Module)

Authority Cited: HSC, Section 25504(b); Title 22, Div. 4.5, Ch. 12, Art. 3 CCR

408767

All facilities that handle hazardous materials in specified quantities must have a written emergency response plan. In addition, facilities that generate 1,000 kilograms or more of hazardous waste per month, or accumulate more than 6,000 kilograms of hazardous waste on-site at any one time, must prepare a contingency plan. Because the requirements are similar, they have been combined in a single document, provided below, for your convenience. This plan is a required module of the Hazardous Materials Business Plan (HMBP). **If you already have a plan that meets these requirements, you should not complete the blank plan, below, but you must include a copy of your existing plan as part of your HMBP.**

This site-specific Emergency Response/Contingency Plan is the facility's plan for dealing with emergencies and shall be implemented immediately whenever there is a fire, explosion, or release of hazardous materials that could threaten human health and/or the environment. **At least one copy of the plan shall be maintained at the facility for use in the event of an emergency and for inspection by the local agency.** Within Santa Clara County, hospitals and police agencies have delegated receipt of these plans to the local agencies administering Hazardous Materials Business Plans, so additional copies need not be submitted. However, a copy of the plan and any revisions must be provided to any contractor, hospital, or agency with whom special (i.e. contractual) emergency services arrangements have been made *(see section 3, below)*.

1. Evacuation Plan:

a. The following alarm signal(s) will be used to begin evacuation of the facility *(check all that apply)*:

☒ Bells; ☒ Horns/Sirens; ☒ Verbal *(i.e. shouting)*; ☒ Other *(specify)* **Plant Paging System**

b. ☐ Evacuation map is prominently displayed throughout the facility.

Note: A properly completed HMBP Site Plan satisfies contingency plan map requirements. This drawing (or any other drawing that shows primary and alternate evacuation routes, emergency exits, and primary and alternate staging areas) must be prominently posted throughout the facility in locations where it will be visible to employees and visitors.

2. a. Emergency Contacts*:

Fire/Police/Ambulance	Phone No. **911**
State Office of Emergency Services	Phone No. **(800) 852-7550**

b. Post-Incident Contacts*:

Fire Department Hazardous Materials Program	Phone No.: **(408) 277-4659**
Santa Clara County Hazardous Materials Compliance Division	Phone No. **(408) 918-3400**
California EPA Department of Toxic Substances Control	Phone No. **(510) 540-3739**
Cal-OSHA Division of Occupational Safety and Health	Phone No. **(408) 452-7288**
Air Quality Management District	Phone No. **(415) 771-6000**
Regional Water Quality Control Board	Phone No. **(510) 622-2300**

**** These telephone numbers are provided as a general aid to emergency notification. Be advised that additional agencies may be required to be notified.***

c. Emergency Resources:

Poison Control Center	Phone No. **(800) 876-4766**
Nearest Hospital: Name: **O'Conner Hospital**	Phone No.: **(408) 947-4444**
Address: **2105 Forest Avenue**	City: **San Jose**

3. Arrangements With Emergency Responders:

If you have made special (i.e. contractual) arrangements with any police department, fire department, hospital, contractor, or State or local emergency response team to coordinate emergency services, describe those arrangements below:

_____

_____

_____

7. Emergency Equipment:

22 CCR §66265.52(e) [as referenced by 22 CCR §66262.34(a)(4)] and the Hazardous Materials Storage Ordinance require that emergency equipment at the facility be listed. Completion of the following Emergency Equipment Inventory Table meets this requirement.

EMERGENCY EQUIPMENT INVENTORY TABLE

1. Equipment Category	2. Equipment Type	3. Locations *	4. Description**
Personal Protective Equipment, Safety Equipment, and First Aid Equipment	☒ Cartridge Respirators	F6	
	☒ Chemical Monitoring Equipment *(describe)*	F6	Ammonia Gas Detector, Confined Space Monitors
	☒ Chemical Protective Aprons/Coats	F6	
	☒ Chemical Protective Boots	F6	
	☒ Chemical Protective Gloves	F6,B7	
	☒ Chemical Protective Suits *(describe)*	F6	Level B suits available
	☒ Face Shields	F6, B7	
	☒ First Aid Kits/Stations *(describe)*	F5, F6	Fully stock first aid kit located in Main Control Building
	☒ Hard Hats	All	
	☒ Plumbed Eye Wash Stations	G5, F4, F8, E2, B6	
	☐ Portable Eye Wash Kits *(i.e. bottle type)*		
	☒ Respirator Cartridges *(describe)*	F6, B7	Ammonia, HEPA
	☒ Safety Glasses/Splash Goggles	F6, B7	
	☒ Safety Showers	G5, F4, F7, F8, E2, B7, B8	
	☐ Self-Contained Breathing Apparatuses (SCBA)		
	☐ Other *(describe)*		
Fire Extinguishing Systems	☐ Automatic Fire Sprinkler Systems		
	☒ Fire Alarm Boxes/Stations	F6	
	☒ Fire Extinguisher Systems *(describe)*	Various	CO2 flooding system Gas Turbine Packages FM-200 flooding systems in critical electrical PDC's Strategically placed portable fire extinguishers
	☐ Other *(describe)*		
Spill Control Equipment and Decontamination Equipment	☒ Absorbents *(describe)*	F8, B7	Pads, pillow, sand, neutralizers, etc
	☐ Berms/Dikes *(describe)*		
	☐ Decontamination Equipment *(describe)*		
	☐ Emergency Tanks *(describe)*		
	☐ Exhaust Hoods		
	☐ Gas Cylinder Leak Repair Kits *(describe)*		
	☒ Neutralizers *(describe)*	F6, B7	Ampho-Mag multi use neutralizer
	☒ Overpack Drums	F8	
	☒ Sumps *(describe)*	Various	All secondary containments have sumps
	☐ Other *(describe)*		
Communications and Alarm Systems	☐ Chemical Alarms *(describe)*		
	☒ Intercoms/ PA Systems	F5, F6, F8, B7	
	☒ Portable Radios	F5	
	☒ Telephones	F5, F6, F8	
	☒ Underground Tank Leak Detection Monitors	B6, E4, E8	
	☐ Other *(describe)*		
Additional Equipment *(Use Additional Pages if Needed.)*	☐		
	☐		
	☐		
	☐		
	☐		
	☐		

Employee Training Plan

(Hazardous Materials Business Plan Module)

Authority Cited: HSC, Section 25504(c); Title 22, Div. 4.5, Ch. 12, Art. 3 CCR

All facilities that handle hazardous materials must have a written employee training plan. This plan is a required module of the Hazardous Materials Business Plan (HMBP). A blank plan has been provided below for you to complete and submit if you do not already have such a plan. **If you already have a brief written description of your training program that addresses all subjects covered below, you are not required to complete the blank plan, below, but you must include a copy of your existing document as part of your HMBP.**

Check all boxes that apply. *[Note: Items marked with an asterisk (*) are required.]*:

1. **Personnel** are trained in the following procedures:

☒	Internal alarm/notification *
☒	Evacuation/re-entry procedures & assembly point locations*
☒	Emergency incident reporting
☒	External emergency response organization notification
☒	Location(s) and contents of Emergency Response/Contingency Plan
☒	Facility evacuation drills, that are conducted at least *(specify)* Annually *(e.g. "Quarterly", etc.)*

2. **Chemical Handlers** are additionally trained in the following:

☒	Safe methods for handling and storage of hazardous materials *
☒	Location(s) and proper use of fire and spill control equipment
☒	Spill procedures/emergency procedures
☒	Proper use of personal protective equipment *
☒	Specific hazard(s) of each chemical to which they may be exposed, including routes of exposure *(i.e. inhalation, ingestion, absorption)* *
☒	**Hazardous Waste Handlers/Managers** are trained in all aspects of hazardous waste management specific to their job duties *(e.g. container accumulation time requirements, labeling requirements, storage area inspection requirements, manifesting requirements, etc.)* *

3. **Emergency Response Team Members** are capable of and engaged in the following:

☐	Personnel rescue procedures
☐	Shutdown of operations
☐	Liaison with responding agencies
☐	Use, maintenance, and replacement of emergency response equipment
☐	Refresher training, which is provided at least annually *
☐	Emergency response drills, which are conducted at least *(specify)* _____ *(e.g. "Quarterly", etc.)*

Record Keeping

(Hazardous Materials Business Plan Module)

All facilities that handle hazardous materials must maintain records associated with their management. A summary of your recordkeeping procedures is a required module of the Hazardous Materials Business Plan (HMBP). A blank summary has been provided below for you to complete and submit if you do not already have such a document. **If you already have a brief written description of your hazardous materials recordkeeping systems that addresses all subjects covered below, you are not required to complete this page, but you must include a copy of your existing document as part of your HMBP.**

Check all boxes that apply. The following records are maintained at the facility. *[Note: Items marked with an asterisk (*) are required.]*:

☒	Current employees' training records *(to be retained until closure of the facility)* *
☒	Former employees' training records *(to be retained at least three years after termination of employment)* *
☒	Training Program(s) *(i.e. written description of introductory and continuing training)* *
☒	Current copy of this Emergency Response/Contingency Plan *
☒	Record of recordable/reportable hazardous material/waste releases *
☒	Record of hazardous material/waste storage area inspections *
☒	Record of hazardous waste tank daily inspections *
☒	Description and documentation of facility emergency response drills

Note: The above list of records does not necessarily identify every type of record required to be maintained by the facility.

A copy of the Inspection Check Sheet(s) or Log(s) used in conjunction with required routine self-inspections of your facility must be submitted with your HMBP. *(Exception: Available from your local agency is a Hazardous Materials/Waste Storage Area Inspection Form that you may use if you do not already have your own form. If you use the example provided, you do not need to attach a copy.)*

Check the appropriate box:

☐	We will use the Unidocs "Hazardous Materials/Waste Storage Area Inspection Form" to document inspections.
☒	We will use our own documents to record inspections. ***(A blank copy of each document used must be attached to this HMBP.)***

APPENDIX B

EDR DATABASE REPORT

The EDR Radius Map
with GeoCheck®

1001 Murphy Ranch Road
1001 Murphy Ranch Road
Milpitas, CA 95035

Inquiry Number: 1520627.2s

September 27, 2005

EDR® Environmental
Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-VLA

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

1001 MURPHY RANCH ROAD
MILPITAS, CA 95035

COORDINATES

Latitude (North):	37.417200 - 37' 25' 1.9"
Longitude (West):	121.927800 - 121' 55' 40.1"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	594880.2
UTM Y (Meters):	4141490.5
Elevation:	18 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	37121-D8 MILPITAS, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRA-TSDF..... Resource Conservation and Recovery Act Information
RCRA-LQG..... Resource Conservation and Recovery Act Information
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

AWP..... Annual Workplan Sites

EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls
VCP..... Voluntary Cleanup Program Properties

EDR PROPRIETARY HISTORICAL DATABASES

See the EDR Proprietary Historical Database Section for details

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. ~~Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month~~ Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 05/20/2005 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MAXTOR CORPORATION	***1140 BELLEW DRIVE***	***1/8 - 1/4 NNE***	***1***	***6***

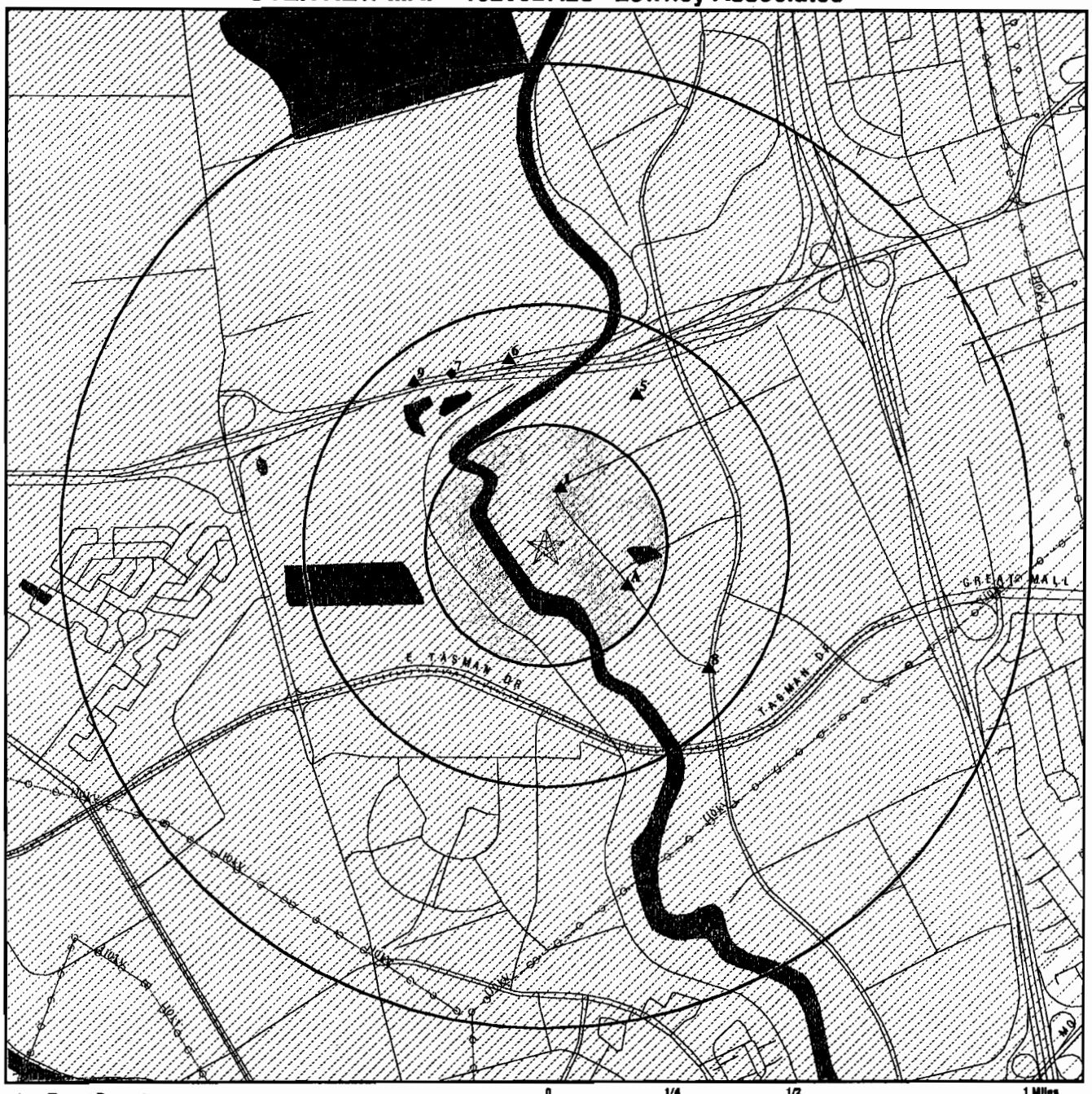
STATE ASTM STANDARD

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California

EDR PROPRIETARY HISTORICAL DATABASES

See the EDR Proprietary Historical Database Section for details

OVERVIEW MAP - 1520627.2s - Lowney Associates



0 1/4 1/2 1 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ♟ Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- Areas of Concern

TARGET PROPERTY:	1001 Murphy Ranch Road	CUSTOMER:	Lowney Associates
ADDRESS:	1001 Murphy Ranch Road	CONTACT:	Leonardo Alvarez
CITY/STATE/ZIP:	Milpitas CA 95035	INQUIRY #:	1520627.2s
LAT/LONG:	37.4172 / 121.9278	DATE:	September 27, 2005 8:02 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	1	NR	NR	NR	1
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		TP	NR	NR	NR	NR	NR	0
Cortese		0.500	0	1	2	NR	NR	3
Notify 65		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	1	4	NR	NR	5
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
CA FID UST		0.250	0	2	NR	NR	NR	2
HIST UST		0.250	0	0	NR	NR	NR	0
SWEEPS UST		0.250	0	1	NR	NR	NR	1
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
FUDS		1.000	0	0	0	0	NR	0
DOD		1.000	0	0	0	0	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
1 NNE 1/8-1/4 663 ft.	**MAXTOR CORPORATION 1140 BELLEW DRIVE MILPITAS, CA 95035**	**RCRA-SQG FINDS HAZNET**	**1000472886 CAD982434714**

Relative:
Higher

Actual:
20 ft.

RCRAInfo:

Owner:	NOT REQUIRED (415) 555-1212
EPA ID:	CAD982434714
Contact:	Not reported
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site:
HAZARDOUS WASTE TRACKING SYSTEM-DATAMART
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM
TOXIC CHEMICAL RELEASE INVENTORY SYSTEM

HAZNET:

Gepaid:	CAD982434714
TSD EPA ID:	CAD009452657
Gen County:	Santa Clara
Tsd County:	San Mateo
Tons:	.1668
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Not reported
Contact:	QUANTUM CORP
Telephone:	(408) 894-4000
Mailing Address:	500 MCCARTHY BLVD MILPITAS, CA 95035 - 7908
County	Santa Clara

Gepaid:	CAD982434714
TSD EPA ID:	CAD050806850
Gen County:	Santa Clara
Tsd County:	Los Angeles
Tons:	.2250
Waste Category:	Unspecified solvent mixture Waste
Disposal Method:	Not reported
Contact:	QUANTUM CORP
Telephone:	(408) 894-4000
Mailing Address:	500 MCCARTHY BLVD MILPITAS, CA 95035 - 7908
County	Santa Clara

Gepaid:	CAD982434714
TSD EPA ID:	CAD050806850
Gen County:	Santa Clara
Tsd County:	Los Angeles
Tons:	.1750
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Not reported
Contact:	QUANTUM CORP
Telephone:	(408) 894-4000
Mailing Address:	500 MCCARTHY BLVD MILPITAS, CA 95035 - 7908
County	Santa Clara

MURPHY RANCH PUMP STATION (Continued) **S101303681**

How Discovered: Not reported
How Stopped: Not reported
Interim : Not reported
Leak Cause: Not reported
Leak Source: Not reported
MTBE Date : Not reported
Max MTBE GW : Not reported
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case # : 06S1W13C01f
Beneficial: MUN
Staff : ZSC
GW Qualifier : =
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: LUST
Review Date : Not reported
Stop Date : Not reported
Work Suspended :Not reported
Responsible PartyDon Bockman
RP Address: 1265 North Milpitas Boulevard
Global Id: T0608591307
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary : Not reported

LUST Region 2:

Region:	2
Case Number:	06S1W13C01f
Facility Id:	Not reported
Facility Status:	Case Closed
How Discovered:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Oversight Program:	LUST
Date Leak Confirmed:	Not reported
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	11/6/1992
Pollution Characterization Began:	11/8/1993
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Remediation Action Underway:	Not reported

LUST Region SC:

Region:	Santa Clara		
Closed Date:	1998-12-03 00:00:00	SCVWD Id:	06S1W13C01
Region Code:	2	Oversight Agency:	SCVWD
Date Listed:	1993-05-11 00:00:00		

MILPITAS-MURPHY RANCH PUMP STN (Continued) **S101594677**

FID:

Facility ID:	43012304	Regulate ID:	Not reported
Reg By:	Active Underground Storage Tank Location		
Cortese Code:	Not reported	SIC Code:	Not reported
Status:	Active	Facility Tel:	Not reported
Mail To:	Not reported 455 E CALAVERAS BLVD MILPITAS, CA 95035		
Contact:	Not reported	Contact Tel:	Not reported
DUNs No:	Not reported	NPDES No:	Not reported
Creation:	10/22/93	Modified:	00/00/00
EPA ID:	Not reported		
Comments:	Not reported		

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5 NNE 1/4-1/2 1928 ft. **MCCARTHY RANCH AT BELLEW**
UNKNOWN COYOTE CREEK REACH 3
MILPITAS, CA 95035
LUST Cortese **S103723188 N/A**

Relative: Higher

Actual: 20 ft.

State LUST:

Cross Street:	Not reported		
Qty Leaked:	Not reported		
Case Number	43-1877		
Reg Board:	San Francisco Bay Region		
Chemical:	Diesel		
Lead Agency:	Regional Board		
Local Agency :	43099L		
Case Type:	Undefined		
Status:	Case Closed		
Abate Method:	No Action Taken - no action has as yet been taken at the site		
Review Date:	*Not reported*	*Confirm Leak:*	*Not reported*
Workplan:	Not reported	Prelim Assess:	Not reported
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	1996-04-16 00:00:00		
Release Date:	1994-03-31 00:00:00		
Cleanup Fund Id :	Not reported		
Discover Date :	1994-03-31 00:00:00		
Enforcement Dt :	Not reported		
Enf Type:	Not reported		
Enter Date :	1994-05-16 00:00:00		
Funding:	Federal Funds		
Staff Initials:	UNK		
How Discovered:	Tank Closure		
How Stopped:	Not reported		
Interim :	No		
Leak Cause:	UNK		
Leak Source:	UNK		
MTBE Date :	Not reported		
Max MTBE GW :	Not reported		
MTBE Tested:	Not Required to be Tested.		
Priority:	2A4		
Local Case # :	06S1W13C02		
Beneficial:	Not reported		
Staff :	ZTM		
GW Qualifier :	Not reported		
Max MTBE Soil :	Not reported		

SHELL (Continued) **S105194529**

Workplan:	1985-07-01 00:00:00	Prelim Assess:	1985-07-01 00:00:00
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	Not reported		
Monitoring:	Not reported		
Close Date:	1995-01-24 00:00:00		
Release Date:	1985-08-02 00:00:00		
Cleanup Fund Id :	Not reported		
Discover Date :	Not reported		
Enforcement Dt :	Not reported		
Enf Type:	NOR		
Enter Date :	Not reported		
Funding:	Not reported		
Staff Initials:	CW		
How Discovered:	Not reported		
How Stopped:	Not reported		
Interim :	Not reported		
Leak Cause:	Not reported		
Leak Source:	Not reported		
MTBE Date :	Not reported		
Max MTBE GW :	Not reported		
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.		
Priority:	Not reported		
Local Case # :	06S1W12K01f		
Beneficial:	MUN		
Staff :	ZSC		
GW Qualifier :	Not reported		
Max MTBE Soil :	Not reported		
Soil Qualifier :	Not reported		
Hydr Basin #:	Not reported		
Operator :	Not reported		
Oversight Prgm:	LUST		
Review Date :	Not reported		
Stop Date :	Not reported		
Work Suspended :	Not reported		
Responsible Party	Alex Perez		
RP Address:	P.O. Box 4023		
Global Id:	T0608501254		
Org Name:	Not reported		
Contact Person:	Not reported		
MTBE Conc:	0		
Mtbe Fuel:	1		
Water System Name:	Not reported		
Well Name:	Not reported		
Distance To Lust:	0		
Waste Discharge Global ID:	Not reported		
Waste Disch Assigned Name:	Not reported		
Summary :	Not reported		

LUST Region 2:

Region:	2
Case Number:	06S1W12K01f
Facility Id:	Not reported
Facility Status:	Case Closed
How Discovered:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Oversight Program:	LUST
Date Leak Confirmed:	Not reported

CALPINE C* POWER CORP (Continued) **S105688885**

Review Date : Not reported
Stop Date : Not reported
Work Suspended :Not reported
Responsible PartyDave Shilbey
RP Address: 4160 Dublin Blvd
Global Id: T0608531309
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 1
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary : Not reported

LUST Region 2:
Region: 2
Case Number: 06S1W12E01f
Facility Id: Not reported
Facility Status: Case Closed
How Discovered: TC
Leak Cause: Unknown
Leak Source: Unknown
Oversight Program: LUST
Date Leak Confirmed: Not reported
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: 8/10/2002
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Remediation Action Underway: Not reported

LUST Region SC:
Region: Santa Clara
Closed Date: 2002-08-16 00:00:00
Region Code: 2
Date Listed: 2002-08-16 00:00:00
SCVWD Id: 06S1W12E01
Oversight Agency: SCVWD

HAZNET:
Gepaid: CAL000253756
TSD EPA ID: Not reported
Gen County: Santa Clara
Tsd County: Santa Clara
Tons: 0.22
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Contact: DAVE SHIBLEY - SITE SUPR
Telephone: (925) 200-0628
Mailing Address: PO BOX 11749
PLEASANTON, CA 94588 - 1749
County Not reported

CILKER ORCHARDS #3 (Continued) **S103880699**

Leak Source: Not reported
MTBE Date : 1998-05-14 00:00:00
Max MTBE GW : 5 Parts per Billion
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected
Priority: Not reported
Local Case # : 06S1W12L01f
Beneficial: MUN
Staff : ZSC
GW Qualifier : =
Max MTBE Soil : Not reported
Soil Qualifier : Not reported
Hydr Basin #: Not reported
Operator : Not reported
Oversight Prgm: LUST
Review Date : Not reported
Stop Date : Not reported
Work Suspended :Not reported
Responsible PartyW.H. Cilker Jr.
RP Address: 1595 Milpitas-Alviso Rd
Global Id: T0608500409
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 1
Mtbe Fuel: 1
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary : Not reported

LUST Region 2:

Region:	2
Case Number:	06S1W12L01f
Facility Id:	Not reported
Facility Status:	Case Closed
How Discovered:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Oversight Program:	LUST
Date Leak Confirmed:	Not reported
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	Not reported
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Remediation Action Underway:	Not reported

LUST Region SC:

Region:	Santa Clara		
Closed Date:	1998-08-19 00:00:00	SCVWD Id:	06S1W12L01
Region Code:	2	Oversight Agency:	SCVWD
Date Listed:	1991-06-03 00:00:00		

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MILPITAS	93329487	JUST OFF I-80 IN MILPITAS A MILE SO OF DIXON LANDING ROAD	JUST OFF I-80 IN MILPITAS A MILE SO OF DIXON LANDING ROAD	95035	ERNS
MILPITAS	S105512828	MCCARTHY RANCH	MCCARTHY / MAGNOLIA ST BLVD	95035	LUST
MILPITAS	S101594672	THE MCCARTHY RANCH	783 MILPITAS ALVISO RD	95035	CA FID UST, SWEEPS UST
MILPITAS	1003879376	JONES CHEMICAL	985 MONTAGUE EXPRESSWAY	95035	CERC-NFRAP
MILPITAS	S106929437	MILPITAS BELLEW PUMP STATION/EDGAR LUPTON	481 MURPHY RANCH RD	95035	SWEEPS UST
MILPITAS	U003976759	MILPITAS - BELLEW PUMP STA.	481 MURPHY RANCH RD		UST
MILPITAS	1003878543	INTERNATIONAL DSPL CORP NEWBY IS LDFL	FT OF DIXON LANDING RD W END	95035	CERC-NFRAP
UNINCORPORATED	U001601477	MILPITAS GAS TERMINAL	HIGHWAY 237 @ HIGHWAY 17	95035	HIST UST

Date of Government Version: 05/17/05
Date Made Active at EDR: 08/17/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/20/05
Elapsed ASTM days: 58
Date of Last EDR Contact: 06/20/05

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/28/05
Date Made Active at EDR: 08/08/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 07/05/05
Elapsed ASTM days: 34
Date of Last EDR Contact: 06/05/05

RCRA: Resource Conservation and Recovery Act Information
Source: EPA
Telephone: 800-424-9346
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 05/20/05
Date Made Active at EDR: 06/09/05
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 05/24/05
Elapsed ASTM days: 16
Date of Last EDR Contact: 08/23/05

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/04
Date Made Active at EDR: 03/24/05
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/05
Elapsed ASTM days: 56
Date of Last EDR Contact: 07/25/05

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/03
Database Release Frequency: Biennially

Date of Last EDR Contact: 06/17/05
Date of Next Scheduled EDR Contact: 09/12/05

CONSENT: Superfund (CERCLA) Consent Decrees
Source: Department of Justice, Consent Decree Library
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 05/13/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/27/05
Date of Next Scheduled EDR Contact: 09/26/05

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 202-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/22/05
Date of Next Scheduled EDR Contact: 11/21/05

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/30/05
Database Release Frequency: Annually

Date of Last EDR Contact: 08/25/05
Date of Next Scheduled EDR Contact: 11/07/05

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-692-8801
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 08/09/05
Date of Next Scheduled EDR Contact: 11/07/05

UMTRA: Uranium Mill Tailings Sites
Source: Department of Energy
Telephone: 505-845-0011
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 12/29/04
Database Release Frequency: Varies

Date of Last EDR Contact: 07/05/05
Date of Next Scheduled EDR Contact: 09/19/05

ODI: Open Dump Inventory
Source: Environmental Protection Agency
Telephone: 800-424-9346
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/23/95
Date of Next Scheduled EDR Contact: N/A

FUDS: Formerly Used Defense Sites
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-4203
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03
Database Release Frequency: Annually
Date of Last EDR Contact: 07/18/05
Date of Next Scheduled EDR Contact: 10/17/05

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/15/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/20/05
Date of Next Scheduled EDR Contact: 09/19/05

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 08/08/05
Date Made Active at EDR: 09/21/05
Database Release Frequency: Annually
Date of Data Arrival at EDR: 08/29/05
Elapsed ASTM days: 23
Date of Last EDR Contact: 08/29/05

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 08/08/05
Date Made Active at EDR: 09/21/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 08/29/05
Elapsed ASTM days: 23
Date of Last EDR Contact: 08/29/05

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/03
Date Made Active at EDR: 06/25/04
Database Release Frequency: Varies
Date of Data Arrival at EDR: 05/18/04
Elapsed ASTM days: 38
Date of Last EDR Contact: 08/22/05

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Date Made Active at EDR: 03/29/01
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 02/28/01
Elapsed ASTM days: 29
Date of Last EDR Contact: 08/22/05

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 09/30/04
Date Made Active at EDR: 11/19/04
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 10/20/04
Elapsed ASTM days: 30
Date of Last EDR Contact: 07/11/05

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03
Date Made Active at EDR: 06/02/03
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 05/19/03
Elapsed ASTM days: 14
Date of Last EDR Contact: 08/15/05

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/04
Date Made Active at EDR: 10/12/04
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/07/04
Elapsed ASTM days: 35
Date of Last EDR Contact: 06/27/05

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291

Date of Government Version: 07/01/05
Date Made Active at EDR: 09/01/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 08/02/05
Elapsed ASTM days: 30
Date of Last EDR Contact: 07/08/05

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03
Date Made Active at EDR: 10/07/03
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/10/03
Elapsed ASTM days: 27
Date of Last EDR Contact: 06/06/05

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 06/07/05
Date Made Active at EDR: 06/29/05
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 06/07/05
Elapsed ASTM days: 22
Date of Last EDR Contact: 07/08/05

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: 04/18/05
Date Made Active at EDR: 05/31/05
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/16/05
Elapsed ASTM days: 15
Date of Last EDR Contact: 08/25/05

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: Environmental Protection Agency
Telephone: 415-972-3372
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 06/02/05
Date Made Active at EDR: 07/01/05
Database Release Frequency: Varies

Date of Data Arrival at EDR: 06/03/05
Elapsed ASTM days: 28
Date of Last EDR Contact: 08/25/05

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land
Source: EPA Region 10
Telephone: 206-553-2857
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 06/14/05
Date Made Active at EDR: 07/15/05
Database Release Frequency: Varies

Date of Data Arrival at EDR: 06/14/05
Elapsed ASTM days: 31
Date of Last EDR Contact: 08/25/05

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-341-5851
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5851
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

SWEEPS UST: SWEEPS UST Listing
Source: State Water Resources Control Board
Telephone: N/A
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980?s. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/94
Date Made Active at EDR: 08/11/05
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 07/07/05
Elapsed ASTM days: 35
Date of Last EDR Contact: 06/03/05

Date of Government Version: 12/31/03
Database Release Frequency: Varies

Date of Last EDR Contact: 07/19/05
Date of Next Scheduled EDR Contact: 10/17/05

WIP: Well Investigation Program Case List
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/27/05
Database Release Frequency: Varies

Date of Last EDR Contact: 07/25/05
Date of Next Scheduled EDR Contact: 10/24/05

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 05/04/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/01/05
Date of Next Scheduled EDR Contact: 08/29/05

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 05/04/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/01/05
Date of Next Scheduled EDR Contact: 08/29/05

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA procass. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 08/08/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 08/29/05
Date of Next Scheduled EDR Contact: 11/28/05

SLIC: Statewide SLIC Cases
Source: State Water Resources Control Board
Contact: Milpitas City Fire Department, (408) 586-337
Contact: Santa Clara County Environmental Health, (408) 918-1973
Contact: Santa Clara County Fire Department, (408) 378-4010
The Spills, Leaks, Investigations, and Cleanups (SLIC) listings includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites.

Date of Government Version: 07/11/05
Database Release Frequency: Varies

Date of Last EDR Contact: 07/12/05
Date of Next Scheduled EDR Contact: 10/10/05

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/22/05
Date of Next Scheduled EDR Contact: 11/21/05

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 06/27/05
Database Release Frequency: Annually

Date of Last EDR Contact: 05/31/05
Date of Next Scheduled EDR Contact: 08/29/05

HAZNET: Facility and Manifest Data
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 08/23/05
Date of Next Scheduled EDR Contact: 11/07/05

LOCAL RECORDS

ALAMEDA COUNTY:

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 06/28/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/28/05
Date of Next Scheduled EDR Contact: 10/24/05

Contaminated Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 08/16/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/25/05
Date of Next Scheduled EDR Contact: 10/24/05

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 06/13/05
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/13/05
Date of Next Scheduled EDR Contact: 08/29/05

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/25/05
Database Release Frequency: Annually
Date of Last EDR Contact: 08/15/05
Date of Next Scheduled EDR Contact: 11/14/05

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 06/28/05
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 08/01/05
Date of Next Scheduled EDR Contact: 10/31/05

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 06/27/05
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 06/27/05
Date of Next Scheduled EDR Contact: 09/26/05

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 06/27/05
Database Release Frequency: Annually
Date of Last EDR Contact: 06/27/05
Date of Next Scheduled EDR Contact: 09/28/05

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 06/01/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/10/05
Date of Next Scheduled EDR Contact: 09/05/05

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3448
Orange County Underground Storage Tank Facilities (UST).

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/30/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/05/05
Date of Next Scheduled EDR Contact: 09/05/05

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies
Date of Last EDR Contact: 08/22/05
Date of Next Scheduled EDR Contact: 11/21/05

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/08/05
Date of Next Scheduled EDR Contact: 10/03/05

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 06/07/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/05/05
Date of Next Scheduled EDR Contact: 09/05/05

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 06/07/05
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/05/05
Date of Next Scheduled EDR Contact: 09/05/05

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 01/29/04
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/18/05
Date of Next Scheduled EDR Contact: 10/03/05

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/04
Database Release Frequency: Annually

Date of Last EDR Contact: 05/23/05
Date of Next Scheduled EDR Contact: 08/22/05

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/17/05
Date of Next Scheduled EDR Contact: 09/12/05

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 07/05/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/15/05
Date of Next Scheduled EDR Contact: 10/10/05

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 06/01/05
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/17/05
Date of Next Scheduled EDR Contact: 09/12/05

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 07/19/05
Database Release Frequency: Annually

Date of Last EDR Contact: 07/18/05
Date of Next Scheduled EDR Contact: 10/17/05

EDR PROPRIETARY HISTORICAL DATABASES

EDR Historical Gas Station and Dry Cleaners: EDR has searched select national collections of business directories and has collected listings of potential dry cleaner and gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning and gas station/filling station/service station establishments. The categories reviewed included, but were not limited to: *gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, dry cleaner, cleaners, laundry, laundromat, cleaning/laundry, wash & dry, etc.*

This information is meant to assist and complement environmental professionals in their conduct of environmental site assessments, and is not meant to be a substitute for a full historical investigation as defined in ASTM E1527. The information provided in this proprietary database may or may not be complete; i.e., the absence of a dry cleaner or gas station/filling station/service station site does not necessarily mean that such a site did not exist in the area covered by this report.

(A note on "dry cleaning" sites: it is not possible for EDR to differentiate between establishments that use PERC on-site as a cleaning solvent and sites that function simply as drop-off and pick-up locations or that are traditional wet cleaning/laundry facilities. Therefore, it is essential for environmental professionals to incorporate professional judgment in the evaluation of each site.)

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

GEOCHECK ® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

1001 MURPHY RANCH ROAD
1001 MURPHY RANCH ROAD
MILPITAS, CA 95035

TARGET PROPERTY COORDINATES

Latitude (North):	37.417198 - 37' 25' 1.9"
Longitude (West):	121.927803 - 121' 55' 40.1"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	594880.2
UTM Y (Meters):	4141490.5
Elevation:	18 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SANTA CLARA, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	0603440003F
Additional Panels in search area:	0603440001F 0603490006F 0603370070F 0603490008F

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
MILPITAS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	9 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.30 Min: 5.60
2	9 inches	41 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.80 Min: 5.60
3	41 inches	76 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 0.60 Min: 0.20	Max: 7.80 Min: 5.60

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: No Other Soil Types

Surficial Soil Types: No Other Soil Types

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: No Other Soil Types

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

PHYSICAL SETTING SOURCE MAP - 1520627.2s

County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

No contour lines were detected within this map area.

TARGET PROPERTY:	1001 Murphy Ranch Road	CUSTOMER:	Lowney Associates
ADDRESS:	1001 Murphy Ranch Road	CONTACT:	Leonardo Alvarez
CITY/STATE/ZIP:	Milpitas CA 95035	INQUIRY #:	1520627.2s
LAT/LONG:	37.4172 / 121.9278	DATE:	September 27, 2005 8:03 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
A3 **South** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**6842**

Water System Information:

Prime Station Code:	06S/01W-13N04 M	User ID:	HEN
FRDS Number:	4310800001	County:	Santa Clara
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Untreated
Source Lat/Long:	372424.0 1215543.0	Precision:	100 Feet (one Second)
Source Name:	WELL 04		
System Number:	4310800		
System Name:	Agnews Dev. Center - East Campus		
Organization That Operates System:			
	3500 ZANKER RD		
	SAN JOSE, CA 95114		
Pop Served:	1830	Connections:	34
Area Served:	Not Reported		

Sample Information: * Only Findings Above Detection Level Are Listed

Sample Collected:	09/20/1988	Findings:	2.080 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09/20/1988	Findings:	1.240 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12/06/1993	Findings:	2.520 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12/06/1993	Findings:	5.000 UNITS
Chemical:	COLOR		
Sample Collected:	12/06/1993	Findings:	645.000 UMHO
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	12/06/1993	Findings:	7.600
Chemical:	PH (LABORATORY)		
Sample Collected:	12/06/1993	Findings:	250.000 MG/L
Chemical:	TOTAL ALKALINITY (AS CACO3)		
Sample Collected:	12/06/1993	Findings:	250.000 MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	12/06/1993	Findings:	306.000 MG/L
Chemical:	TOTAL HARDNESS (AS CACO3)		
Sample Collected:	12/06/1993	Findings:	33.900 MG/L
Chemical:	CALCIUM		
Sample Collected:	12/06/1993	Findings:	53.800 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	12/06/1993	Findings:	37.000 MG/L
Chemical:	SODIUM		
Sample Collected:	12/06/1993	Findings:	1.800 MG/L
Chemical:	POTASSIUM		
Sample Collected:	12/06/1993	Findings:	34.500 MG/L
Chemical:	CHLORIDE		
Sample Collected:	12/06/1993	Findings:	442.000 MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zip	Total Sites	> 4 Pci/L	Pct. > 4 Pci/L
95035	5	0	0.00

Federal EPA Radon Zone for SANTA CLARA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95035

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.400 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

EXHIBIT 38

To the Professional Services Agreement between the
SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT and
Lowney Associates
September 26, 2005

This is an exhibit attached to, and made a part of the Professional Services Agreement **(Agreement)** dated February 17, 2004 between the SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT **(District)** and Lowney Associates **(Consultant)**.

I. SCOPE OF THE SERVICES

The Services to be rendered ("Services") consist of:

Geotechnical Testing and Inspection for Canada College Building 9 – Library/Learning Center/Student Services:

1. Geotechnical Observation and Testing of earthwork for Canada College Building 9, including meetings and on-site consultation, grading for the new building, observation of footing excavations, observe installation and testing of 105 retaining wall tiebacks, retaining wall backfill for site walls on northeast side of building, test compaction of storm drain, sanitary sewer line, joint trench, water/fire line, and test compaction of sidewalk subgrade and aggregate base. Lowney Associates will perform tests as scheduled by the contractor. We assume no backfill will be required for the building walls because there are constructed against a shored cut.
2. Laboratory testing as needed. Laboratory testing will include six compaction curves, and 10 laboratory moisture contents.
3. Office services including project tracking and management, consultation as needed, final summary letter, and preparation and distribution of daily field reports.

TABLE 1. ESTIMATED SCHEDULE

FIELD SERVICES Task	Personnel	No. of Site Visits	Estimated Hours per Visit	Estimated Total Hours	Estimated No. of Compaction Tests
Meetings and On-Site Consultation	Sr. Proj. Engineer	5	3	15	0
Mass Grading	Eng. Technician	5	4	20	15
Amphitheatre Fill Compaction	Eng. Technician	2	8	16	10
Observe Installation of Retaining Wall Tie-backs	Staff Engineer	22	8	176	0
Footing Excavation	Staff Engineer	15	3	45	0
Storm Drain Trench Backfill	Eng. Technician	5	3	15	20
Sewer Trench Backfill	Eng. Technician	3	3	9	10
Water Line Trench Backfill	Eng. Technician	3	3	9	10
Electrical/Gas Line Trench Backfill	Eng. Technician	3	3	9	10
Retaining Wall Backfill	Eng. Technician	12	6	72	40
Observe Retaining Wall Subdrain	Eng. Technician	4	2	8	0
Sidewalk Subgrade Compaction	Eng. Technician	20	3	60	20
Sidewalk Aggregate Base Compaction	Eng. Technician	20	3	60	20
	TOTAL	119		514	155

OFFICE SERVICES Task	Personnel	Hours
Review field reports; project tracking and management; correspondence with design team and applicable agencies; miscellaneous consultation and documentation; preparation of final letter.	Sr. Proj. Eng.	60
	Project Eng.	10
	Sr. Super. Tech.	35
	Staff Engineer	25
	Tech. Asst.	2
	TOTAL	132

LAB SERVICES Type of Tests	No. of Tests
Compaction (ASTM D1557)	6
Moisture Contents	10
TOTAL	16

Environmental Services for Canada College Building 9 – Library/Learning Center/Student Services:

1. Based on our discussions with you, approximately 8,000 cubic yards of soil material excavated from the site will be off-hauled for disposal at the Ox Mountain Landfill. We understand that soil sample collection and analysis are to be performed prior to transporting the soils for off-site disposal. Approximately 20% of the soil reportedly has been excavated and stockpiled on-site at this time, and the remainder is in-situ. We understand that excavation equipment will be available to assist with sample collection of in-situ soil materials. The natural soil materials at the site consist of weathered greenstone, which may contain naturally occurring asbestos. The site also reportedly is in the vicinity of a former underground storage tank containing motor fuel. Soil sampling method and frequency, and chemical analyses were determined based on discussions with Ox Mountain Landfill representatives.

2. As requested, to evaluate the general soil quality, our staff geologist will collect six 4-point composite soil samples from the in-situ and stockpiled soil materials at the site. One 4-point composite soil sample will be collected from soil materials currently stockpiled on-site, and five 4-point composite soil samples will be collected from in-situ soils with the assistance of excavation equipment. The in-situ soil samples will be collected from areas to be excavated, as directed by the construction contracts. The soil samples will be submitted to a state-certified laboratory for analysis of Total Petroleum Hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene and xylenes (BTEX) (EPA Test Method 8260B), TPH as diesel (TPHd) and motor oil (TPHmo) (EPA Test Method 8015M), Leaking Underground Fuel Tank (LUFT) 5 Metals (EPA Test Method 6010/7000). In addition, samples will be analyzed for asbestos (CA ARB Test Method 435/400 Point Count PLM) at another laboratory. Soil samples to be analyzed for Petroleum hydrocarbons will be composite at this lab; soil samples to be analyzed for asbestos will be composite in the field.

3. We will prepare a letter presenting the analytical results and summarizing our conclusions and recommendations. Our conclusions and recommendations will be based on our interpretation of the analytical data.

TABLE 2. **APPROXIMATE COST PER TASK**

Meetings	$ 2,400
Mass Grading	2,500
Amphitheatre Fill Compaction	2,000
Footing Excavations	5,300
Observe Tie-back Installation	20,500
Storm Drain Trench Backfill	1,900
Sanitary Sewer Trench Backfill	1,200
Water/Fire Line Trench Backfill	1,200
Electrical/Gas Line Trench Backfill	1,200
Observe Retaining Wall Subdrain	900
Retaining Wall Backfill	8,700
Sidewalk Subgrade Compaction	7,200
Sidewalk Aggregate Base Compaction	7,200
Office Engineering and Plan Review	17,100
Laboratory Testing	1,800
Environmental Services - Off-haul hazmat testing	6,200
Contingency (must have written authorization to use)	11,000
TOTAL	**$98,300**

II. COMPENSATION FOR SERVICES

Consultant's total compensation for Services performed under this Agreement is Ninety-Seven Thousand Three Hundred dollars ($97,300) to be paid on a Time-and-Expense basis with progress payments. Fee schedule is as follows:

III. SCHEDULE OF PERFORMANCE

Consultant shall commence upon execution of the Exhibit and complete the Services within 300 days of commencement of the Services.

IN WITNESS WHEREOF, the parties hereto have executed this EXHIBIT to the Professional Services Agreement dated February 17, 2004 between the SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT and LOWNEY ASSOCIATES.

SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT

By _____ Date _____

James W. Keller
Executive Vice Chancellor

Lowney Associates

By _____ Date _____

_____ Its _____

Appendix E

PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared for:

FF Development, L.P.
5510 Morehouse Drive, Suite 200
San Diego, California 92121

Attention: Mr. Shon Finch

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
1001 MURPHY RANCH ROAD
MILPITAS, CALIFORNIA

AUGUST 20, 2004

By:

Julie L. Turnross
Senior Environmental Scientist

Kyle S. Flory, P.G.
Principal Geologist

526.025.01.001

1682 Novato Boulevard • Suite 100 • Novato, California 94947-7021 • Tel (415) 899-1600 • Fax (415) 899-1601

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1.0 INTRODUCTION

1.1 Purpose and Scope of Work

This report presents the results of a Phase I Environmental Site Assessment (ESA) of the undeveloped land at 1001 Murphy Ranch Road in Milpitas, California (Plate 1). PES Environmental, Inc. (PES) was retained by FF Development, L.P. (FF Development) to evaluate the potential for onsite and/or offsite releases of hazardous materials to have affected the subject property. PES understands that FF Development is considering acquisition of the property for residential redevelopment. The subject property is owned by Lucent Technologies.

These ESA activities were performed pursuant to our Service Agreement (Reference No. 526.025.01.P01) dated August 2, 2004 and in accordance with American Society of Testing and Materials (ASTM) guidelines for performing ESAs of commercial properties (ASTM E-1527-00). PES performed the following tasks during the ESA:

- Reviewed federal, state, and local agency records and databases to identify nearby sites which have reported the use, storage, or release of hazardous materials;
- Reviewed historical aerial photographs and a topographic map of the subject property and surrounding area to evaluate prior land uses;
- Reviewed previous environmental reports prepared for the subject property;
- Reviewed records at applicable regulatory agencies for nearby sites with documented releases of hazardous materials and hazardous materials/waste storage;
- Conducted an inspection of the subject property and a reconnaissance of the surrounding area to provide an assessment of the potential for contamination of the subject property from onsite and/or offsite sources; and
- Prepared this report presenting the results of the ESA.

1.2 Special Terms and Conditions

PES was not provided a chain-of-title report for the subject property. There are no other special terms or conditions for this project.

1.3 Limitations

The ESA activities were conducted in accordance with practices and procedures generally accepted in the consulting engineering field. Our professional judgment to assess the potential for contamination was based on limited data; no warranty is given or implied by this report.

2.0 SITE DESCRIPTION

2.1 Location

The subject property consists of an undeveloped lot covering approximately 21.7 acres at 1001 Murphy Ranch Road in Milpitas, Santa Clara County, California (Plate 1). The site is bounded on the north by Technology Drive and Bellew Pump Station, on the east by Murphy Ranch Road, on the south by an access road and Murphy Ranch Pump Station, and on the west by a levee associated with Coyote Creek. Access to the subject property is obtained from Murphy Ranch Road, Technology Drive and the access road.

2.2 Site and Vicinity Characteristics

The subject property consists of an undeveloped lot consisting of two parcels comprising approximately 21.7 acres (Assessor's Parcel Numbers 086-01-041 and-042). The site is located in an area of Milpitas that is primarily office/commercial and light industrial.

2.3 Physical Setting

PES reviewed the Milpitas Quadrangle United States Geological Survey (USGS) 7.5-minute topographic map (1979) to evaluate the physical setting. According to the map, the subject property is situated at an elevation of approximately 20 feet above mean sea level, and the terrain slopes gently to the north-northwest. The nearest surface water body is Coyote Creek, which is present approximately 30 feet west of the subject property.

2.4 Geology and Hydrogeology

Based on the results of investigations performed in the site vicinity, near-surface soil in the site vicinity consists primarily of clays and silts with minor sand lenses.

Depth to shallow groundwater in the site vicinity has been observed at approximately 10 to 15 feet below ground surface (bgs). Based on topography and the results of most groundwater investigations conducted in the site vicinity, groundwater flow beneath the site is expected to be to the northwest. However, groundwater flow to the southeast was measured at the site immediately southwest of the subject property.

The 1998 Federal Emergency Management Agency (FEMA) map for the subject property area shows the subject property is in an area protected from a 100-year flood by a levee.

2.5 Descriptions of Existing Onsite Structures and Improvements

2.5.1 Structures and Current Use

The subject property is currently undeveloped. The site has been recently disked except for an area with apparent native growth and weeds at the northwestern corner of the subject property. There are no structures on the subject property, although boxed beehives are present on the northwestern portion of the site. According to Ms. Adora Walker, Lucent Technologies property manager, there is no formal lease agreement with the beekeeper that uses the site.

2.5.2 Other Improvements

Vent pipes which appeared to be associated with pump equipment were observed on the northwestern portion of the subject property. According to Ms. Walker, Santa Clara Valley Water District (SCVWD) has easements on the subject property associated with the levee and pumping activities. A marker noting the presence of underground gas lines was observed on the northwest portion of the site. Additionally, underground water pipelines associated with the City of San Francisco Hetch-Hetchy water system are reportedly present along the southern property boundary.

Gas and electric service is provided in this region by Pacific Gas & Electric. Potable water and sanitary sewer services in this region are provided by the City of Milpitas.

2.6 Current Uses of Adjoining Properties

PES conducted a reconnaissance of the surrounding area to assess whether neighboring properties pose potential environmental concerns to the subject site. Adjacent land uses are identified on Plate 1. Adjacent properties are used for residential and commercial purposes. The results of our surrounding area reconnaissance are presented below.

Property to the North

The subject property is bordered on the north by Technology Drive (formerly Bellew Road) and Bellew Pump Station. Technology Drive ends at the pump station. Farther north across Technology Drive is KLA Tencor. An underground storage tank (UST) is registered at the Bellew Pump Station.

Property to the East

The subject property is bordered on the east by Murphy Ranch Road. Farther east, across Murphy Ranch Road, are Maxtor, vacant commercial buildings and Sumac Drive.

Property to the South

The subject property is bordered to the south by an access road and Murphy Ranch Pump Station. Farther south is Phoenix Technologies and Intersil.

Property to the West

The subject property is bordered to the west by a levee associated with Coyote Creek. Coyote Creek is present approximately 30 feet west of the subject property.

2.7 Past Uses of the Property and Adjoining Properties

Historical site use information was obtained through a review of historical aerial photographs and historical topographic maps. Sanborn Fire Insurance Maps were not available for the subject property area.

2.7.1 Aerial Photograph Review

Aerial photographs from June 24, 1951; July 22, 1963; August 11, 1971; October 4, 1976; July 7, 1982; June 28, 1988; July 20, 1992 and May 17, 1999 were provided digitally by Pacific Aerial Surveys in Oakland, California. The results of the aerial photograph review are as follows:

The Subject Property

Photographs from 1951 through 1999 show the subject property as agricultural land with orchards and field crops. In the 1971 photograph, some of the orchard has been replaced with field crops, and by the 1976 photograph, only field crops are observed.

In photographs from 1951 through 1988, at least 15 farm buildings are present along Coyote Creek. The majority of the buildings were present at the current location of the Coyote Creek levee, but approximately three to four small buildings may have been present along the western edge of the subject property. The 1992 photograph shows that some of the buildings have been removed. In the 1999 photograph, no buildings remain on the subject property.

Surrounding Properties

Aerial photographs from 1951 through 1982 show the subject property area as primarily undeveloped agricultural land. Some farm buildings are present immediately north of the subject property and southwest of the subject property across Coyote Creek. On the 1982 photograph, an additional building is present north of the subject property. The 1988 photograph shows the presence of the currently-existing Murphy Ranch and Bellew Pump Stations immediately south and north of the subject property, respectively. Murphy Ranch Road has been constructed. On the 1992 photograph, a commercial development has been

constructed east of the site across Murphy Ranch Road, and the buildings formerly present immediately north of the subject property have been removed. On the 1999 photograph, the subject property vicinity is shown as it currently exists, with commercial developments west across Coyote Creek, and north, east and south of the subject property. A levee topped by a dirt road has been constructed immediately west of the subject property.

2.7.2 Historical Topographic Maps

PES reviewed the Milpitas Quadrangle United States Geological Survey (USGS, 1979) 7.5-minute topographic map. The map shows the subject property as vacant. Three small structures are shown either on or immediately west of the subject property at the current location of the levee. The surrounding area is primarily vacant or orchards. Two small structures are present north of the site across Technology Drive, and a group of small structures is shown approximately 1,000 feet south of the subject property. A well is shown across Coyote Creek from the site, and Agnews State Hospital is shown farther southwest of the site across Coyote Creek.

2.7.3 Property Owner Interviews

PES contacted Ms. Walker, Ms. Sandy Izumi and Mr. Steve Mendez, current and former Lucent Technologies property managers for the subject property. Ms. Walker, the current property manager, was unable to locate the subject property historical file. As a result, no documentation concerning previous activities on the subject property was available.

The property managers reported that agricultural use of the subject property ended in approximately 2001, but that the field is disked on an annual basis. The property managers further reported that the City of Milpitas used the property for launching fireworks for approximately two years (2000 and 2001). None of the property managers had any recollection regarding removal and/or disposal of oil and fuel containers observed on the subject property during a previous Phase I ESA investigation (see Section 3.2, below).

Ms. Izumi reported that burrowing owls were observed on the subject property, and that relocation of the owls was performed in approximately 2001 under a permit from the California Fish and Game Department. Ms. Walker reported that the contractor who recently disked the property did not observe any burrowing owls.

Mr. Mendez recalled that a water well on the subject property was capped in approximately 2000, but he was unsure of the location of the well. Ms. Walker indicated that she thought the vents and pump equipment currently on the site were associated with SCVWD activities.

As noted above, according to Ms. Walker, Lucent has no formal lease agreement with the beekeeper that maintains the boxed beehives. Ms. Walker indicated there is an informal agreement with the beekeeper.

None of the property managers had any recollections of the demolition of the farm buildings on the subject property, or the presence or disposal of chemicals reportedly associated with the farm. The property managers indicated that, to their knowledge, no Phase II investigations had been performed on the subject property.

3.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

PES reviewed the following environmental reports previously prepared for the subject property and vicinity:

- August 28, 1997 report entitled *Phase I Environmental Site Assessment, OCTEL Communications Corporation* by Harding Lawson Associates (HLA); and
- October 31, 2000 report entitled *Report of Phase I Environmental Site Assessment, Vacant Parcel, Lucent Technologies, Inc., 1001 Murphy Ranch Road, Milpitas, California* by LawGibb Group (LawGibb).

The findings of the previous reports reviewed by PES are presented below.

3.1 1997 Phase I ESA

In October 1997, HLA performed an ESA for OCTEL-owned facilities and properties. A copy of the ESA is included in Appendix A. The subject property was included in the properties investigated by HLA. HLA's definition of the subject property is unclear, and appears to include the existing Murphy Ranch and Bellew Pump Stations and levee area as part of the subject property. Additionally, HLA's report is unclear in differentiating the historical uses between the subject property and property immediately south of the subject property.

At the time of HLA's ESA, the subject property was used for agricultural purposes. Several farm buildings were noted on or near the western property boundary. HLA noted the presence of an underground Hetchy-Hetchy underground water pipeline owned by the City of San Francisco running along the southern edge of the site.

HLA's historical research indicated that the subject property was in agricultural use from at least the 1950s. Houses, barns and sheds were observed along the western edge of the subject property beginning in the 1950s. HLA reported that, based on their review of a 1992 Preliminary ESA prepared by Hart Crowser (not provided to PES for review), pesticides and herbicides were mixed and used on the OCTEL property, and that Hart Crowser observed USTs and chemicals associated with farm buildings present on the OCTEL property. In HLA's report, it appears that USTs and pesticide mixing warehouse were present on the property immediately south of the subject property, but the report is unclear. No maps were provided identifying the discussed areas.

The HLA report is unclear regarding exact subject property boundaries; PES's research indicates the majority of the historical buildings were located immediately west of the subject property beneath the existing Coyote Creek levee (see Section 2.7).

HLA's review of regulatory agency databases and records identified a former LUST site at the northwest subject property boundary. A 500-gallon diesel UST was discovered and removed by SCVWD in September 1993, and was issued case closure following removal of contaminated soil. This site is discussed further in Section 4.3 as McCarthy Ranch at Bellew. HLA concluded there were no offsite sources which posed a significant environmental concern to the subject property.

Based on historical use of pesticides on the site, and the unknown disposition of chemicals historically observed at the site, HLA recommended that a limited Phase II investigation be performed to evaluate potential impacts to the subject property.

3.2 2000 Phase I ESA

In October 2000, LawGibb Group performed an ESA for the subject property (LawGibb, 2000). A copy of the ESA is included in Appendix B.

At the time of LawGibb's site inspection, the subject property was undeveloped and in agricultural use. LawGibb noted the presence of a 5-gallon container of oil and an approximately 100-gallon aboveground storage tank (AST) at the northwest corner of the subject property near the Bellew Pump Station. The use and owners of the containers was unknown by the property owners. LawGibb also noted the presence of burrows associated with the endangered burrowing owl. A marsh area was observed in the northwestern portion of the subject property near pumping equipment. LawGibb did not identify any wetlands designation of the area.

LawGibb's historical research confirmed that the site had been used for agricultural purposes since at least the 1950s. LawGibb reported that a farm with multiple structures was historically present at the current location of the levee. The property owner reported to LawGibb that the site was used by the City of Milpitas for Fourth of July fireworks displays.

No offsite sources of environmental concern were identified by LawGibb.

Based on the historical pesticide use at the site, and the unknown historical chemical handling and storage practices at the site, LawGibb recommended that a Phase II investigation be performed to evaluate potential impacts to the subject property. LawGibb also recommended that the cause for the marsh area be evaluated, that the site be inspected for the presence of burrowing owls during their nesting season, and that oil and fuel containers observed on the site be appropriately disposed.

4.0 RECORDS REVIEW

4.1 Environmental Liens

Based on review of an environmental database search conducted by Environmental Data Resources, Inc. (EDR), there are no Federal Superfund (NPL) liens or State deed restrictions associated with the subject property.

4.2 Standard Environmental Record Sources

The discussion presented in this section is based on available information provided by government agencies and various databases of reported sites that may be of potential hazardous material concern to the subject property. An EDR report dated August 3, 2004 contains listings of sites located within a 1-mile radius which were selected in accordance with ASTM E-1527-00 standards. This information is obtained from computerized databases of Federal, State and local records. Descriptions of the lists reviewed are presented below. The EDR database report is included as Appendix C.

The following regulatory agency databases were searched and reported in the EDR report:

- U.S. Environmental Protection Agency (EPA) – Comprehensive Environmental Response Compensation, and Liability Information System (CERCLIS) – within ½ mile of the subject property;
- U.S. EPA – CERCLA National Priority List (NPL) – within 1 mile of the subject property;
- California Department of Toxic Substances Control (DTSC) – Hazardous Waste Sites (CAL-SITES) – within 1 mile of the subject property;
- California State Water Resources Control Board (SWRCB) – Leaking Underground Storage Tank (LUST) Incident Reports – within ½ mile of the subject property;
- California EPA/Office of Emergency Protection – Hazardous Waste and Substance Site List (CORTESE List) – within 1 mile of the subject property;
- U.S. EPA – Resource Conservation and Recovery Information System (RCRIS), Treatment, Storage, or Disposal (TSD) facilities (within ½ mile of the subject property) and Small Quantity and Large Quantity Generators of hazardous waste (SQG and LQG) databases – within ¼ mile of the subject property;
- Regional Water Quality Control Board (RWQCB) – Spills, Leaks, Investigation and Cleanups (SLIC) database – within ½ mile of the subject property;

- SWRCB – Hazardous Substance Storage Container Database (USTs) and California EPA Facility Inventory Database (FID) – within ¼ mile of the subject property;
- U.S. EPA – Emergency Response Notification System (ERNS) – the subject property;
- California Integrated Waste Management Board – Solid Waste Information System (SWIS) – within ½ mile of the subject property;
- California EPA Hazardous Waste Information System (HAZNET) – within ¼ mile of the subject property;
- U.S. EPA RCRA Corrective Action Report (CORRACTS) – within 1 mile of the subject property;
- U.S. EPA Facility Index System (FINDS) – the subject property; and
- U.S. EPA Toxic Chemical Release Inventory System (TRIS) – the subject property.

4.3 Regulatory Agency Database Report Summary

The subject property is not listed on any of the databases searched.

Several sites in the vicinity of the subject property are identified as having documented releases of hazardous materials. The sites closest to the subject property are discussed below.

Murphy Ranch Pump Station, 801 Murphy Ranch Road is located adjacent to the southwest corner of the subject property. The site, which is owned by the City of Milpitas, is listed on the LUST, CORTESE and FID databases. A 2,000-gallon diesel UST and associated piping was removed from the site in July 1995 which was replaced with a currently-existing AST. Approximately 475 cubic yards (cy) of soil contaminated with total petroleum hydrocarbons quantified as diesel (TPHd) was excavated and disposed offsite. The maximum concentration of TPHd detected in soil was 1,400 milligrams per kilogram (mg/kg). Three groundwater monitoring wells were installed at the site. TPHd was detected at 230 micrograms per liter (ug/L) in a grab groundwater sample collected from the UST excavation. TPHd was not detected in groundwater collected from the monitoring wells at levels above laboratory reporting limits for four successive quarters. Regulatory case closure was issued in November 1998. Groundwater flow to the southeast was measured at this site, which is inconsistent with the northwesterly groundwater flow typically encountered in the Milpitas area. Groundwater flow may be affected by the subsurface Hetch-Hetchy pipelines present in the area and/or Coyote Creek. Based on the remedial activities and lack of detectable contaminants in groundwater, this site is not expected to pose a significant environmental concern to the subject property.

McCarthy Ranch at Bellew is a SCVWD-owned site located near the northwestern subject property boundary, and is listed on the CORTESE and LUST databases. Because historical

reports were not available for review from SCVWD or RWQCB, the exact location of the former UST is unknown. A 500-gallon UST was encountered and removed by SCVWD during levee construction activities in 1993. Five trenches, extending 25 - 35 feet radially away from the UST were dug to identify the extent of contaminated soil. Approximately 1,280 cy of soil was removed from the site and disposed offsite. Maximum detected concentrations of TPH quantified as gasoline (TPHg) and TPHd in soil were 1,800 and 28,000 mg/kg, respectively. No contaminants were detected in grab groundwater samples collected from the trenches, or from one groundwater monitoring well installed at the site. The RWQCB issued case closure for the site in April 1996. Based on the remedial activities and lack of detectable contaminants in groundwater, this site is not expected to pose a significant environmental concern to the subject property.

McCarthy Ranch, McCarthy Boulevard and Magnolia Street (currently Murphy Ranch Road) is located approximately 1/4 mile southeast of the subject property, and is listed on the CORTESE and LUST databases. Three USTs containing diesel and gasoline were removed from the site in 1988. Contaminated soil was overexcavated, aerated onsite and subsequently used as backfill. SCVWD records indicate that low levels of the pesticides DDT, DDE and DDD were detected in stockpiled soil. No contaminants were detected in a groundwater monitoring well installed at the site. Regulatory case closure was issued in June 1996. Based on the remedial activities and lack of detectable contaminants in groundwater, this site is not expected to pose a significant environmental concern to the subject property.

The remaining sites are not expected to present a significant environmental concern to the subject property based on one or more of the following: (1) the site is located down- or cross-gradient from the subject property with respect to the groundwater flow direction; (2) the release at the site is reported as having only affected soils; (3) the release at the site has been investigated and remediated under regulatory oversight; and/or (4) the site is situated at a distance too great to present a significant environmental concern.

5.0 SITE INSPECTION

PES personnel inspected the subject property on August 8, 2004 to assess the potential for environmental concerns related to the use or storage of hazardous materials at the subject site or surrounding properties. Observations from PES' site visit are discussed in the following sections. Photographs taken during the site inspection are included as Plates 3 through 6.

The subject property consists of an undeveloped lot covering approximately 21.7 acres at the southwest corner of Murphy Ranch Road and Technology Drive intersection in Milpitas, Santa Clara County, California (Plate 1). The site is bounded on the north by Technology Drive and Bellew Pump Station, on the east by Murphy Ranch Road, on the south by an access road and Murphy Ranch Pump Station, and on the west by a levee associated with Coyote Creek. Access to the subject property is obtained from Murphy Ranch Road, Technology Drive and the access road.

At the time of PES' site inspection, there were no buildings present at the site. The site consists of an unfenced field which appeared to have been recently disked. Evidence of previous weed and native growth was visible in the disked earth.

An area of apparent native growth was present at the northwestern portion of the site. This area was previously described as a marsh area (see Section 3.2); however, no evidence of standing water or saturated surface soil was observed during our site inspection. Small amounts of miscellaneous debris, including metal, concrete and building materials, were observed at various locations in the apparent native growth in the northwestern corner of the site. Vent pipes associated with pumping equipment was also present in this area. Stacks of boxed beehives were present near the vent pipes. According to the property manager, there is an informal agreement with the beekeeper for use of the site.

5.1 Chemicals/Hazardous Substances Containers

No indications of chemical use and/or storage were identified during PES' site inspection.

5.2 Storage Tanks

No indication of existing or historical onsite USTs or ASTs was found during PES' regulatory agency file reviews and site visit. No evidence of the oil and fuel containers identified in a 2000 Phase I ESA (Section 3.2) was observed.

5.3 Indications of PCBs

Two pad-mounted electrical transformers were observed on the subject property adjacent to Murphy Ranch Road. The transformers appeared new, and no evidence of leakage was observed.

An additional piece of equipment, which may be a transformer, was present at the southern property boundary. It was not clear whether the equipment was on the subject property or associated with the adjacent Murphy Ranch Pump Station. Some oily staining was observed on the concrete pad beneath the equipment, but the leakage did not appear to extend to soil.

5.4 Solid Waste Disposal

No solid waste is generated at the subject property.

5.5 Other Conditions of Concern

5.5.1 Asbestos Issues

Because there are no buildings currently at the site, asbestos is not considered an environmental concern at the subject property.

5.5.2 Lead-Based Paint Issues

Because there are no buildings currently at the site, lead-based paint is not considered an environmental concern at the subject property.

5.5.3 Radon Issues

The California Department of Health Services participated in the U.S. EPA's State Radon Survey which was conducted in 1990 to assess indoor radon levels in single-family homes. As part of the survey, homes in the subject property area were sampled for the presence of radon. The median value for radon levels was reported to be 0.4 pico curies per liter (pCi/l) of air for first floor living areas. This is significantly lower than the U.S. EPA's recommended action level of 4.0 pCi/l.

The State's survey indicates it is unlikely that radon levels in residences (or other above ground structures) in Milpitas are above the action level, and therefore, no radon testing is deemed necessary for this project.

6.0 FINDINGS AND CONCLUSIONS

The subject property consists of an undeveloped lot covering approximately 21.7 acres at 1001 Murphy Ranch Road in Milpitas, Santa Clara County, California. The site is bounded on the north by Technology Drive and Bellew Pump Station, on the east by Murphy Ranch Road, on the south by an access road and Murphy Ranch Pump Station, and on the west by a levee associated with Coyote Creek. The site is located in an area of Milpitas that is primarily office/commercial and light industrial use.

At the time of PES' site inspection, there were no buildings present at the site. The site consists of an unfenced field which appeared to have been recently disked. Evidence of previous weed and native growth was visible in the disked earth. An area of apparent native growth was present at the northwestern portion of the site which was previously described as a marsh area; however, no evidence of standing water or saturated surface soil was observed during our site inspection. Small amounts of miscellaneous debris, including metal, concrete and building materials, were observed at various locations in the apparent native growth in the northwestern corner of the site. Vent pipes associated with pumping equipment was also

present in this area. Stacks of boxed beehives were present near the vent pipes. There is no evidence of current hazardous material use at the subject property.

The results of PES' historical research indicates that the site has been used agriculturally since at least the 1950s. Approximately 15 farm buildings were historically present on or adjacent to the western subject property boundary. Pesticides and other chemicals were known to have been used and stored in the farm buildings, and pesticides and herbicides were reportedly applied to orchards and crops on the subject property. USTs were reportedly observed near farm buildings, but it is unclear if the observed USTs were on the subject property. Burrowing owls have been previously observed on the subject property. The burrowing owls were reportedly relocated under permit from the California Fish and Game Department.

PES' review of local, State and Federal regulatory agency databases revealed several documented hazardous material release sites located in the study area. The sites listed on hazardous material release databases are not expected to present a significant environmental concern to the subject property based on one or more of the following: (1) the site is located down- or cross-gradient from the subject property with respect to the groundwater flow direction; (2) the release at the site is reported as having only affected soils; (3) the release at the site has been investigated and remediated under regulatory oversight; and/or (4) the site is situated at a distance too great to present a significant environmental concern.

CONCLUSIONS

The following noteworthy observations were identified on the subject property during the Phase I ESA research and site inspection:

- The northwestern corner of the site was described as marsh area in a 2000 Phase I ESA report. No evidence of saturated surface soil or standing water was observed during PES' site inspection; however vernal pools or other seasonal wetlands indicators may not be readily observable in summer months;

- An apparent electrical transformer with evidence of an oil leak is present on the southern portion of the property;

- Burrowing owls, an endangered species, have historically been observed on the subject property. The owls were reportedly relocated under a permit from California Department of Fish and Game in 2001. Burrowing owls are known to re-nest in previously nested areas;

- Pesticides and other chemicals and USTs were reportedly associated with the farm and farm buildings historically present on the subject and adjacent properties. Exact locations of reported USTs and chemical use areas are unknown. Low levels of the pesticides DDT, DDT and DDD were detected in soil during remediation on previous agricultural land south of the subject property; and

- The subject property has been used by the City of Milpitas for fireworks display. Fireworks are known to contain perchlorate, a chemical which can affect groundwater quality and is subject to regulation.

No existing or historical recognized environmental conditions have been identified on the subject property.

PES recommends the following actions be implemented:

- Based on the unknown historical chemical use and storage practices on the subject property, PES recommends that a Phase II investigation be performed to evaluate soil and groundwater quality at the site;

- Due to uncertainty regarding the locations and removals of USTs reportedly associated with former farm buildings potentially located on the western portion of the subject property, a geophysical survey should be conducted to assess for the presence of USTs;

- Investigations should be performed to evaluate the potential presence of wetlands and endangered species at the subject property;

- Ownership of the electrical equipment at the southern property boundary should be identified and notified of the leakage from the equipment; and

- A copy of the permit issued by the California Fish and Game Department for the relocation of the burrowing owls should be obtained.

7.0 REFERENCES

Harding Lawson Associates (HLA), 1997. *Phase I Environmental Site Assessment, OCTEL Communications Corporation.* August 28.

LawGibb Group (LawGibb), 2000. *Report of Phase I Environmental Site Assessment, Vacant Parcel, Lucent Technologies, Inc., 1001 Murphy Ranch Road, Milpitas, California.* October 31.

United States Geological Survey, 1979. *Milpitas California Quadrangle, 7.5 Minute Series.*

Appendix F

A SUMMARY OF FINDINGS FROM THE MECHANICAL SUBSURFACE PRESENCE/ABSENCE TESTING OF THE MURPHY RANCH PROJECT AREA, MILPITAS, SANTA CLARA COUNTY, CALIFORNIA

PRESENTED TO:

DAVID J. POWERS & ASSOCIATES
1885 THE ALAMEDA
SAN JOSE, CALIFORNIA 95126

PREPARED BY:

MILEY PAUL HOLMAN
HOLMAN & ASSOCIATES
3615 FOLSOM STREET
SAN FRANCISCO, CA 94110

DECEMBER, 2005

INTRODUCTION

A program of mechanical backhoe testing was conducted by Holman & Associates at the Murphy Ranch property in Milpitas during the first and second weeks of December, 2005 to search for potentially buried prehistoric cultural resources. None were found. This report contains a summary of information gained to date.

PROJECT DESCRIPTION

The Murphy Ranch project consists of the development of two separate projects inside the 22 acre remnant of the larger Murphy Ranch property found on Murphy Ranch Road near its intersection with Technology Drive in Milpitas, Santa Clara County, California. The 14.5 acre Brookfield development will be on the southern portion of the project site and will consist of 262 multi family dwellings. The 7.58 Fairfield development will be on the northern portion of the site and will consist of 373 rental apartments. Currently zoned for an industrial park, a General Plan amendment will be needed to allow the construction of multi-family housing.

Currently the approximately22 acre parcel is an open field which is disced for weed removal but otherwise is not cultivated. Located on the Milpitas U.S.G.S. map, the borders of the property are existing industrial buildings on the north, the levee bordering Coyote Creek on the west, additional buildings on the south and Murphy Ranch Road on the east.

ARCHAEOLOGICAL BACKGROUND

An archaeological literature review was conducted by this author on September 9, 2005 at the Northwest Information Center (NWIC) located at Sonoma State University (file no. 05-264). Surprisingly this property has had little attention regarding cultural resources since it was first formally surveyed in 1980 by Robert Cartier. There are no prehistoric sites located inside the project borders, and the nearest formally recorded prehistoric site, Scl-675, is found southwest of the project area on the other side of Coyote Creek inside the Agnews hospital grounds.

The Murphy Ranch property has however been the object of considerable interest because of the historical structures which stood on it until the early 1990s when they evidently were all removed. A summary of those cultural resource studies on file at the NWIC is given below.

The first formal survey of the property was conducted in 1980 by Robert Cartier in the process of inspecting the larger Perry and Ariallaga Ranches, a total of 400 acres. Cartier performed a survey for prehistoric resources which was negative, but did note the presence of numerous buildings from the middle to late 19th century which were potentially significant. While he had little to say about potentially buried prehistoric resource areas, he did recommend further work be done on the standing structures at a minimum.

Cartier's recommendations were not followed up on until 1986, when Basin Research Associates contracted with Michael Corbett to provide studies (Corbett 1986a,b) of the Bellew-McCarthy Ranch complex and the adjacent Shaughnessy-Murphy Ranch complex, the latter which includes all of the current project area.

Both ranch complexes were found to be eligible for inclusion on the National Register by Corbett. His two reports, which contain extensive histories of the families and descriptions of the extant buildings, made a series of recommendations, the least of which was the photo-documentation of the buildings for archival purposes.

Interestingly, the NWIC does not possess any additional reporting by Basin Research Associates regarding the issue of prehistoric resources; it is assumed by this author that the 1980 Cartier report was deemed sufficient and that no further compelling information existed which would have inspired Basin to request that additional archaeological research be done at either ranch location.

Mitigation of impacts was delayed until 1993, when Robert Cartier was brought back to the Shaughnessy-Murphy Ranch to photo-document it as requested by Corbett in 1986. At some point thereafter the buildings were removed, resulting in the empty field now comprising the current project area. It is assumed that the adjacent industrial park developments led to the destruction of the buildings of the Bellow-McCarthy Ranch as well; no photo-documentation of this complex resides at the NWIC.

Renewed interest in the remaining 22 acre portion of the Murphy Ranch began in the fall of 2005 when Holman & Associates was asked to complete a new cultural resources literature review for the property. Noting the 1980 Cartier report and citing more recent examples of the discovery of buried prehistoric cultural resource deposits on either side of Coyote Creek, Holman & Associates recommended that a new visual inspection of the field be conducted and that a limited program of mechanical subsurface presence/absence testing be completed to search for potentially buried prehistoric deposits.

DESCRIPTION OF FIELD WORK

A visual inspection of the project area was conducted by Miley Holman and Matthew Clark of Holman & Associates during the first week of December, 2005. Survey conditions were ideal at the time, since the vegetation had been removed by a recent discing and there had been a recent rain to clear the surface.

The entire project area shows a uniform layer of silty loamy soil almost entirely devoid of rock, either imported or native. No prehistoric cultural resources were seen at any point inside the borders of the project, nor were any historic deposits associated with the former Murphy Ranch complex discovered.

DESCRIPTION OF BACKHOE TESTING

A total of 4 days were reserved to complete the mechanical subsurface testing of the project area to search for archaeological deposits which may have existed under the uniform layer of silt found there. Existing utility corridors identified by the Underground Services Alert inspection eliminated portions of the property, mainly at the southern end, thus reducing the backhoe testing (see map) to a two day program.

Excluding those areas containing utility corridors, a total of 32 trenches were cut at regular intervals over the remaining open portions of the property (see map and trench log). Utilizing a 24 inch bucket mounted on a backhoe, all trenches were cut to an average depth of 2 meters below the current surface to search for buried archaeological soil horizons; numerous such deposits have been located on both banks of Coyote Creek upstream of the Murphy Ranch, buried under layers of silt averaging a meter in depth. In other areas historical filling activities has led to deeper buried archaeological soil deposits (midden).

The findings of the backhoe trenching operation reveal a continuous homogeneous layer of dark to light brown silts and clays containing little to no gravels or other indications of fast running water, suggesting that this portion of the Coyote Creek riparian zone was built up by slowly moving flood waters which inundated the area for long periods. The pattern of silty clay to a clay matrix extends from the banks of the Coyote inland to Murphy Ranch Road with no alteration. Despite all the former evidence of historic ranch use, no concentrations of historic material were seen anywhere inside the project zone, either on the surface or in any of the trenches.

FINDINGS/RECOMMENDATIONS

In summary, no evidence of historic and/or prehistoric archaeological deposits were found anywhere inside the project area. In spite of the fact that backhoe testing could not be done in the southernmost end of the project area because of buried utilities, it is the finding of this report that future development of this parcel should have no effect on archaeological materials of any type.

This report does not recommend that future construction related earthmoving activities be monitored by an archaeologist. Construction crews involved specifically in deep trenching inside the project borders should be warned of the possibility of the discovery of deeply buried archaeological materials which might be encountered under the two meter limit of the trenching completed by Holman & Associates. In the event that any of the indicators described below are encountered, work should be stopped within 50 feet of the discovery until a qualified archaeologist has been retained to inspect the find. If it is determined that a potentially significant archaeological resource will be impacted by further construction related work, a plan for the evaluation of the resource should be submitted by the project archaeologist to the City of Milpitas Planning Department for approval. If subsequent field testing (hand excavation)

demonstrates that the area contains an archaeological resource eligible for inclusion on the California Register of Historic Resources (CRHR), a plan for mitigation of impacts to the resource should be submitted to the Milpitas Planning Department for approval. Mitigation can take the form of additional hand excavation to retrieve data combined with archaeological monitoring of all project related earthmoving inside the resource boundaries to assure that all significant cultural materials are recorded and/or removed for future analysis along with any human remains and associated grave goods.

Archaeological site indicators can include but are not limited to the following: evidence of buried topsoil layers, evidence of fires (ash, charcoal, fire affected rock or earth), concentrations of stone, bone or shellfish in buried topsoil horizons or layers of silt, artifacts of these materials, and burials, either animal or human.

REFERENCES CITED

Cartier, Robert
1980 CULTURAL RESOURCE EVALUATION FOR THE PERRY AND ARIALLAGA PROJECT IN MILPITAS, CA. On file, Northwest Information Center (NWIC) file no. S-8545

Corbett, Michael
1986a ARCHITECTURAL AND HISTORICAL ASSESSMENT OF THE SHAUGHNESSY-MURPHY RANCH MILPITAS, CALIFORNIA. On file, NWIC File no. S-8257

1986b ARCHITECTURAL AND HISTORICAL ASSESSMENT OF THE BELLEW-MCCARTHY RANCH MILPITAS, CALIFORNIA. On file, NWIC file no. 8258

TRENCHING RECORD

Project/Site No.: Murphy Ranch Road			Date: 12/09/05
Recorder(s): I. Alexander, J. Belk			Trench Size: 2′ W by 7′ L
Location: Milpitas, CA			Screen Size: 1/8″
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
1	0-59	Med-light yellow-brown silt. Med. grained/friable.	None.
""	59-101	Med-light yellow-brown silt; very fine grained.	""
""	101-140	Dark-med brown silt clay; moderately compacted containing small sub-angular gravels. Abrupt trans.	""
""	140-219	Dark-med brown silt clay; larger gravels and some sand.	""
2	0-46	Med-light yellow-brown silt. Med. grained/friable.	None.
""	46-111	Med-light yellow-brown silt; very fine grained.	""
""	111-160	Dark-med brown silt clay; moderately compacted containing small sub-angular gravels.	""
""	160-231	Dark-med brown silt clay; increase in clay content.	""
3	0-43	Med-light yellow-brown silt; slightly compacted.	None.
""	43-87	Med-light yellow-brown silt; w/ visible sand lenses.	""
""	87-132	Dark-med brown silt clay; moderately compacted.	""
""	132-209	Dark-med brown silt clay; containing large sub-angular gravels (5-7cm in diam.)	""
4	0-25	Plowzone - Med-light yellow-brown silt mixed with decomposing organics.	None.
""	25-64	Med-light yellow-brown silt; slightly compacted.	Carbon flecks.
""	64-78	Med-light yellow-brown silt; less compaction.	None.
""	78-121	Dark-med brown silt clay; moderately compacted.	""
""	121-188	Dark-med brown silt clay; mottled and slightly moist.	""
""	188-218	Dark-med brown silt clay; more moist w/ depth.	""
5	0-26	Plowzone.	None.

TRENCHING RECORD

Project/Site No.: Murphy Ranch Road			Date: 12/09/05
Recorder(s): I. Alexander, J. Belk			Trench Size: 2′ W by 7′ L
Location: Milpitas, CA			Screen Size: 1/8″
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
5 cont	26-51	Med-light yellow-brown silt; slightly compacted.	None.
""	51-77	Med-light yellow-brown silt; less compaction.	""
""	77-125	Dark-med brown silt clay; moderately compacted.	""
""	125-209	Dark-med brown silt clay; more moist w/ depth.	""
6	0-15	Plowzone.	None.
""	15-56	Med-light yellow-brown silt; slightly compacted.	""
""	56-78	Med-light yellow-brown silt; less compaction.	""
""	78-135	Dark-med brown silt clay; moderately compacted.	""
""	135-207	Dark-med brown silt clay; moist.	""
7	0-21	Plowzone.	None.
""	21-66	Med-light yellow-brown silt; slightly compacted.	""
""	66-103	Med-light yellow-brown silt; less compaction.	""
""	103-196	Dark-med brown silt clay; moderately compacted.	""
""	196-215	Dark-med brown silt clay; moist.	""
8	0-17	Plowzone.	None.
""	17-45	Med-light yellow-brown silt; slightly compacted.	""
""	45-71	Med-light yellow-brown silt; less compaction.	""
""	71-152	Dark-med brown silt clay; moderately compacted.	""
""	152-245	Dark-med brown silt clay; moist.	""
9	0-43	Plowzone.	None.

TRENCHING RECORD

Project/Site No.: Murphy Ranch Road			Date: 12/09/05
Recorder(s): I. Alexander, J. Belk			Trench Size: 2′ W by 7′ L
Location: Milpitas, CA			Screen Size: 1/8″
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
9 cont	43-72	Med-light yellow-brown silt; slightly compacted.	None.
""	72-223	Dark-med brown silt clay; moderately compacted.	""
10	0-52	Plowzone.	None.
""	52-83	Med-light yellow-brown silt; slightly compacted.	""
""	83-151	Med-light yellow-brown silt; less compaction.	""
""	151-205	Dark-med brown silt clay; moderately compacted.	""
11	0-48	Plowzone.	None.
""	48-67	Med-light yellow-brown silt; slightly compacted.	""
""	67-214	Dark-med brown silt clay; moderately compacted.	""
12	0-31	Plowzone.	None.
""	31-69	Med-light yellow-brown silt; less compaction.	""
""	69-180	Dark-med brown silt clay; moderately compacted.	""
""	180-253	Dark-med brown silt clay; moist.	""
13	0-20	Plowzone.	None.
""	20-58	Med-light yellow-brown silt; slightly compacted.	""
""	58-202	Dark-med brown silt clay; moderately compacted.	""
14	0-21	Plowzone.	None.
""	21-81	Med-light yellow-brown silt; slightly compacted.	""
""	81-156	Dark-med brown silt clay; moderately compacted.	""

TRENCHING RECORD

Project/Site No.: Murphy Ranch Road			Date: 12/12/05
Recorder(s): I. Alexander, J. Belk			Trench Size: 2′ W by 7′ L
Location: Milpitas, CA			Screen Size: 1/8″
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
14 cont	156-204	Dark-med brown silt clay; moist.	None.
15	0-17	Plowzone.	None.
""	17-63	Med-light yellow-brown silt; less compaction.	""
""	63-141	Dark-med brown silt clay; moderately compacted.	""
""	141-201	Dark-med brown silt clay; moist.	""
16	0-22	Plowzone.	None.
""	22-61	Med-light yellow-brown silt; less compaction.	""
""	61-181	Dark-med brown silt clay; moderately compacted.	""
	181-202	Dark-med brown silt clay; moist.	""
17	0-25	Plowzone.	None.
""	25-80	Med-light yellow-brown silt; less compaction.	""
""	80-171	Dark-med brown silt clay; moderately compacted.	""
""	171-205	Dark-med brown silt clay; moist.	""
18	0-28	Plowzone.	None.
""	28-81	Med-light yellow-brown silt; slightly compacted.	""
""	81-189	Med-light yellow-brown silt; less compaction.	""
""	189-251	Dark-med brown silt clay; moderately compacted.	""
19	0-24	Plowzone.	None.
""	24-73	Med-light yellow-brown silt; slightly compacted.	""

TRENCHING RECORD

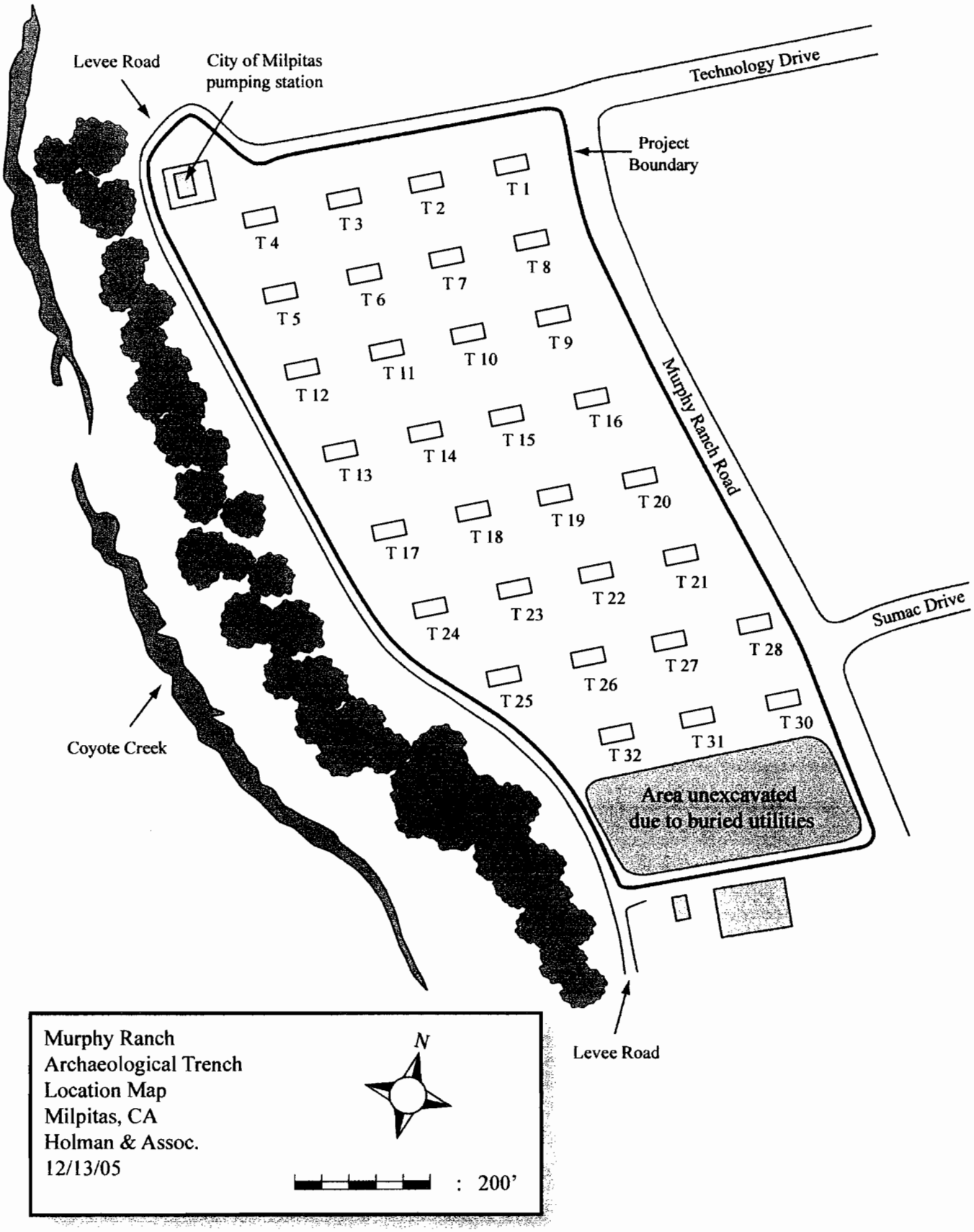
Project/Site No.: Murphy Ranch Road			Date: 12/12/05
Recorder(s): I. Alexander, J. Belk			Trench Size: 2′ W by 7′ L
Location: Milpitas, CA			Screen Size: 1/8″
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
19 cont	73-166	Dark-med brown silt clay; moderately compacted.	None.
""	166-215	Dark-med brown silt clay; moist.	""
20	0-21	Plowzone.	None.
""	21-91	Med-light yellow-brown silt; slightly compacted.	""
""	91-163	Med-light yellow-brown silt; less compaction.	""
""	163-207	Dark-med brown silt clay; moderately compacted.	""
21	0-22	Plowzone.	None.
""	22-58	Med-light yellow-brown silt; slightly compacted.	""
""	58-92	Med-light yellow-brown silt; less compaction.	""
""	92-153	Dark-med brown silt clay; moderately compacted.	""
""	153-209	Dark-med brown silt clay; moist.	""
22	0-23	Plowzone.	None.
""	23-57	Med-light yellow-brown silt; slightly compacted.	""
""	57-78	Med-light yellow-brown silt; less compaction.	""
""	78-149	Dark-med brown silt clay; moderately compacted.	""
""	149-210	Dark-med brown silt clay; moist.	""
23	0-19	Plowzone.	None.
""	19-71	Med-light yellow-brown silt; slightly compacted.	""
""	71-161	Dark-med brown silt clay; moderately compacted.	""
""	161-228	Dark-med brown silt clay; moist.	""

TRENCHING RECORD

Project/Site No.: Murphy Ranch Road			Date: 12/12/05
Recorder(s): I. Alexander, J. Belk			Trench Size: 2′ W by 7′ L
Location: Milpitas, CA			Screen Size: 1/8″
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
24	0-78	Plowzone.	None.
""	78-160	Med-light yellow-brown silt; slightly compacted.	""
""	160-237	Dark-med brown silt clay; moderately compacted.	""
25	0-22	Plowzone.	None.
""	22-46	Med-light yellow-brown silt; slightly compacted.	""
""	46-71	Med-light yellow-brown silt; less compaction.	""
""	71-173	Dark-med brown silt clay; moderately compacted.	""
""	173-252	Dark-med brown silt clay; moist.	""
26	0-18	Plowzone.	None.
""	18-39	Med-light yellow-brown silt; slightly compacted.	""
""	39-62	Med-light yellow-brown silt; less compaction.	""
""	62-164	Dark-med brown silt clay; moderately compacted.	""
""	164-208	Dark-med brown silt clay; moist.	""
27	0-21	Plowzone.	None.
""	21-49	Med-light yellow-brown silt; slightly compacted.	""
""	49-70	Med-light yellow-brown silt; less compaction.	""
""	70-148	Dark-med brown silt clay; moderately compacted.	""
""	148-203	Dark-med brown silt clay; moist.	""
28	0-18	Dark-med brown silt clay; moderately compacted.	""
""	18-42	Dark-med brown silt clay; moist.	""

TRENCHING RECORD

Project/Site No.: Murphy Ranch Road			Date: 12/12/05
Recorder(s): I. Alexander, J. Belk			Trench Size: 2′ W by 7′ L
Location: Milpitas, CA			Screen Size: 1/8″
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
28 cont.	42-68	Plowzone.	None.
""	68-142	Med-light yellow-brown silt; slightly compacted.	""
""	142-230	Dark-med brown silt clay; moderately compacted.	""
29	0-19	Plowzone.	None.
""	19-39	Med-light yellow-brown silt; slightly compacted.	""
""	39-82	Med-light yellow-brown silt; less compaction.	""
""	82-161	Dark-med brown silt clay; moderately compacted.	""
""	161-202	Dark-med brown silt clay; moist.	""
30	0-18	Plowzone.	None.
""	18-37	Med-light yellow-brown silt; slightly compacted.	""
""	37-69	Med-light yellow-brown silt; less compaction.	""
""	69-143	Dark-med brown silt clay; moderately compacted.	""
""	143-209	Dark-med brown silt clay; moist.	""
31	0-20	Plowzone.	None.
""	20-34	Med-light yellow-brown silt; slightly compacted.	""
""	34-57	Med-light yellow-brown silt; less compaction.	""
""	57-150	Dark-med brown silt clay; moderately compacted.	""
""	150-178	Construction Sand – large grained, imported sand. Trench 31 halted @ 178 cmbs.	Sand.
32	0-45	Plowzone.	None.
	45-165	Construction Sand – large grained, imported sand. Trench 32 halted @ 165 cmbs.	Sand.


Levee Road
City of Milpitas pumping station
Technology Drive
Project Boundary
T 1
T 2
T 3
T 4
T 5
T 6
T 7
T 8
T 9
T 10
T 11
T 12
T 13
T 14
T 15
T 16
T 17
T 18
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T 20
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T 25
T 26
T 27
T 28
T 30
T 31
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Murphy Ranch Road
Sumac Drive
Coyote Creek
Area unexcavated due to buried utilities
Levee Road
Murphy Ranch
Archaeological Trench
Location Map
Milpitas, CA
Holman & Assoc.
12/13/05
N
: 200'

Appendix G

Murphy Ranch Road Residential

Transportation Impact Analysis

Prepared for:

David J. Powers and Associates

Prepared by:

Hexagon Transportation Consultants, Inc.

December 18, 2006

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Executive Summary

This report presents the results of the traffic impact analysis conducted for the proposed Murphy Ranch Road residential development in Milpitas, California. The site is currently vacant. The project as proposed would consist of 659 residential units (285 multi-family dwelling units and 374 apartments). Access to the site will be provided via Murphy Ranch Road and Technology Drive. Parking would be provided onsite. The proposed project would require a change in the existing General Plan designation of the project site from Industrial to Residential.

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of Milpitas and the Congestion Management Program (CMP) of Santa Clara County. The study included an analysis of AM and PM peak-hour traffic conditions for 19 signalized intersections, 4 unsignalized intersections, and 10 directional freeway segments in the vicinity of the project site.

Project Trip Generation and Distribution

The magnitude of traffic generated by the proposed project was estimated by applying to the size of the development the applicable trip generation rates. On the basis of the trip generation rates recommended by the San Diego Association of Governments (SANDAG), it is estimated that the project would generate 362 trips during the AM peak hour and 430 trips during the PM peak hour. The trip distribution pattern for the proposed project was based on existing travel patterns and the locations of complementary land uses.

Intersection Impacts and Mitigation

Project impacts were determined based on the appropriate significance criteria. The results of the intersection level of service analysis show one of the signalized study intersections would be impacted by the project (see Table ES-1).

Significant Impact: The intersection of McCarthy Boulevard/Tasman Drive would operate at LOS D under background conditions. Under project conditions it would operate at LOS E. According to the City of Milpitas guidelines, this would constitute a significant impact.

Mitigation: To mitigate this impact, southbound McCarthy Boulevard would need to be re-striped from the existing two left-turn lanes, one through lane, and one shared right/through lane to two left-turn lanes, one through lane, and one right-turn lane. An overlap phase for the southbound right turn movement would also be included. This mitigation measure would allow the intersection to operate at LOS D during the AM peak hour and LOS C during the PM peak hour.

Project Freeway Segment Impacts

Traffic volumes on the study freeway segments under project conditions were estimated by adding project trips to the existing volumes obtained from the 2004 CMP Annual Monitoring Report. The results show that the project would not cause a significant increase in traffic volume (more than one percent of capacity) on any of the study freeway segments.

North San Jose Deficiency Plan Impacts

The impacts of the proposed project also were evaluated using the North San Jose Plan (NSJDP) criteria. To remain consistent with NSJDP methods, only San Jose's approved trips were used in the background condition calculation. Under background conditions, the 22-intersection average delay was 77 seconds using TRAFFIX software. With the addition of project traffic, the 22-intersection average would remain at 77 seconds. According to the NSJDP impact criteria, the proposed development would not impact North San Jose, and therefore, mitigation would not be required.

Signal Warrant Impacts

The peak-hour signal warrant was checked for the four unsignalized intersections to determine whether signalization would be justified on the basis of project peak-hour volumes. The analysis showed that under project conditions the intersection of McCarthy Boulevard and Murphy Ranch Road would meet the signal warrant during the PM peak hour. The other three unsignalized study intersections do not meet the peak-hour volume warrant.

The two primary unsignalized intersections that project traffic would use to access McCarthy Boulevard are Murphy Ranch Road/McCarthy Boulevard and Sumac Drive/McCarthy Boulevard. Under project conditions, the traffic volume on Sumac Drive would not be sufficient to warrant a traffic signal. However, the minor street approach is projected to operate at a poor LOS. The intersection of Murphy Ranch Road/McCarthy Boulevard would warrant a signal during the PM peak hour. Given the number of vehicle trips at the subject intersections and the layout of the street network, only one traffic signal would be necessary. Since a traffic signal already exists to the north of the project site at Technology Drive/McCarthy Boulevard, it is recommended that a traffic signal be installed at the intersection of Murphy Ranch Road/McCarthy Boulevard to facilitate project access to the south.

Year 2030 Cumulative Traffic Impacts

The proposed project would require a General Plan amendment (GPA). GPA conditions were evaluated relative to the existing General Plan in order to determine potential impacts. According to City of Milpitas and CMP standards, the proposed GPA would not create any adverse significant impacts.

The proposed GPA would have a beneficial impact on ***eight*** roadway segments during the AM and PM peak hours. Thus, the proposed GPA would predominately benefit overall traffic operations in the area relative to the existing general plan. This is primarily because the residential trips generated by the GPA would be located in close proximity to the surrounding employment uses, thereby shortening trips for commuters.

In the past, the City of Milpitas has required development projects that would contribute traffic on regional roadways such as Calaveras Boulevard and Montague Expressway contribute monetarily to planned improvements. For the planned Montague Expressway improvements, the City has adopted a fee program for properties located in the Milpitas Business Park. For the planned improvements to Calaveras Boulevard, the City does not have an adopted development fee program, but has been collecting new development contributions towards improvements as mitigation for significant impacts. Monetary contributions are typically calculated based on the number of project trips added to a roadway and the cost of the planned improvements. The proposed project would contribute traffic to Calaveras Boulevard and Montague Expressway, and therefore, would likely be required by the City to make "fair share" contributions towards the planned improvements.

Table ES 1
Intersection Level of Service Summary

Intersection	Peak Hour	Count Date	Existing Ave. Delay	Existing LOS	Background Ave. Delay	Background LOS	Project Conditions Ave. Delay	Project Conditions LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
McCarthy Blvd and Ranch Dr (N)	AM	11/29/005	6.6	A	18.7	B	18.7	B	0.0	0.001
	PM	11/29/005	10.8	B	20.2	C	20.2	C	0.1	0.002
McCarthy Blvd and Ranch Dr (S)	AM	5/24/05	16.8	B	19.2	B	19.3	B	0.2	0.005
	PM	5/24/05	22.7	C	43.1	D	44.1	D	2.1	0.005
Abel St and SR 237 (Calaveras Blvd)*	AM	10/6/04	37.3	D	43.1	D	43.3	D	0.3	0.003
	PM	5/26/05	38.2	D	61.7	E	62.2	E	0.8	0.003
Milpitas Blvd and SR 237 (Calaveras Blvd)*	AM	10/6/04	55.8	E	82.3	F	82.9	F	1.2	0.003
	PM	5/26/05	40.0	D	41.9	D	42.2	D	0.5	0.008
McCarthy Blvd and Bellew Dr	AM	5/24/05	19.0	B	27.5	C	28.9	C	0.0	0.001
	PM	5/24/05	33.6	C	50.9	D	54.8	D	7.4	0.039
McCarthy Blvd and Alder Dr	AM	11/17/05	11.6	B	15.5	B	15.2	B	0.0	0.003
	PM	11/17/05	16.7	B	53.2	D	54.2	D	1.8	0.004
I-880 NB and Great Mall Pkwy	AM	5/12/05	24.6	C	44.4	D	45.1	D	1.0	0.003
	PM	5/12/05	19.3	B	29.1	C	29.2	C	0.1	0.003
I-880 SB and Tasman Dr	AM	5/12/05	13.6	B	22.7	C	22.9	C	0.1	0.003
	PM	5/12/05	13.1	B	27.1	C	27.3	C	1.7	0.007
McCarthy Blvd and Tasman Dr	AM	5/12/05	31.9	C	53.1	D	57.9	E	7.3	0.023
	PM	5/12/05	24.6	C	35.5	D	36.8	D	1.0	0.012
Alder Dr and Tasman Dr	AM	5/12/05	14.9	B	21.4	C	21.7	C	0.0	0.002
	PM	5/12/05	36.9	D	131.9	F	132.9	F	2.5	0.006
McCarthy Blvd/O'Toole and Montague Expwy*	AM	5/12/05	41.9	D	59.5	E	60.7	E	1.6	0.012
	PM	10/10/04	60.5	E	133.6	F	137.4	F	3.7	0.008
McCarthy Blvd and Barber Ln	AM	11/15/05	9.8	A	9.6	A	9.7	A	0.0	0.005
	PM	11/15/05	19.7	B	20.6	C	20.8	C	0.2	0.009
McCarthy Blvd and Cottonwood Dr	AM	11/15/05	13.0	B	15.4	B	15.6	B	0.1	0.005
	PM	11/15/05	15.5	B	16.1	B	16.4	B	0.1	0.009
McCarthy Blvd and Sycamore Dr	AM	11/15/05	10.6	B	9.9	A	10.9	B	1.0	0.006
	PM	11/15/05	13.1	B	12.2	B	12.2	B	-0.2	0.009

Table ES 1 (continued)
Intersection Level of Service Summary

Intersection	Peak Hour	Count Date	Existing Ave. Delay	Existing LOS	Background Ave. Delay	Background LOS	Project Conditions Ave. Delay	Project Conditions LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
McCarthy Blvd and Dixon Landing Rd	AM	11/16/05	11.8	B	13.8	B	14.1	B	0.0	0.001
	PM	11/16/05	9.5	A	10.6	B	10.9	B	0.3	0.003
SR 237 and McCarthy Blvd (W)	AM	5/24/05	15.2	B	15.2	B	15.5	B	0.4	0.022
	PM	5/24/05	16.6	B	19.6	B	20.2	C	1.1	0.013
SR 237 and McCarthy Blvd (E)	AM	5/24/05	15.2	B	16.8	B	17.0	B	1.0	0.040
	PM	5/24/05	15.7	B	19.4	B	20.1	C	0.7	0.016
Barber Ln and Bellew Dr	AM	5/24/05	12.6	B	12.6	B	12.6	B	0.0	0.000
	PM	5/24/05	18.6	B	18.6	B	18.6	B	0.0	0.000
Murphy Ranch Rd and Technology Dr (unsignalized)[1]	AM	11/17/05	7.7	A	7.7	A	8.2	A	0.6	0.071
	PM	11/17/05	7.4	A	7.4	A	8.2	A	0.9	0.115
Murphy Ranch Rd and Sumac Dr (unsignalized)[2]	AM	11/16/05	8.9	A	8.9	A	10.9	B	-	-
	PM	11/16/05	8.9	A	8.9	A	11.2	B	-	-
McCarthy Blvd and Sumac Dr (unsignalized)[2]	AM	11/16/05	27.9	D	Sat.	F	Sat.	F	-	-
	PM	11/16/05	46.8	E	Sat.	F	Sat.	F	-	-
McCarthy Blvd and Murphy Ranch Rd (unsignalized)[2]	AM	11/17/05	11.3	B	11.5	B	13.5	B	-	-
	PM	11/17/05	11.1	B	12.6	B	14.0	B	-	-
Zanker Rd and Tasman Dr	AM	11/17/05	34.3	C	36.0	D	36.5	D	0.8	0.005
	PM	11/17/05	35.7	D	43.8	D	44.8	D	1.7	0.007

* Denotes CMP intersection

[ ] - Denotes project impact.

[1] LOS for all-way stop intesection is based on the average of all movements.

[2] LOS for unsignalized intersection is based on worst leg.

Note: Sat. represents that the intersection is saturated and the delays are not meaningful.

1. Introduction

This report presents the results of the traffic impact analysis conducted for the proposed Murphy Ranch Road residential development in Milpitas, California. The site is currently vacant. The project as proposed would consist of 659 residential units (285 multi-family dwelling units and 374 apartments). Access to the site will be provided via Murphy Ranch Road and Technology Drive. Parking would be provided onsite. The proposed project would require a change in the existing General Plan designation of the project site from Industrial to Residential. The project site and the surrounding study area are shown on Figure 1. The project site plan is shown on Figure 2.

Scope of Study

This study was conducted for the purpose of identifying the potential traffic impacts related to the proposed development. The impacts of the project were evaluated following the standards and methodologies set forth by the City of Milpitas and the Santa Clara Valley Transportation Authority (VTA). The VTA administers the county Congestion Management Program (CMP). The traffic analysis is based on peak-hour levels of service for the study intersections and freeway segments. The traffic analysis also includes an evaluation of peak-hour signal warrants for the unsignalized intersections. The study intersections are identified below.

Study Intersections

SR 237 (E. Calaveras Boulevard) and Milpitas Boulevard*
SR 237 (W. Calaveras Boulevard) and Abel Street*
Montague Expressway and McCarthy Boulevard/O'Toole Avenue*
McCarthy Boulevard and Dixon Landing Road
McCarthy Boulevard and Ranch Drive (N)
McCarthy Boulevard and Ranch Drive (S)
McCarthy Boulevard and SR 237 (W)
McCarthy Boulevard and SR 237 (E)
McCarthy Boulevard and Bellew Drive/Technology Drive

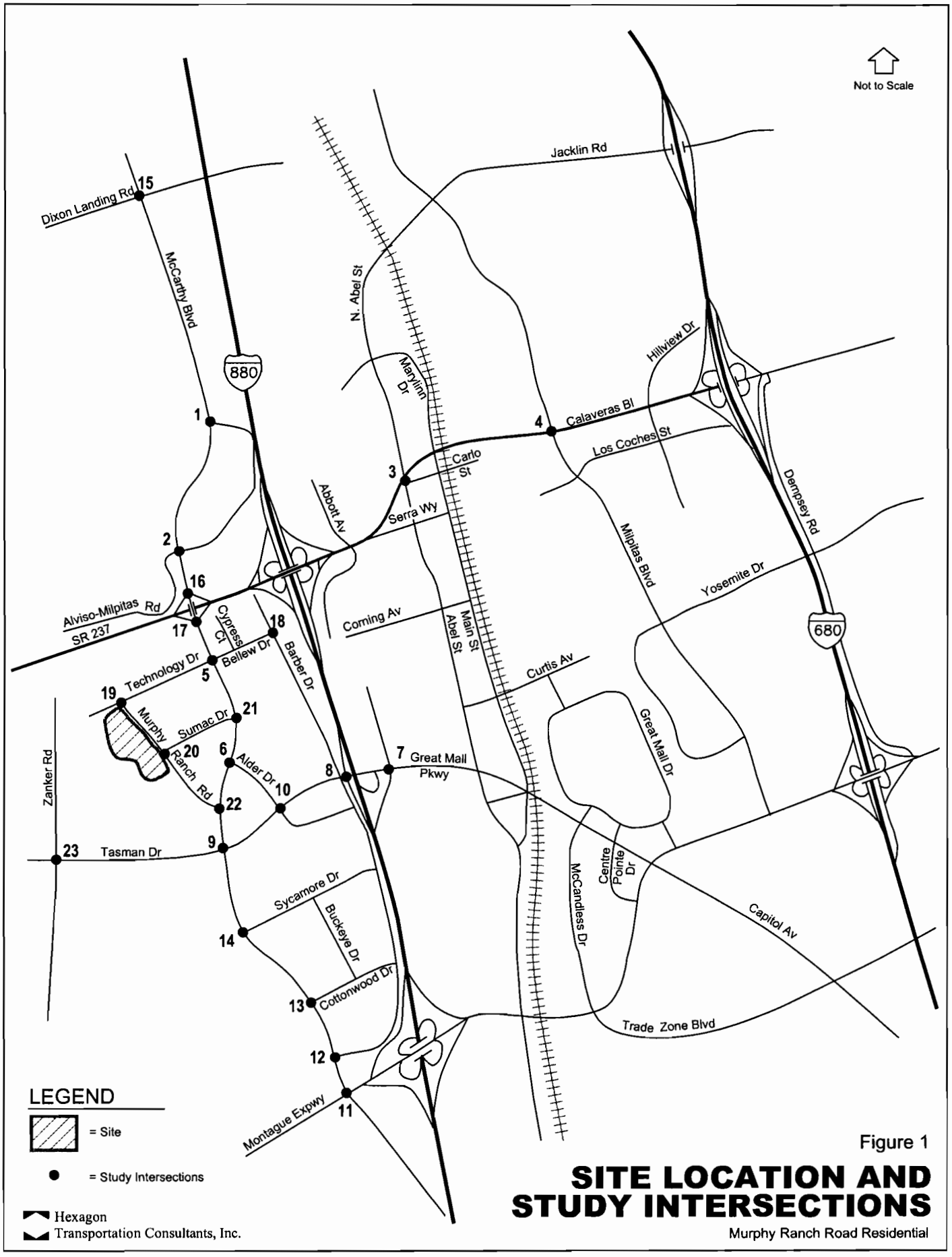
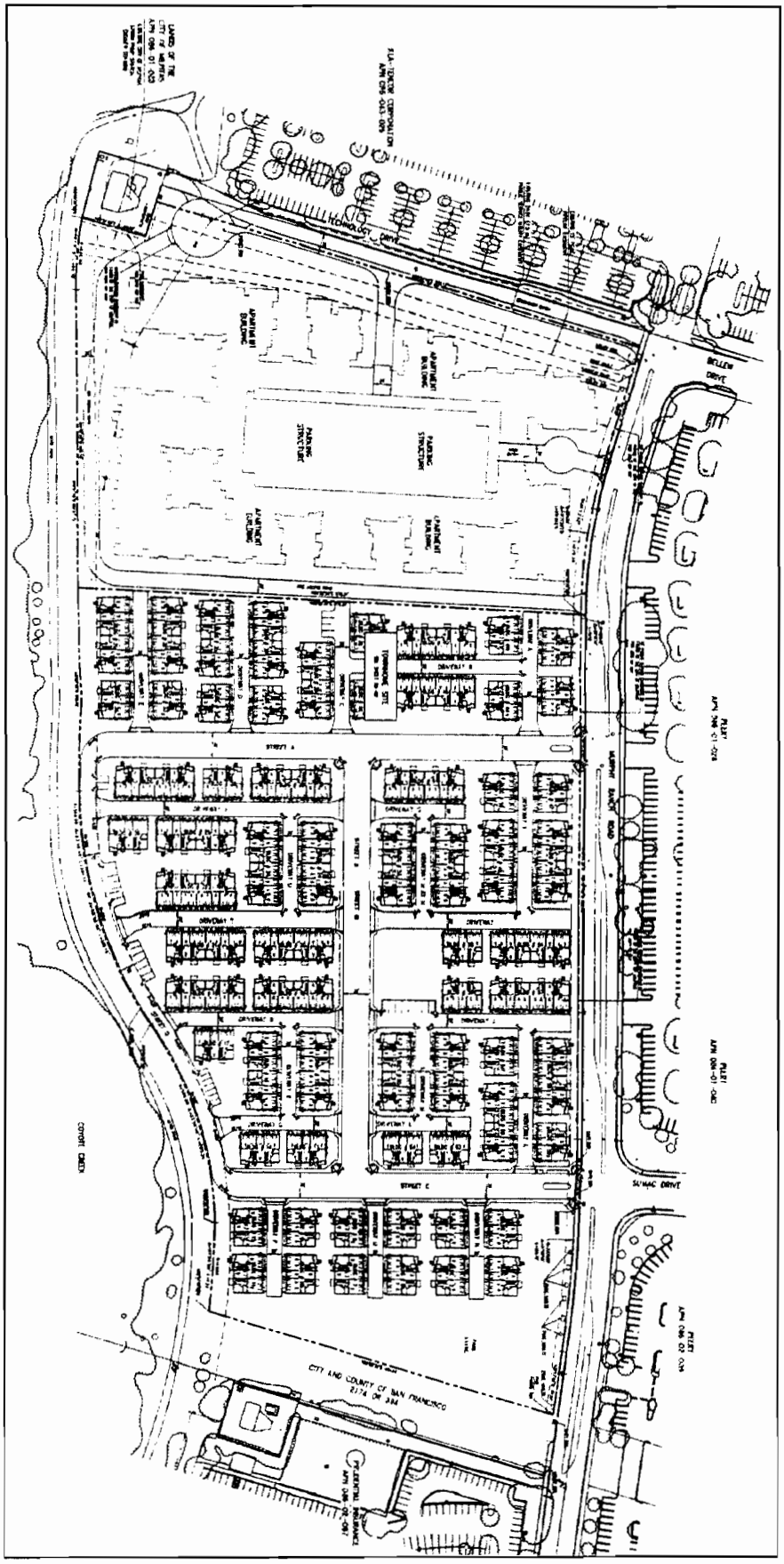


Figure 1

SITE LOCATION AND STUDY INTERSECTIONS

Murphy Ranch Road Residential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McCarthy Boulevard and Sumac Drive (unsignalized)
McCarthy Boulevard and Alder Drive
McCarthy Boulevard and Murphy Ranch Road (unsignalized)
McCarthy Boulevard and Tasman Drive
McCarthy Boulevard and Sycamore Drive
McCarthy Boulevard and Cottonwood Drive
McCarthy Boulevard and Barber Lane
Technology Drive and Murphy Ranch Road (unsignalized)
Murphy Ranch Road and Sumac Drive (unsignalized)
Bellew Drive and Barber Lane
Tasman Drive and Zanker Road
Tasman Drive and Alder Drive
Tasman Drive and I-880 (S)
Tasman Drive/Great Mall Parkway and I-880 (N)

CMP intersections are denoted with an asterisk (*).

Study Freeway Segments

I-880 between Dixon Landing Rd and SR 237/Calaveras Blvd
I-880 between SR 237/Calaveras Blvd and Great Mall Pkwy/Tasman Dr
I-880 between Great Mall Pkwy/Tasman Dr and Montague Expwy
I-880 between Montague Expwy and Brokaw Rd
SR 237 between Zanker Rd and McCarthy Blvd

In summary, the study includes an analysis of 19 signalized intersections, 4 unsignalized intersections, and 10 directional freeway segments in the vicinity of the project site. Peak-hour signal warrants were examined for the unsignalized intersections.

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day. Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing conditions were represented by existing peak-hour traffic volumes on the existing roadway network. Existing traffic volumes were obtained from recent traffic counts and the City of Milpitas.

Scenario 2 *Background Conditions.* Background conditions were represented by future background traffic volumes on the near-term future roadway network. Background traffic volumes were estimated by adding to existing peak-hour volumes the projected volumes from approved but not yet completed developments. The latter components are contained in the City of Milpitas Approved Trips Inventory (ATI) and the City of San Jose ATI.

Scenario 3 *Project Conditions.* Project conditions were represented by future traffic volumes, with the project, on the near-term future roadway network. Future traffic volumes with the project (hereafter called *project traffic volumes*) were estimated by adding to background traffic volumes the additional traffic generated by the project. Project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Scenario 4 *Cumulative Conditions.* Cumulative conditions were represented by year 2030 traffic volumes on the roadway network. Traffic volumes were obtained from the City of Milpitas. Impacts for cumulative conditions were evaluated relative to the existing Milpitas General Plan. Per City of Milpitas requirements, roadway segments were evaluated for cumulative conditions.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new traffic counts, previous traffic studies, the City of Milpitas, the City of San Jose, and the CMP annual Monitoring Report. The following data were collected from these sources:

- existing traffic volumes
- lane configurations
- signal timing and phasing (for signalized intersections only)
- approved trips inventory for Milpitas and San Jose

Analysis Methodologies

Traffic conditions at the study locations were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

Intersections

The City of Milpitas and CMP level of service methodologies utilize TRAFFIX software using CMP default settings. TRAFFIX is based on the *2000 Highway Capacity Manual* (HCM) method for intersections, and evaluates intersection operations on the basis of average delay for all vehicles at the intersection. This average delay can then be correlated to a level of service as shown in Table 1 for signalized intersections. The level of service correlation for unsignalized intersections is shown in Table 2. For two way stop controlled intersections, the level of service reported is for the worst approach of the intersection.

In addition to the level of service evaluation, for unsignalized intersections an assessment is made of the need for signalization of the intersection. This assessment is made on the basis of the Peak-hour Volume Signal Warrant, Warrant #11 described in the Caltrans *Traffic Manual*. This method makes no evaluation of intersection level of service, but simply provides an indication whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal.

Table 1
Signalized Intersection Level of Service Definitions Based on 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 or less
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 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 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 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. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	Greater than 80.0

Source: Transportation Research Board, *Highway Capacity Manual 2000,* Exhibit 16-2.

Roadway Segments

As prescribed in the CMP technical guidelines, the level of service for freeway segments is estimated based on vehicle density. Density is calculated by the following formula:

$$D = V / (N*S)$$

where:

D= density, in vehicles per mile per lane (vpmpl)
V= peak hour volume, in vehicles per hour (vph)
N= number of travel lanes
S= average travel speed, in miles per hour (mph)

The vehicle density on a segment is correlated to level of service as shown in Table 3. The CMP requires that mixed-flow lanes and auxiliary lanes be analyzed separately from HOV (carpool) lanes. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments three lanes or wider in one direction and a capacity of 2,200 vphpl be used for segments two lanes wide in one direction.

For cumulative conditions, the traffic operations at the study segments were calculated based on the volume-to-capacity ratio, which can be correlated to a level of service. Table 4 shows the roadway types, capacity assumptions, and LOS thresholds that were used for this analysis.

Table 2
Unsignalized Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Stopped Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression .	10.0 or less
B	Operations with low delay occurring with good progression.	10.1 to 15.0
C	Operations with average delays resulting from fair progression.	15.1 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression or high V/C ratios.	25.1 to 35.0
E	Operations with high delay values indicating poor progression and high V/C ratios. This is considered to be the limit of acceptable delay.	35.1 to 50.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation and poor progression.	Greater than 50.0

Source: Transportation Research Board, *Highway Capacity Manual 2000*.

Level of Service Standards

For CMP intersections, roadway segments, and freeway segments, the minimum acceptable level of service is LOS E. At intersections and roadway segments in San Jose and Milpitas that are not CMP intersections, the minimum acceptable level of service is LOS D.

The City of San Jose has established a deficiency plan for the 22 CMP intersections in north San Jose. The plan requires that the average delay during the PM peak hour at the 22 intersections be averaged to less than 88 seconds. According to the North San Jose Plan (NSJDP), the maximum delay at an intersection is capped at 150 percent of its cycle length. All of these intersections are designated CMP intersections. They are:

- U.S. 101 and Brokaw Road
- SR 237 and North First Street (north)
- SR 237 and North First Street (south)
- SR 237 and Zanker Road (north)
- SR 237 and Zanker Road (south)
- I-880 and Brokaw Road (East)
- I-880 and Brokaw Road (West)
- I-880 and North First Street (North)
- I-880 and North First Street (South)
- Brokaw Road and Old Oakland Road
- Brokaw Road and North First Street
- Brokaw Road and Zanker Road
- De La Cruz Avenue Boulevard and Trimble Road
- North First Street and Montague Expressway
- North First Street and Trimble Road
- Lundy Avenue and Murphy Avenue
- Montague Expressway and Zanker Road
- Montague Expressway and Trade Zone/McCandless Drive
- Montague Expressway and South Main Street/Old Oakland Road
- Montague Expressway and McCarthy Boulevard/O'Toole
- Montague Expressway and Trimble Road
- Trimble Road and Zanker Road

Table 3
Freeway Segment Level of Service Based on Density

Level of Service	Description	Density (vehicles/mile/lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	0-11
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	>11-18
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	>18-26
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.	>26-46
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	>46-58
F	Vehicular flow breakdowns occurs. Large queues form behind breakdown points.	>58

Source: VTA CMP *Traffic Level of Service Analysis Guidelines*, June 2003.

Table 4
City of Milpitas Roadway Segment LOS

		Level of Service					
Facility	Lane Capacity	A	B	C	D	E	F
Freeway	2,000	1,200	1,400	1,600	1,800	2,000	>2,000
Expressway	1,100	660	770	880	990	1,100	>1,100
Major Arterial	1,000	600	700	800	900	1,000	>1,000
Arterial	900	540	630	720	810	900	>900

Report Organization

The remainder of this report is divided into five chapters. Chapter 2 describes existing conditions in terms of the existing roadway network, transit service, and existing bicycle and pedestrian facilities. Chapter 3 presents roadway operations under background conditions. Chapter 4 describes the method used to estimate project traffic, its impact on the transportation system, and the recommended mitigation measures. Chapter 5 discusses other transportation impacts such as transit, bikes and pedestrians. Chapter 6 discusses the traffic conditions under 2030 conditions.

2.
Existing Conditions

This chapter describes the existing conditions for all the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the project site is provided via I-880, I-680, and SR 237/Calaveras Boulevard. These facilities are described below.

I-680 is a north/south freeway traversing the eastern portion of Milpitas. This freeway connects the inland East Bay communities to the north with San Jose to the south. I-680 has six mixed flow lanes north of SR 237 and eight mixed flow lanes south of SR 237. A southbound HOV lane is currently in operation north of Calaveras Boulevard.

I-880 is a north/south freeway providing regional access from East Bay cities to San Jose, where it becomes SR 17. Within the City of Milpitas, I-880 is a six-to-eight lane freeway. The initial construction phases of the SR 237/I-880 interchange have recently been completed. South of Montague Expressway, I-880 has recently been widened to six lanes.

State Route 237/Calaveras Boulevard is an east/west arterial between I-880 and I-680 and generally provides six travel lanes (four on the Union Pacific overcrossing). West of I-880, this facility becomes a freeway with four mixed flow lanes and two High Occupancy Vehicle (HOV) lanes. Calaveras Boulevard accommodates a significant amount of regional through traffic during the peak commute hours. Milpitas staff estimate that approximately 50 percent of the peak hour traffic between I-680 and I-880 is generated outside of Milpitas. The predominate direction of travel is westbound in the morning and eastbound during the afternoon.

Local access to the site is provided by Montague Expressway, McCarthy Boulevard, Tasman Drive, Technology Drive, and Murphy Ranch Road. These roadways are described below.

Montague Expressway is an east/west expressway in southern Milpitas that generally provides six travel lanes. It is operated by the Santa Clara County Roads and Airports Department. The peak direction of travel is westbound in the morning, and eastbound in the evening. This facility also provides HOV lanes both during the AM peak hours in the westbound direction and PM peak hours in the eastbound direction. Montague Expressway is a CMP facility that experiences moderate congestion during both commute periods.

McCarthy Boulevard is a four-lane divided north/south arterial connecting Montague Expressway in the south to Dixon Landing Road in the north. McCarthy Boulevard primarily serves as access to SR 237, Montague Expressway, and I-880 for several Business Parks.

Tasman Drive is a six-lane, east/west, arterial extending into San Jose via a bridge over the Coyote Creek. East of I-880, Tasman Drive becomes Great Mall Parkway. The Alum Rock to Santa Teresa Light Rail line runs down the center of Tasman Drive.

Technology Drive is a two-lane, east/west, roadway that extends east from Murphy Ranch Road to McCarthy Boulevard where it becomes Bellew Drive. Bellew Drive is a four-lane roadway with a two-way-center-left-turn lane. Parking is prohibited on both sides of the street.

Murphy Ranch Road is a two-lane roadway that extends from Technology Drive in the north to McCarthy Boulevard in the south. Parking is prohibited on both sides of the street. Direct access to the project site is proposed via four driveways.

Existing Bicycle and Pedestrian Facilities

According to the City of Milpitas Bikeway Master Plan the Valley Transportation Agency (VTA) Santa Clara Valley Bikeways Map, there are numerous city- and county-designated bikeways within the vicinity of the project site.

- McCarthy Boulevard has Class II bicycle lanes from Dixon Landing Road to Ranch Road (S). McCarthy Boulevard has Class III bicycle routes from Ranch Road (S) to Montague Expressway.
- Milpitas Boulevard has Class II bicycle lanes from the County line in the north to Yosemite Drive in the south, where it becomes a Class III route to Montague Expressway.
- Barber Lane has Class II bicycle lanes from Bellew Drive in the north to McCarthy Boulevard in the south.
- Ranch Drive has Class II bicycle lanes along its entirety.
- Great Mall Parkway/Tasman Drive has Class II bicycle lanes from Montague Expressway in the east to McCarthy Boulevard in the west, where it becomes a Class III route to Zanker Road.

Bicycle facilities are shown on Figure 3. Sidewalks are found along virtually all previously-described local roadways in the study area and along the commercial streets and collectors near the site.

Existing Transit Service

Existing transit service to the study area is provided by the VTA. The existing VTA service is described below and shown on Figure 4.

VTA Bus Service

The 33 line provides service between Tasman and 1st-Great Mall/Main Transit Center via McCarthy Boulevard, Bellew Drive, and Barber Lane, with 30-minute headways during commute hours.

The 330 line is a limited stop route that provides service between Almaden Expressway and Camden – N. San Jose via Tasman Drive, with 40 to 60-minute headways during commute hours.

The 104 line is an express route that provides service between Penitencia Creek Transit Center and Palo Alto via SR 237, with 30 to 45-minute headways during commute hours.

The 120 line is an express route that provides service between the Fremont BART station and Lockheed Martin/Moffett Park via SR 237 and Abel Street, with 60 to 75-minute headways during commute hours.

The 140 line is an express route that provides service between the Fremont BART station and the Sunnyvale Caltrain station via Tasman Drive, with 30 to 60-minute headways during commute hours.

The 141 line is an express route that provides service between the Fremont BART station and Great America via SR 237 and I-880. This line operates on weekends only from March through October, with 30 to 90-minute headways.

VTA Light Rail Transit (LRT) Service

There are five Capitol Corridor LRT stations located within approximately two miles of the project site. The Guadalupe Corridor LRT provides service on 15-minute headways during commute and midday hours. It provides service between Santa Teresa in south San Jose to Alum Rock in north San Jose.

The Cisco Way LRT station is located between McCarthy Boulevard and Zanker Road. The Cisco Way LRT station provides a direct connection to VTA bus service.

The I-880/Milpitas LRT station is located near Tasman Drive and Alder Drive. The I-880/Milpitas LRT station provides a direct connection to VTA bus service and offers bicycle lockers.

The Great Mall/Main LRT station is located near Main Street and Great Mall Parkway. The Great Mall/Main LRT station provides a direct connection to VTA bus service and offers bicycle lockers.

The Baypointe LRT station is located between N. 1st Street and Zanker Road. The Baypointe LRT station provides a direct connection to VTA bus service.

The Tasman LRT transfer station is located near Tasman Drive and N. 1st Street. The Tasman LRT station provides a direct connection to VTA bus service and transfers to the Mountain View – Winchester LRT line.

Existing Intersection Lane Configurations & Traffic Volumes

The existing lane configurations at the study intersections were determined by observations in the field and confirmed with City staff. The existing intersection lane configurations are shown on Figure 5. Existing peak-hour traffic volumes were obtained from the City of Milpitas and supplemented with manual turning-movement counts at intersections where counts were either unavailable or outdated (more than two years old). The existing peak-hour intersection volumes are shown on Figure 6. The traffic count data are included in Appendix A.

Existing Intersection Analysis

The level of service results for the signalized and unsignalized intersections under existing conditions are summarized in Table 5. The results show that, measured against the City of Milpitas level of service standards, the intersection of McCarthy Boulevard and Sumac Drive currently operates at LOS E during the PM peak hour. All of the remaining study intersections currently operate at acceptable levels. The level of service calculation sheets are included in Appendix D.

Existing Freeway Levels of Service

Traffic volumes for the study freeway segments were obtained from the 2004 CMP Annual Monitoring Report. The results of the analysis are summarized in Table 5. The results show that the following study freeway segments currently operate at LOS F in at least one direction during at least one of the peak hours of traffic:

I-880, northbound between SR 237 and Dixon Landing Rd – PM peak hour
I-880, southbound between Montague Expwy and Brokaw Rd – PM peak hour
SR 237, westbound between McCarthy Blvd and Zanker Rd – AM & PM peak hours

Existing Signal Warrants

The peak-hour signal warrant (*Caltrans Traffic Manual*, Chapter 9, Warrant 11) was checked for the four unsignalized intersections to determine whether signalization would be justified on the basis of existing peak-hour volumes. The analysis showed that none of the study intersections would meet the signal warrant under existing conditions. The signal warrant analysis sheets are included in Appendix E.

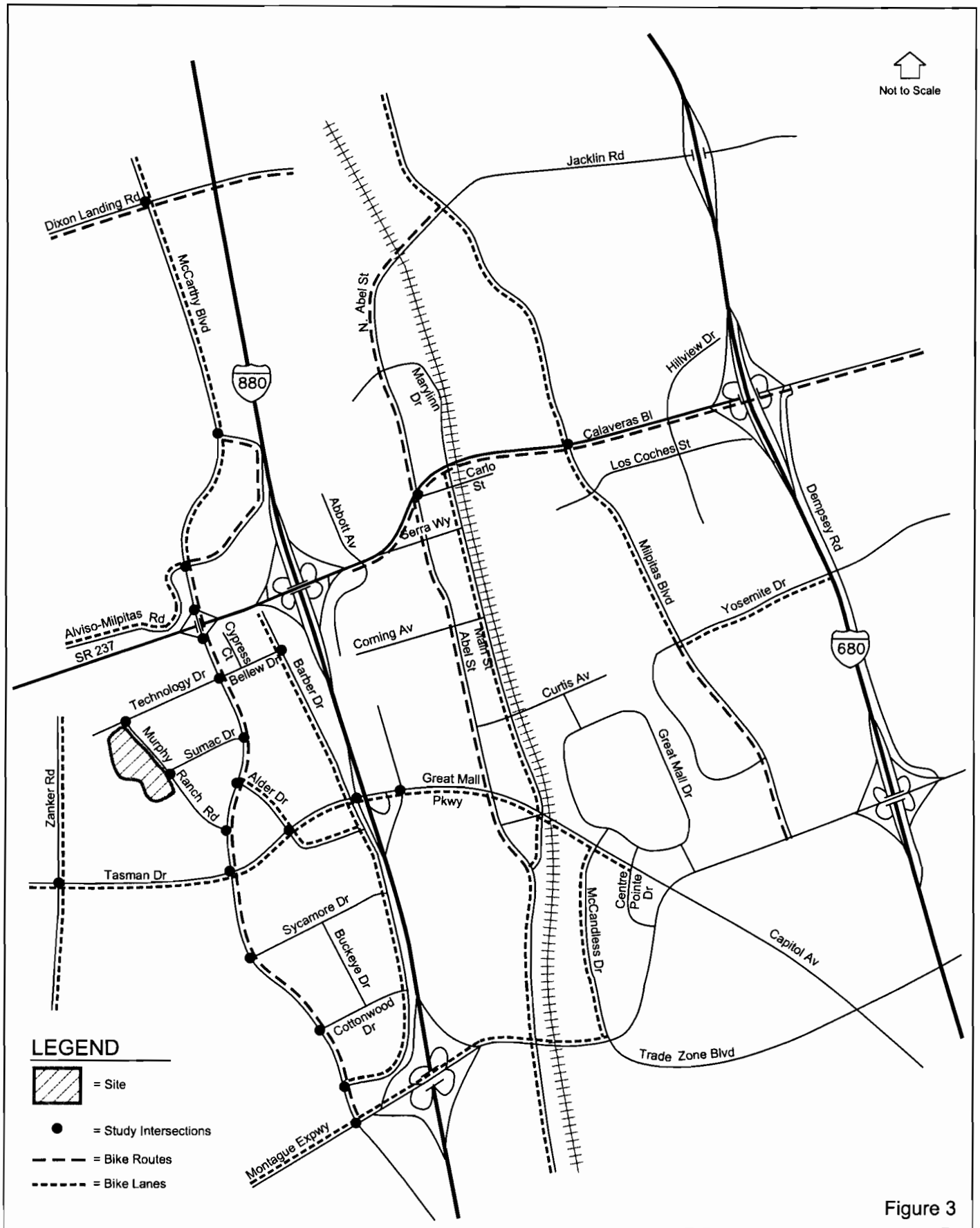


Figure 3

EXISTING BICYCLE FACILITIES

Murphy Ranch Road Residential

Hexagon
Transportation Consultants, Inc.

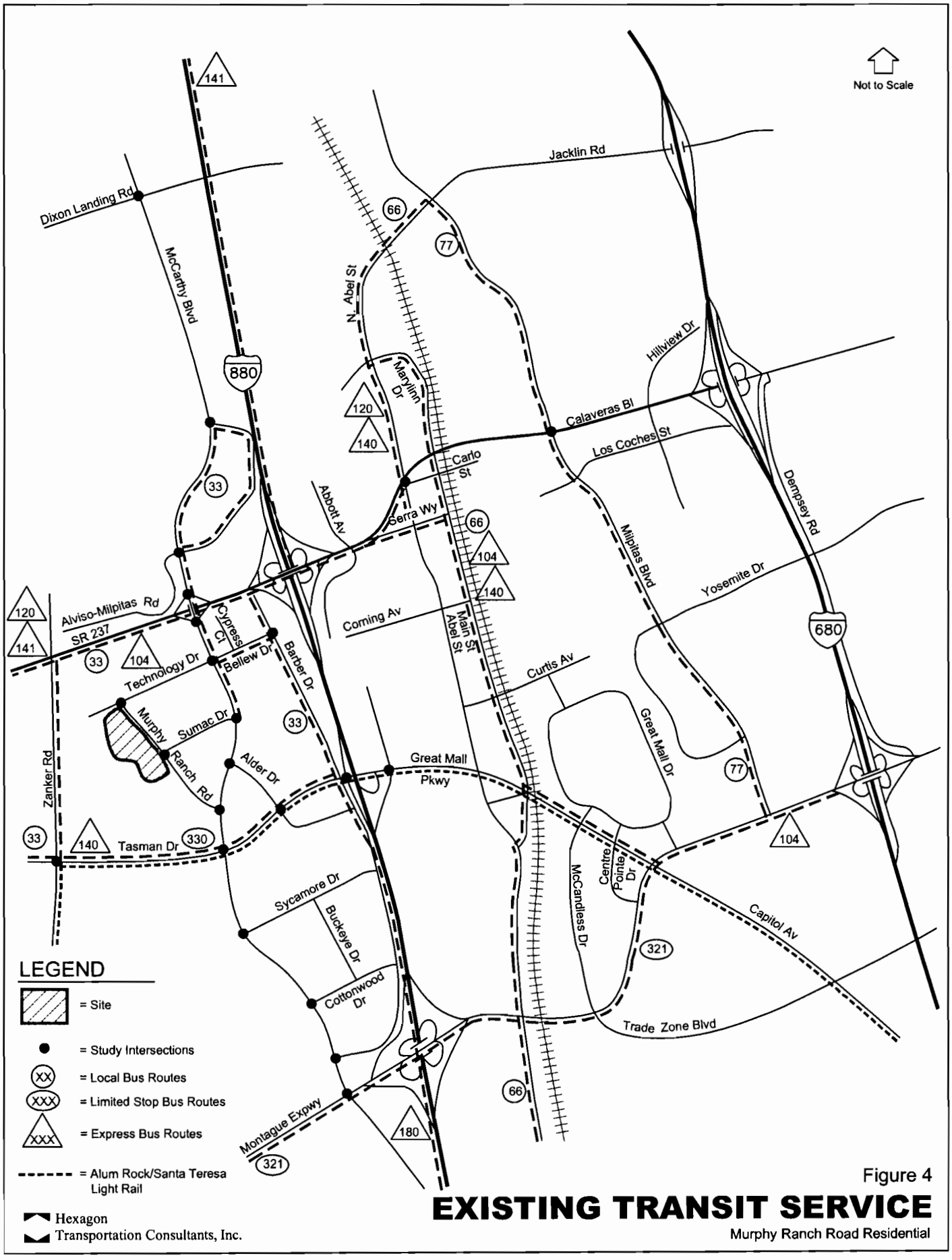


Figure 4

EXISTING TRANSIT SERVICE

Murphy Ranch Road Residential

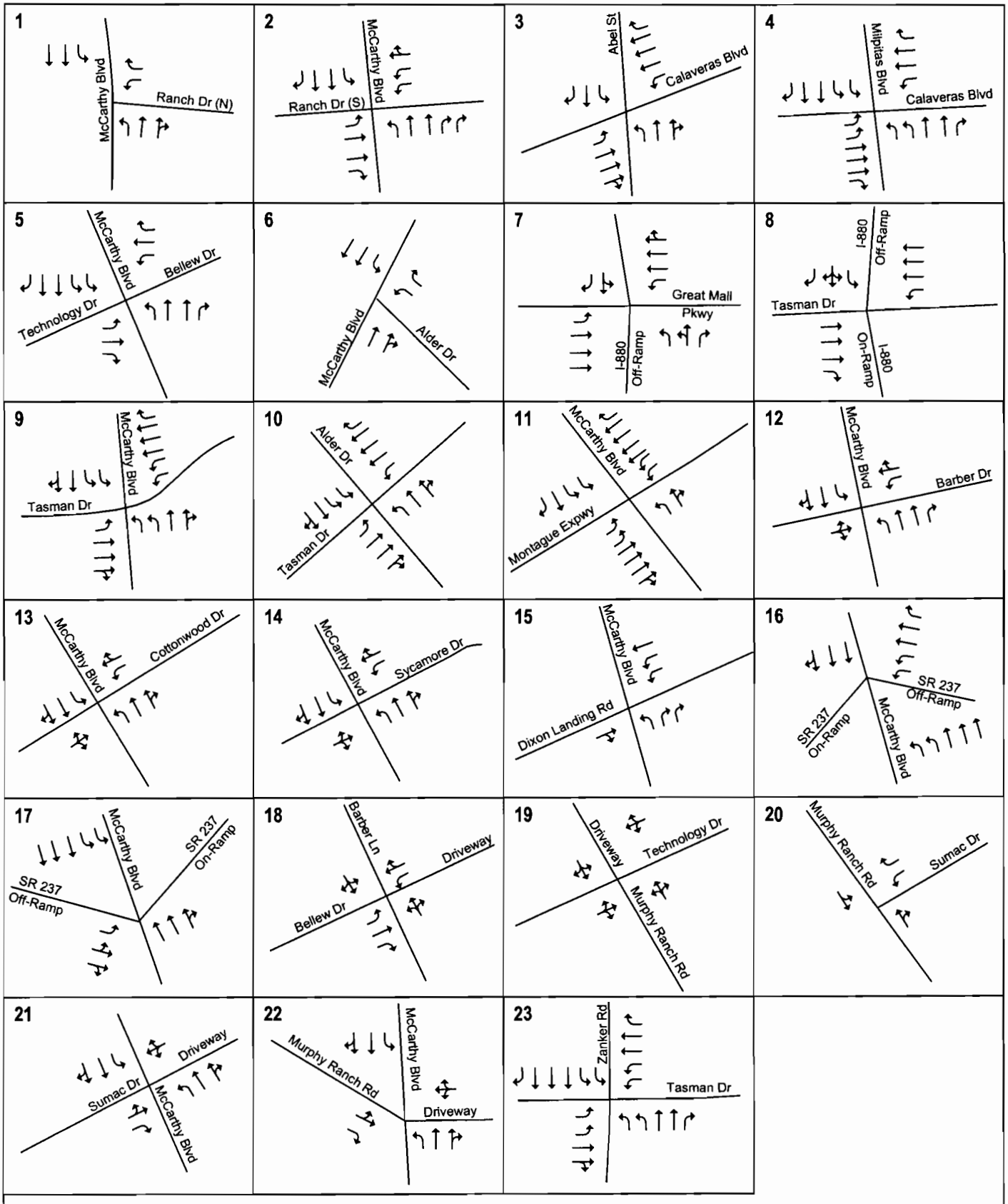
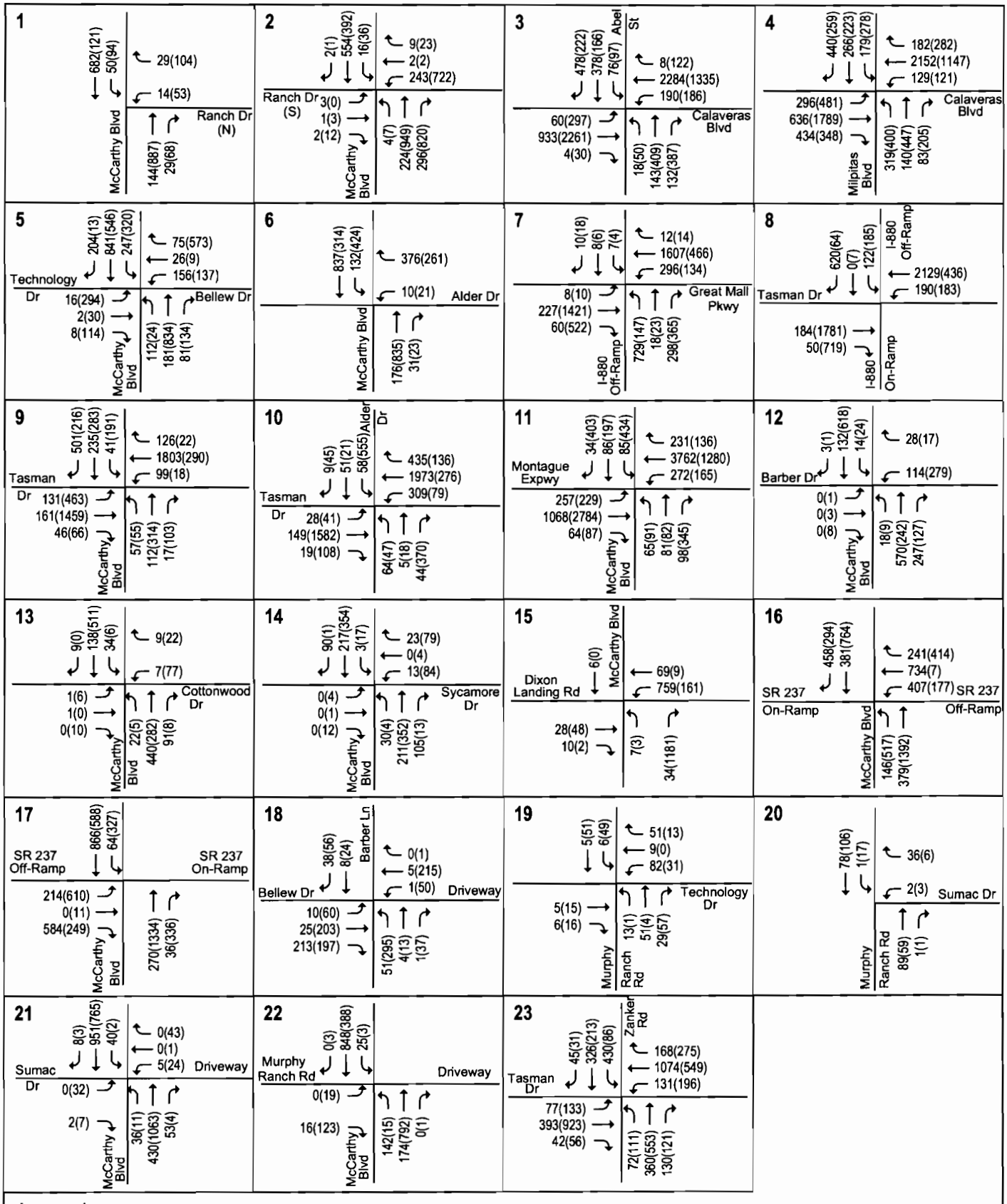


Figure 5

EXISTING LANE CONFIGURATIONS

Murphy Ranch Road Residential

Hexagon
Transportation Consultants, Inc.



Legend

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

Figure 6

EXISTING TRAFFIC VOLUMES

Murphy Ranch Road Residential

Hexagon Transportation Consultants, Inc.

Table 5
Existing Intersection Levels of Service

Intersection	Peak Hour	Count Date	Ave. Delay	LOS
McCarthy Blvd and Ranch Dr (N)	AM	11/29/005	6.6	A
	PM	11/29/005	10.8	B
McCarthy Blvd and Ranch Dr (S)	AM	5/24/05	16.8	B
	PM	5/24/05	22.7	C
Abel St and SR 237 (Calaveras Blvd)*	AM	10/6/04	37.3	D
	PM	5/26/05	38.2	D
Milpitas Blvd and SR 237 (Calaveras Blvd)*	AM	10/6/04	55.8	E
	PM	5/26/05	40.0	D
McCarthy Blvd and Bellew Dr	AM	5/24/05	19.0	B
	PM	5/24/05	33.6	C
McCarthy Blvd and Alder Dr	AM	11/17/05	11.6	B
	PM	11/17/05	16.7	B
I-880 NB and Great Mall Pkwy	AM	5/12/05	24.6	C
	PM	5/12/05	19.3	B
I-880 SB and Tasman Dr	AM	5/12/05	13.6	B
	PM	5/12/05	13.1	B
McCarthy Blvd and Tasman Dr	AM	5/12/05	31.9	C
	PM	5/12/05	24.6	C
Alder Dr and Tasman Dr	AM	5/12/05	14.9	B
	PM	5/12/05	36.9	D
McCarthy Blvd/O'Toole and Montague Expwy*	AM	5/12/05	41.9	D
	PM	10/10/04	60.5	E
McCarthy Blvd and Barber Ln	AM	11/15/05	9.8	A
	PM	11/15/05	19.7	B
McCarthy Blvd and Cottonwood Dr	AM	11/15/05	13.0	B
	PM	11/15/05	15.5	B
McCarthy Blvd and Sycamore Dr	AM	11/15/05	10.6	B
	PM	11/15/05	13.1	B
McCarthy Blvd and Dixon Landing Rd	AM	11/16/05	11.8	B
	PM	11/16/05	9.5	A
SR 237 and McCarthy Blvd (W)	AM	5/24/05	15.2	B
	PM	5/24/05	16.6	B
SR 237 and McCarthy Blvd (E)	AM	5/24/05	15.2	B
	PM	5/24/05	15.7	B
Barber Ln and Bellew Dr	AM	5/24/05	12.6	B
	PM	5/24/05	18.6	B

Table 5 (continued)
Existing Intersection Levels of Service

Intersection	Peak Hour	Count Date	Ave. Delay	LOS
Murphy Ranch Rd and Technology Dr (unsignalized)[1]	AM	11/17/05	7.7	A
	PM	11/17/05	7.4	A
Murphy Ranch Rd and Sumac Dr (unsignalized)[2]	AM	11/16/05	8.9	A
	PM	11/16/05	8.9	A
McCarthy Blvd and Sumac Dr (unsignalized)[2]	AM	11/16/05	27.9	D
	PM	11/16/05	46.8	E
McCarthy Blvd and Murphy Ranch Rd (unsignalized)[2]	AM	11/17/05	11.3	B
	PM	11/17/05	11.1	B
Zanker Rd and Tasman Dr	AM	11/17/05	34.3	C
	PM	11/17/05	35.7	D

* Denotes CMP intersection
[1] LOS for all-way stop intesection is based on the average of all movements.
[2] LOS for unsignalized intersection is based on worst leg.

Table 6
Existing Freeway Levels of Service

Freeway	Segment	Direction	Peak Hour	Mixed-Flow Lanes Ave. Speed/a/	# of Lanes	Volume/a/	Density	LOS
I-880	Brokaw Rd to Montague Expwy	NB	AM	65	3	5,850	30.0	D
I-880	Brokaw Rd to Montague Expwy	NB	PM	66	3	4,360	22.0	C
I-880	Montague Expwy to Great Mall Pkwy	NB	AM	66	3	5,150	26.0	C
I-880	Montague Expwy to Great Mall Pkwy	NB	PM	66	3	5,150	26.0	C
I-880	Great Mall Pkwy to SR 237	NB	AM	63	3	6,430	34.0	D
I-880	Great Mall Pkwy to SR 237	NB	PM	41	3	6,270	51.0	E
I-880	SR 237 to Dixon Landing Rd	NB	AM	66	4	5,700	24.0	C
I-880	SR 237 to Dixon Landing Rd	NB	PM	15	4	5,130	95.0	F
SR 237	Zanker Rd to McCarthy Blvd	EB	AM	66	2	3,700	28.0	D
SR 237	Zanker Rd to McCarthy Blvd	EB	PM	61	2	4,390	36.0	D
I-880	Dixon Landing Rd to SR 237	SB	AM	65	4	7,020	30.0	D
I-880	Dixon Landing Rd to SR 237	SB	PM	66	4	5,700	24.0	C
I-880	SR 237 to Great Mall Pkwy	SB	AM	66	3	5,540	28.0	D
I-880	SR 237 to Great Mall Pkwy	SB	PM	66	3	4,750	24.0	C
I-880	Great Mall Pkwy to Montague Expwy	SB	AM	66	3	5,350	27.0	D
I-880	Great Mall Pkwy to Montague Expwy	SB	PM	39	3	6,200	53.0	E
I-880	Montague Expwy to Brokaw Rd	SB	AM	66	3	4,950	25.0	C
I-880	Montague Expwy to Brokaw Rd	SB	PM	21	3	5,100	81.0	F
SR 237	McCarthy Blvd to Zanker Rd	WB	AM	11	3	3,110	113.0	F
SR 237	McCarthy Blvd to Zanker Rd	WB	PM	25	3	4,560	73.0	F

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2004.

Observed Existing Traffic Conditions

Traffic conditions in the field were observed in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect existing traffic conditions.

Overall the study intersections operated well during both the AM and PM peak hours of traffic, and the level of service analysis appears to accurately reflect actual existing traffic conditions. However, field observations revealed that some operational problems do occur.

SR 237 and Milpitas Boulevard – During the AM peak hours, the westbound traffic queue was unable to clear the intersection in one signal cycle. During the PM peak hours, eastbound traffic queues beyond the rail overpass and at times beyond the Abel Street/Calaveras Boulevard intersection. The eastbound through queue was unable to clear the intersection in one signal cycle.

SR 237 and Abel Street – During AM peak hours, the westbound traffic queues beyond the railroad overpass. However, the westbound queue was able to clear the intersection in one signal cycle. During PM peak hours, eastbound traffic frequently queues beyond Serra Way. The eastbound queue was able to clear the intersection in one signal cycle.

SR 237(WB ramps) and McCarthy Boulevard – During the PM peak hours, the northbound left-turn queue fills the turn pocket and blocks the through lane.

SR 237 (EB ramps) and McCarthy Boulevard – During the PM peak hours, the northbound queue on McCarthy Boulevard was unable to clear the intersection in one signal cycle. This queue extends back through to Alder Drive and occasionally blocks the intersections of Technology Drive, Sumac Drive, and Alder Drive. Also, the southbound left-turn queue occasionally spills into the through lane.

McCarthy Boulevard and Technology Drive – Westbound traffic queues spill back through the Cypress/Bellew Drive intersection.

McCarthy Boulevard and Tasman Drive – During the PM peak hours, the eastbound left-turn lane skips signal cycles because of the light rail. When this occurs, the left-turn pocket traffic spills into the through lane. This queue clears during the next regular signal cycle.

3.
Background Conditions

This chapter describes background traffic conditions. Background conditions are defined as conditions just prior to completion of the proposed development. Traffic volumes for background conditions comprise volumes from existing traffic counts plus traffic generated by other approved developments in the vicinity of the site. This chapter describes the procedure used to determine background traffic volumes and the resulting traffic conditions.

Background Transportation Network & Traffic Volumes

It is assumed in this analysis that the future near-term roadway network under background conditions would be the same as the existing roadway network. Bicycle, transit, and pedestrian facilities under background conditions were assumed to remain unchanged from existing conditions.

Background peak-hour traffic volumes were calculated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The added traffic from approved but not yet constructed developments were provided by Milpitas and San Jose in the form of the Approved Trips Inventory (ATI). Background traffic volumes are shown on Figure 7. A list of major approved projects that would add traffic to the study intersections is provided below. A full description of the ATI are included in Appendix B.

- Cisco Systems Site 4 – San Jose
- Tasman/McCarthy Business Center
- Irvine Company R&D - Phase 2
- Cisco Systems Site 5 - Milpitas
- Veritas Software
- Parc Place Residential
- Elmwood Residential
- Fairfield Residential
- Milpitas Town Center
- Hillview Center Mixed-use
- Apton Plaza Mixed-use
- North Main Street – Library
- Great Mall GLA Recapture
- Trimble Technology Center (from City San Jose)
- Venture Commerce (from City San Jose)
- Ebay (from City San Jose)
- Ultratech Stepper (from City San Jose)

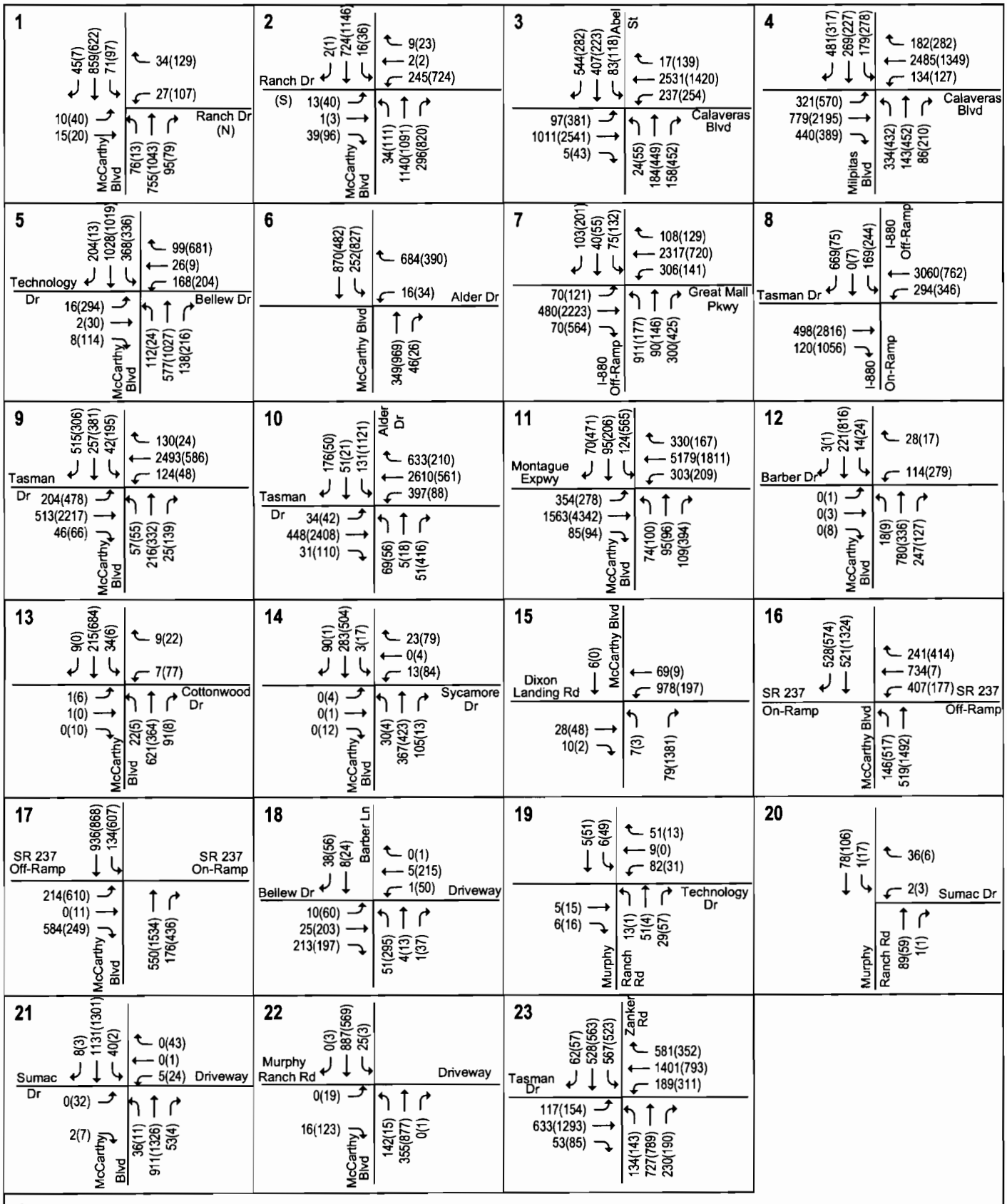
- 3Com (from City San Jose)
- North San Jose Project (from City San Jose)
- US Dataport (from City San Jose)
- BEA (from City San Jose)
- Hewlett Packard (from City San Jose)
- Sleep Inn Hotel (from City San Jose)
- Cisco Alviso (from City San Jose)

Background Intersection Analysis

The results of the intersection level of service analysis under background conditions are summarized in Table 7. The results show that four of the study intersections would operate at an unacceptable LOS measured against the City of Milpitas and CMP level of service guidelines. The intersection of Milpitas Boulevard/SR 237 (Calaveras Blvd) would operate at LOS F during the AM peak hour. The intersection of Alder Drive/Tasman Drive would operate at LOS E during the AM peak hour and LOS F during the PM peak hours. The intersection of Montague Expressway/McCarthy Boulevard-O'Toole Avenue would operate at LOS F during the PM peak hour. The unsignalized intersection of McCarthy Boulevard/Sumac Drive would operate at LOS F during both the AM and PM peak hours. The remaining study intersections would operate at an acceptable LOS. The level of service calculation sheets are included in Appendix D.

Background Signal Warrants

The peak-hour signal warrant (Caltrans Traffic Manual, Chapter 9, Warrant 11) was checked for the four unsignalized intersections to determine whether signalization would be justified on the basis of background peak-hour volumes. The analysis showed that the peak-hour volume signal warrant is not satisfied under background conditions at the intersections. The signal warrant analysis sheets are included in Appendix E.



Legend

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

Figure 7

BACKGROUND TRAFFIC VOLUMES

Murphy Ranch Road Residential

Hexagon Transportation Consultants, Inc.

Table 7
Background Intersection Levels of Service

Intersection	Peak Hour	Existing Ave. Delay	Existing LOS	Background Ave. Delay	Background LOS
McCarthy Blvd and Ranch Dr (N)	AM	6.6	A	18.7	B
	PM	10.8	B	20.2	C
McCarthy Blvd and Ranch Dr (S)	AM	16.8	B	19.2	B
	PM	22.7	C	43.1	D
Abel St and SR 237 (Calaveras Blvd)*	AM	37.3	D	43.1	D
	PM	38.2	D	61.7	E
Milpitas Blvd and SR 237 (Calaveras Blvd)*	AM	55.8	E	82.3	F
	PM	40.0	D	41.9	D
McCarthy Blvd and Bellew Dr	AM	19.0	B	27.5	C
	PM	33.6	C	50.9	D
McCarthy Blvd and Alder Dr	AM	11.6	B	15.5	B
	PM	16.7	B	53.2	D
I-880 NB and Great Mall Pkwy	AM	24.6	C	44.4	D
	PM	19.3	B	29.1	C
I-880 SB and Tasman Dr	AM	13.6	B	22.7	C
	PM	13.1	B	27.1	C
McCarthy Blvd and Tasman Dr	AM	31.9	C	53.1	D
	PM	24.6	C	35.5	D
Alder Dr and Tasman Dr	AM	14.9	B	21.4	C
	PM	36.9	D	131.9	F
McCarthy Blvd/O'Toole and Montague Expwy*	AM	41.9	D	59.5	E
	PM	60.5	E	133.6	F
McCarthy Blvd and Barber Ln	AM	9.8	A	9.6	A
	PM	19.7	B	20.6	C
McCarthy Blvd and Cottonwood Dr	AM	13.0	B	15.4	B
	PM	15.5	B	16.1	B
McCarthy Blvd and Sycamore Dr	AM	10.6	B	9.9	A
	PM	13.1	B	12.2	B
McCarthy Blvd and Dixon Landing Rd	AM	11.8	B	13.8	B
	PM	9.5	A	10.6	B
SR 237 and McCarthy Blvd (W)	AM	15.2	B	15.2	B
	PM	16.6	B	19.6	B
SR 237 and McCarthy Blvd (E)	AM	15.2	B	16.8	B
	PM	15.7	B	19.4	B
Barber Ln and Bellew Dr	AM	12.6	B	12.6	B
	PM	18.6	B	18.6	B

Table 7 (continued)
Background Intersection Levels of Service

Intersection	Peak Hour	Existing Ave. Delay	Existing LOS	Background Ave. Delay	Background LOS
Murphy Ranch Rd and Technology Dr (unsignalized)[1]	AM	7.7	A	7.7	A
	PM	7.4	A	7.4	A
Murphy Ranch Rd and Sumac Dr (unsignalized)[2]	AM	8.9	A	8.9	A
	PM	8.9	A	8.9	A
McCarthy Blvd and Sumac Dr (unsignalized)[2]	AM	27.9	D	Sat.	F
	PM	46.8	E	Sat.	F
McCarthy Blvd and Murphy Ranch Rd (unsignalized)[2]	AM	11.3	B	11.5	B
	PM	11.1	B	12.6	B
Zanker Rd and Tasman Dr	AM	34.3	C	36.0	D
	PM	35.7	D	43.8	D

* Denotes CMP intersection

[1] LOS for all-way stop intesection is based on the average of all movements.

[2] LOS for unsignalized intersection is based on worst leg.

Note: Sat. represents that the intersection is saturated and the delays are not meaningful.

4.
Project Impacts and Mitigation Measures

This chapter describes project traffic conditions, significant project impacts, and measures that are recommended to mitigate project impacts. Included are descriptions of the significance criteria that define an impact, estimates of project-generated traffic, identification of the impacts, and descriptions of the mitigation measures. Project conditions are represented by background traffic conditions with the addition of traffic generated by the project.

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. For this analysis there are two sets of relevant criteria for impacts on intersections and freeways. These are based on: (1) the City's of Milpitas and San Jose intersection Level of Service standards and (2) the CMP intersection Level of Service standards.

City's of Milpitas and San Jose Definition of Significant Intersection LOS Impacts

The project is said to create a significant adverse LOS impact on traffic conditions at an intersection in the City's of Milpitas and San Jose if for either peak-hour:

1. The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions, <u>or</u>

2. The level of service at the intersection is an unacceptable LOS E or F under background conditions ***and*** the addition of project trips causes both the critical-movement delay at the intersection to increase by four or more seconds and the demand-to-capacity ratio (V/C) to increase by .01 or more.

An exception to this rule applies when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e. the change in average stopped delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by .01 or more.

A significant impact by the City's of Milpitas and San Jose standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to background conditions or better.

CMP Definition of Significant Intersection Impacts

The definition of a significant impact at a CMP intersection is the same as for the City's of Milpitas and San Jose, except that the CMP standard for acceptable level of service at a CMP intersection is LOS E or better. A significant impact by CMP standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection conditions to background conditions or better.

CMP Definition of Significant Freeway Segment Impacts

The CMP defines an acceptable level of service for freeway segments as LOS E or better. A project is said to create a significant adverse impact on traffic conditions on a CMP freeway segment if for either peak hour:

1. The level of service on the freeway segment degrades from an acceptable LOS E or better under existing conditions to an unacceptable LOS F under project conditions, <u>or</u>

2. The level of service on the freeway segment is an unacceptable LOS F under project conditions <u>and</u> the number of project trips on that segment constitutes at least one percent of capacity on that segment.

A significant impact by CMP standards is said to be satisfactorily mitigated when measures are implemented that would restore freeway conditions to better than background conditions.

Transportation Network Under Project Conditions

It is assumed in this analysis that the near-term roadway network under project conditions would be the same as described under background conditions, except at the project entrance where the proposed project would add a fourth leg to the Murphy Ranch Road and Sumac Drive intersection.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described further in the following sections.

Trip Generation

Through empirical research, data have been collected that correlate to common land uses their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates to the size of the development. The standard trip generation rates for residential developments are based on those recommended by the San Diego Association of Governments (SANDAG). The project trip generation estimates are presented in Table 8. It is estimated that the project would generate 4,524 daily vehicle trips, with 362 vehicle trips occurring during the AM peak hour and 430 vehicle trips during the PM peak hour.

Table 8
Project Trip Generation Estimates

				AM Peak Hour				PM Peak Hour			
Land Use	Size[1]	Daily Rate	Daily Trips	Pk-Hr Rate	In	Out	Total	Pk-Hr Rate	In	Out	Total
Residential											
Multi-family[2]	285	8.0	2,280	0.64	36	146	182	0.8	160	68	228
Apartments[3]	374	6.0	2,244	0.48	36	144	180	0.54	141	61	202
Total Residential	659		4,524		72	290	362		301	129	430

Note: Numbers may not add due to rounding

[1] Residential size expressed in number of units.

[2] Source: Residential, Condominium (or any multi-family 6-20 DU/acre). San Diego Association of Governments (SANDAG) *Trip Generation Rates*, April 2002.

[3] Source: Residential, Apartment (or any multi-family units more than 20 DU/acre). San Diego Association of Governments (SANDAG) *Trip Generation Rates*, April 2002.

Trip Distribution & Assignment

The trip distribution pattern for the proposed project was based on a select zone analysis from the VTA CMP year 2030 TDF model, existing travel patterns, and the relative locations of complementary land uses. The trip distribution pattern is shown graphically on Figure 8. The peak-hour trips generated by the proposed development were assigned to the roadway system in accordance with the trip distribution pattern discussed above. Figure 9 shows the project trip assignment.

Project Traffic Volumes

Project trips, as represented in the above project trip assignment, were added to background traffic volumes to obtain background plus project traffic volumes. Background traffic volumes plus project trips are typically referred to simply as *project traffic volumes*; this is contrasted with the term *project trips*, which is used to signify the traffic that is produced specifically by the project. The project traffic volumes are shown graphically on Figure 10. Traffic volumes for all components of traffic are tabulated in Appendix C.

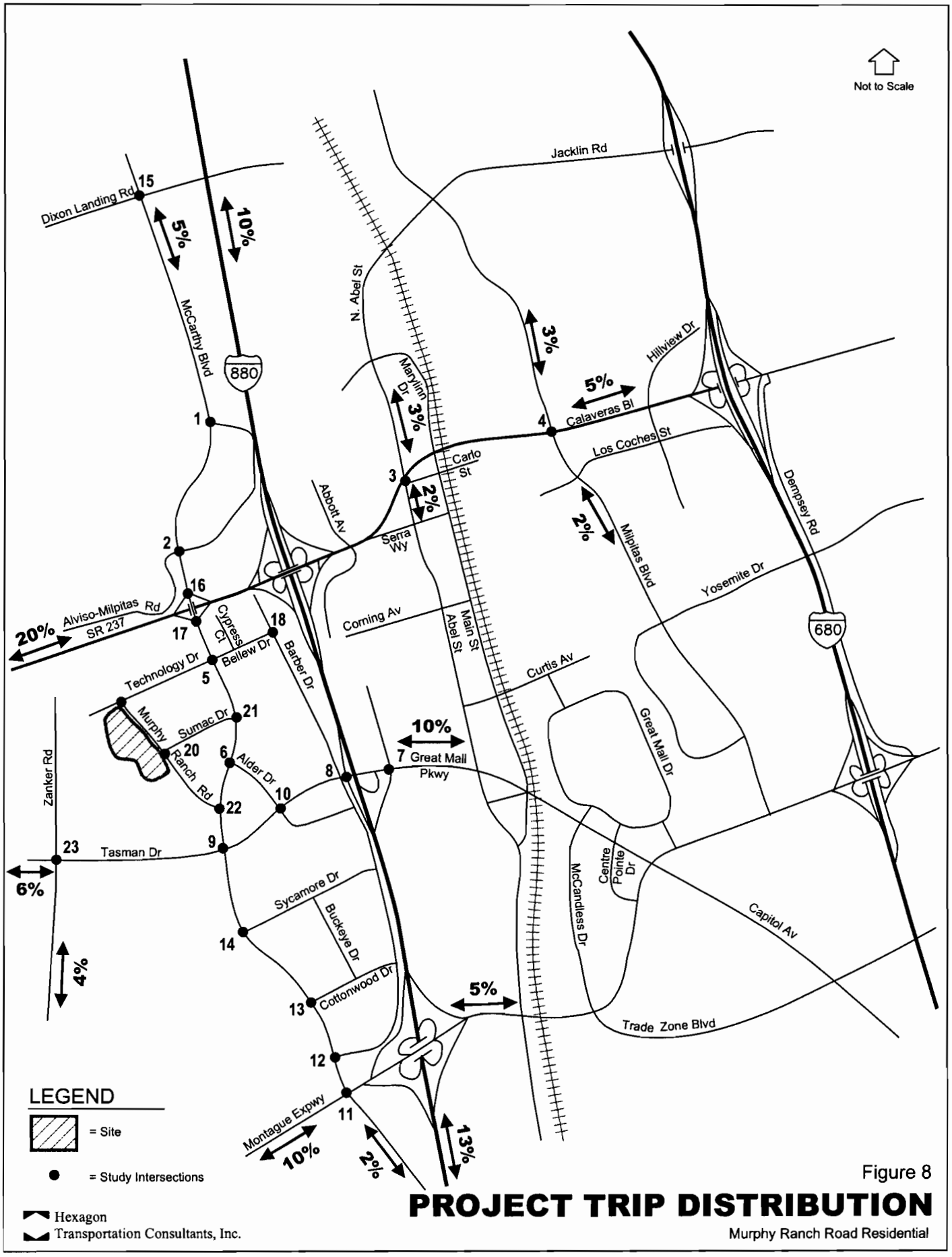
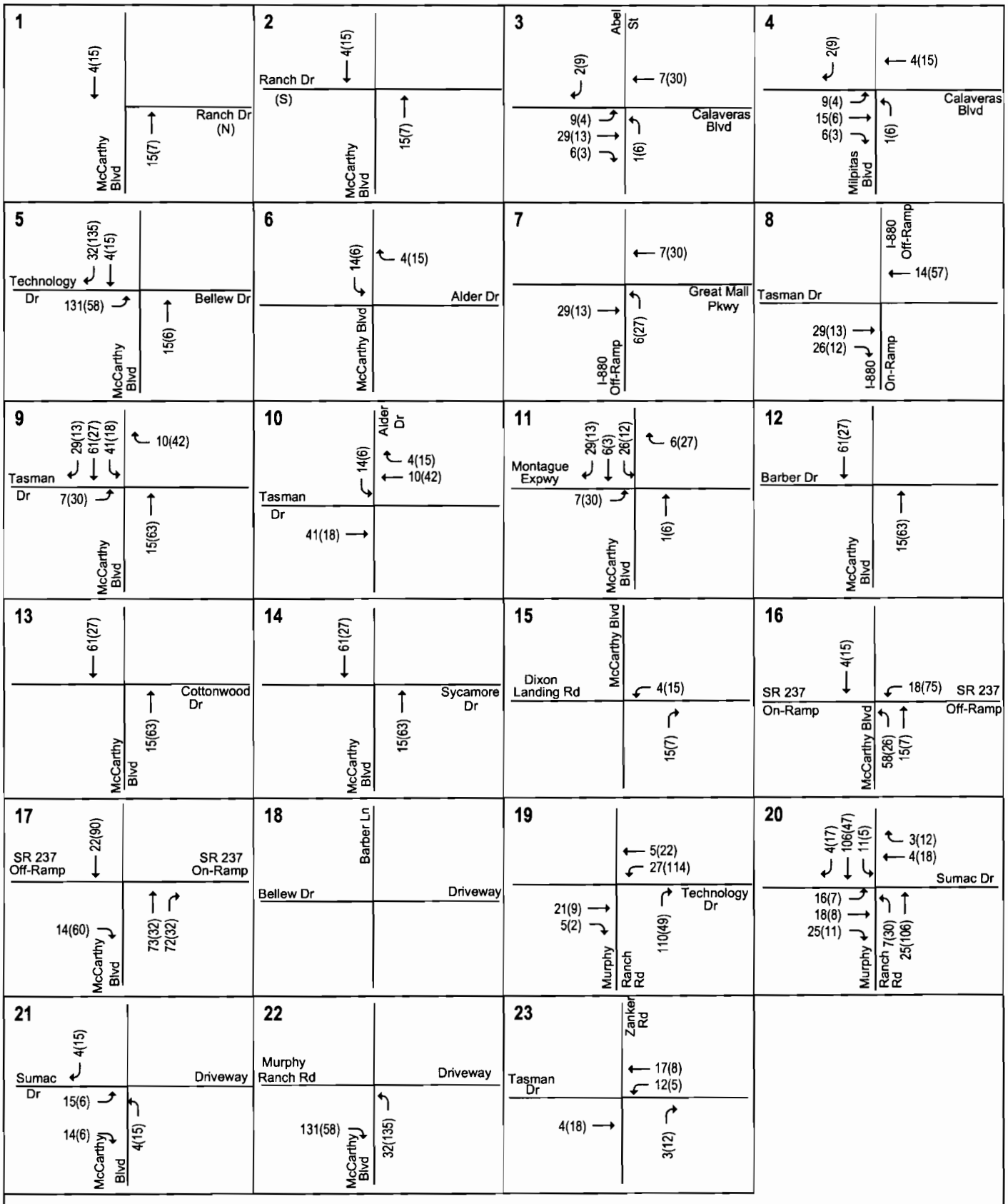


Figure 8

PROJECT TRIP DISTRIBUTION

Murphy Ranch Road Residential



Legend

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

Figure 9

PROJECT TRIP ASSIGNMENT

Murphy Ranch Road Residential

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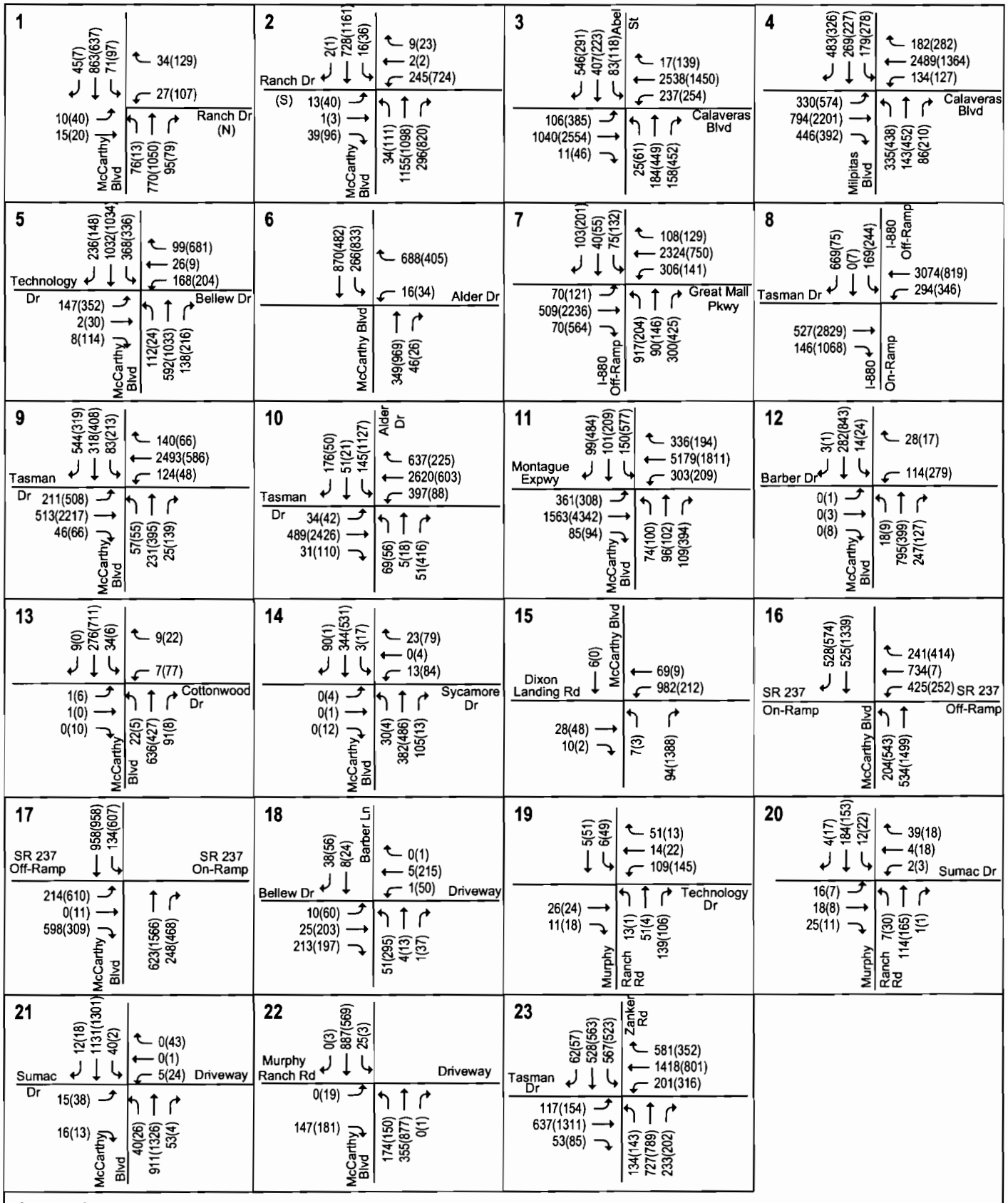

Legend

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

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Figure 10

PROJECT TRAFFIC VOLUMES

Murphy Ranch Road Residential

Intersection Level of Service Analysis

The results of the level of service analysis under project conditions are summarized in Table 9. The level of service calculation sheets are included in Appendix D. Under project conditions, the results show that five of the study intersections would operate at an unacceptable LOS measured against the City of Milpitas and CMP level of service guidelines. The intersection of Milpitas Boulevard/SR 237 (Calaveras Blvd) would operate at LOS F during the AM peak hour. The intersection of McCarthy Boulevard/ Tasman Drive would operate at LOS E during the AM peak hour. The intersection of Alder Drive/Tasman Drive would operate at LOS F during the PM peak hour. The intersection of Montague Expressway/McCarthy Boulevard-O'Toole Avenue would operate at LOS F during the PM peak hour. The unsignalized intersection of McCarthy Boulevard/Sumac Drive would operate at LOS F during both the AM and PM peak hours. The remaining study intersections would operate at an acceptable LOS D or better.

Significant Impact: The intersection of McCarthy Boulevard/Tasman Drive would operate at LOS D under background conditions. Under project conditions it would operate at LOS E. According to the City of Milpitas guidelines, this would constitute a significant impact.

> **Mitigation:** To mitigate this impact, southbound McCarthy Boulevard would need to be re-striped from the existing two left-turn lanes, one through lane, and one shared right/through lane to two left-turn lanes, one through lane, and one right-turn lane. An overlap phase for the southbound right turn movement would also be included. This mitigation measure would allow the intersection to operate at LOS D during the AM peak hour and LOS C during the PM peak hour.

Table 9
Project Intersection Levels of Service

Intersection	Peak Hour	Existing Ave. Delay	Existing LOS	Background Ave. Delay	Background LOS	Project Conditions Ave. Delay	Project Conditions LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
McCarthy Blvd and Ranch Dr (N)	AM	6.6	A	18.7	B	18.7	B	0.0	0.001
	PM	10.8	B	20.2	C	20.2	C	0.1	0.002
McCarthy Blvd and Ranch Dr (S)	AM	16.8	B	19.2	B	19.3	B	0.2	0.005
	PM	22.7	C	43.1	D	44.1	D	2.1	0.005
Abel St and SR 237 (Calaveras Blvd)*	AM	37.3	D	43.1	D	43.3	D	0.3	0.003
	PM	38.2	D	61.7	E	62.2	E	0.8	0.003
Milpitas Blvd and SR 237 (Calaveras Blvd)*	AM	55.8	E	82.3	F	82.9	F	1.2	0.003
	PM	40.0	D	41.9	D	42.2	D	0.5	0.008
McCarthy Blvd and Bellew Dr	AM	19.0	B	27.5	C	28.9	C	0.0	0.001
	PM	33.6	C	50.9	D	54.8	D	7.4	0.039
McCarthy Blvd and Alder Dr	AM	11.6	B	15.5	B	15.2	B	0.0	0.003
	PM	16.7	B	53.2	D	54.2	D	1.8	0.004
I-880 NB and Great Mall Pkwy	AM	24.6	C	44.4	D	45.1	D	1.0	0.003
	PM	19.3	B	29.1	C	29.2	C	0.1	0.003
I-880 SB and Tasman Dr	AM	13.6	B	22.7	C	22.9	C	0.1	0.003
	PM	13.1	B	27.1	C	27.3	C	1.7	0.007
McCarthy Blvd and Tasman Dr	AM	31.9	C	53.1	D	57.9	E	7.3	0.023
	PM	24.6	C	35.5	D	36.8	D	1.0	0.012
Alder Dr and Tasman Dr	AM	14.9	B	21.4	C	21.7	C	0.0	0.002
	PM	36.9	D	131.9	F	132.9	F	2.5	0.006
McCarthy Blvd/O'Toole and Montague Expwy*	AM	41.9	D	59.5	E	60.7	E	1.6	0.012
	PM	60.5	E	133.6	F	137.4	F	3.7	0.008
McCarthy Blvd and Barber Ln	AM	9.8	A	9.6	A	9.7	A	0.0	0.005
	PM	19.7	B	20.6	C	20.8	C	0.2	0.009
McCarthy Blvd and Cottonwood Dr	AM	13.0	B	15.4	B	15.6	B	0.1	0.005
	PM	15.5	B	16.1	B	16.4	B	0.1	0.009
McCarthy Blvd and Sycamore Dr	AM	10.6	B	9.9	A	10.9	B	1.0	0.006
	PM	13.1	B	12.2	B	12.2	B	-0.2	0.009
McCarthy Blvd and Dixon Landing Rd	AM	11.8	B	13.8	B	14.1	B	0.0	0.001
	PM	9.5	A	10.6	B	10.9	B	0.3	0.003

Table 9 (continued)
Project Intersection Levels of Service

SR 237 and McCarthy Blvd (W)	AM	15.2	B	15.2	B	15.5	B	0.4	0.022
	PM	16.6	B	19.6	B	20.2	C	1.1	0.013
SR 237 and McCarthy Blvd (E)	AM	15.2	B	16.8	B	17.0	B	1.0	0.040
	PM	15.7	B	19.4	B	20.1	C	0.7	0.016
Barber Ln and Bellew Dr	AM	12.6	B	12.6	B	12.6	B	0.0	0.000
	PM	18.6	B	18.6	B	18.6	B	0.0	0.000
Murphy Ranch Rd and Technology Dr (unsignalized)[1]	AM	7.7	A	7.7	A	8.2	A	0.6	0.071
	PM	7.4	A	7.4	A	8.2	A	0.9	0.115
Murphy Ranch Rd and Sumac Dr (unsignalized)[2]	AM	8.9	A	8.9	A	10.9	B	-	-
	PM	8.9	A	8.9	A	11.2	B	-	-
McCarthy Blvd and Sumac Dr (unsignalized)[2]	AM	27.9	D	Sat.	F	Sat.	F	-	-
	PM	46.8	E	Sat.	F	Sat.	F	-	-
McCarthy Blvd and Murphy Ranch Rd (unsignalized)[2]	AM	11.3	B	11.5	B	13.5	B	-	-
	PM	11.1	B	12.6	B	14.0	B	-	-
Zanker Rd and Tasman Dr	AM	34.3	C	36.0	D	36.5	D	0.8	0.005
	PM	35.7	D	43.8	D	44.8	D	1.7	0.007

* Denotes CMP intersection

[ ] - Denotes project impact.

[1] LOS for all-way stop intesection is based on the average of all movements.

[2] LOS for unsignalized intersection is based on worst leg.

Note: Sat. represents that the intersection is saturated and the delays are not meaningful.

North San Jose Deficiency Plan Analysis

Under background conditions using only San Jose's Approved Trips (as specified by San Jose), the 22-intersection average delay was 77 seconds. With the addition of project traffic, the 22-intersection average would remain at 77 seconds. This information is summarized in Table 10 and Appendix D. According to the NSJDP impact criteria, the proposed project would not have an impact on the North San Jose Deficiency Plan, and therefore, mitigation would not be required.

Table 10
North San Jose Deficiency Plan Intersection Levels of Service (PM Peak Hour)

	Background			Project		
Intersection	Avg. Delay /a/		LOS	Avg. Delay /a/		LOS
SR 237/North First Street (N)	113	/b/	F	113	/b/	F
SR 237/North First Street (S)	80		F	80		F
North First Street/Trimble Road	80		E	80		E
North First Street/Brokaw Road	151		F	151		F
I-880/North First Street (N)	17		B	17		B
I-880/North First Street (S)	18		B	18		B
SR 237/Zanker Road (N)	12		B	12		B
SR 237/Zanker Road (S)	18		B	18		B
Zanker Road/Trimble Road	121		F	121		F
Zanker Road/Brokaw Road	65		E	65		E
Montague Expressway/North First Street	154		F	154		F
Montague Expressway/Zanker Road	86		F	86		F
Montague Expressway/Trimble Road	144		F	144		F
Montague Expressway/McCarthy Boulevard	141		F	143		F
Montague Expressway/Old Oakland Road	100		F	100		F
Montague Expressway/Trade Zone Boulevard	84		F	84		F
Trimble Road/De La Cruz Boulevard	136		F	136		F
U.S. 101/Brokaw Road	34		C	34		C
I-880/Brokaw Road (W)	36		D	36		D
I-880/Broakw Road (E)	18		B	18		B
Brokaw Road/Old Oakland Road	49		D	49		D
Murphy Avenue/Lundy Avenue	43		D	43		D
Average	77		E	77		E

/a/ Whole intersection weighted average stopped delay expressed in seconds per vehicle.
/b/ Intersection delay is capped at 150% of the cycle length.

Project Freeway Segment Analysis

Traffic volumes on the study freeway segments under project conditions were estimated by adding project trips to the existing volumes obtained from the 2004 CMP Annual Monitoring Report. The results of the freeway analysis are summarized in Table 11. The results show that the project would not cause a significant increase in traffic volume (more than one percent of capacity) on any of the study freeway segments.

Table 11
Project Freeway Level of Service Analysis

				Existing Plus Project Trips					Project Trips			
				Mixed-Flow						Mixed-Flow		
Freeway	Segment	Direction	Peak Hour	Ave. Speed/a/	# of Lanes/a/	Volume/a/	Density	LOS	Total Volume	Volume	% Capacity	Impact?
I-880	Brokaw Rd to Montague Expwy	NB	AM	65	3	5,859	30.0	D	9	9	0.1%	*NO*
I-880	Brokaw Rd to Montague Expwy	NB	PM	66	3	4,397	22.2	C	37	37	0.5%	*NO*
I-880	Montague Expwy to Great Mall Pkwy	NB	AM	66	3	5,156	26.0	C	6	6	0.1%	*NO*
I-880	Montague Expwy to Great Mall Pkwy	NB	PM	66	3	5,176	26.0	C	26	26	0.4%	*NO*
I-880	Great Mall Pkwy to SR 237	NB	AM	63	3	6,430	34.0	D	0	0	0.0%	*NO*
I-880	Great Mall Pkwy to SR 237	NB	PM	41	3	6,270	51.0	E	0	0	0.0%	*NO*
I-880	SR 237 to Dixon Landing Rd	NB	AM	66	4	5,728	21.7	C	28	28	0.3%	*NO*
I-880	SR 237 to Dixon Landing Rd	NB	PM	15	4	5,142	85.7	F	12	12	0.1%	*NO*
SR 237	Zanker Rd to McCarthy Blvd	EB	AM	66	2	3,714	28.1	D	14	14	0.3%	*NO*
SR 237	Zanker Rd to McCarthy Blvd	EB	PM	61	2	4,448	36.5	D	58	58	1.3%	*NO*
I-880	Dixon Landing Rd to SR 237	SB	AM	65	4	7,027	30.0	D	7	7	0.1%	*NO*
I-880	Dixon Landing Rd to SR 237	SB	PM	66	4	5,729	24.1	C	29	29	0.3%	*NO*
I-880	SR 237 to Great Mall Pkwy	SB	AM	66	3	5,540	28.0	D	0	0	0.0%	*NO*
I-880	SR 237 to Great Mall Pkwy	SB	PM	66	3	4,750	24.0	C	0	0	0.0%	*NO*
I-880	Great Mall Pkwy to Montague Expwy	SB	AM	66	3	5,375	27.1	D	25	25	0.4%	*NO*
I-880	Great Mall Pkwy to Montague Expwy	SB	PM	39	3	6,211	53.1	E	11	11	0.2%	*NO*
I-880	Montague Expwy to Brokaw Rd	SB	AM	66	3	4,986	25.2	C	36	36	0.5%	*NO*
I-880	Montague Expwy to Brokaw Rd	SB	PM	21	3	5,116	81.2	F	16	16	0.2%	*NO*
SR 237	McCarthy Blvd to Zanker Rd	WB	AM	11	3	3,165	95.9	F	55	55	0.8%	*NO*
SR 237	McCarthy Blvd to Zanker Rd	WB	PM	25	3	4,585	61.1	F	25	25	0.4%	*NO*

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2004.

5.
Other Transportation Impacts

This chapter presents other transportation issues associated with the project. These include an analysis of:

- Impacts to bicycles and pedestrians;
- Impacts to transit facilities;
- Site access, circulation and parking; and
- Unsignalized intersections.

Unlike the level of service impact methodology, which is adopted by the City Council, the analysis below is based on professional judgement in accordance with the standards and methods employed by the traffic engineering community.

Pedestrians and Bicycles

Existing bicycle and pedestrian access to the site is provided by a series of sidewalks and bike lanes on McCarthy Boulevard, Tasman Drive, and Barber Drive. Bikes are also permitted to use the shoulder area of Montague Expressway. Although the streets within the project would not contain bike lanes, the traffic volumes and vehicle speeds would be sufficiently low that shared use of the roadway between bikes and motor vehicles would be feasible.

The pedestrian trips are not expected to exceed the carrying capacity of sidewalks along the site frontage or of sidewalks on streets surrounding the site. The increase in pedestrian trips is not expected to require new sidewalks, other than those already planned as part of the project. The existing pedestrian facilities and the proposed on-site sidewalks and walkways would be adequate to accommodate all pedestrian traffic on and around the project site.

Recommendation: The project proponent should provide ADA compliant sidewalks, wheelchair ramps, and lighting along the project frontage.

Transit Impacts

The current transit service in the project vicinity consists of VTA operated bus routes and VTA light rail service. Field observations have shown that these facilities operate within capacity. Although the proposed project would increase the demand for such facilities in the vicinity of the site, the addition on these trips would not result in a demand for transit service greater than what is currently being provided. The current network of sidewalks and crosswalks would be sufficient for proposed project occupants to access transit service in the project vicinity.

Residents of the proposed project would reside approximately seven-tenths of a mile from the I-880/Milpitas light rail station. The close proximity of the LRT station would increase the likelihood that future residents of the proposed project would ride transit. However, the incremental impact of the proposed project on system-wide ridership would be minimal.

Recommendation: The project proponent should coordinate with VTA to determine whether any modifications to bus stop locations would be required as a result of the project.

Site Access, Circulation, and Parking

This section describes the site access, circulation, and parking aspects of the proposed residential project. This review is based on a project site plan supplied to Hexagon on April 3, 2006.

Site Access

The proposed site plan shows three project driveways on Murphy Ranch Road and one project driveway on Technology Drive. There also would be an emergency access only driveway on Murphy Ranch Road. Driveways A and B would be located on Murphy Ranch Road and would provide access to the townhome development. Driveway C would be located on Murphy Ranch Road and would provide access to the six-story parking garage of the apartment complex. Driveway D would be located on Technology Drive approximately 340 feet west of Murphy Ranch Road. It would provide direct access to the apartment parking garage via the north side of the project site. All project driveways would contain one inbound lane and one outbound lane. The project driveways are shown on Figure 11.

The traffic volumes on Murphy Ranch Road are relatively low and project traffic would experience little delay upon entering or exiting the site. Outbound vehicle queues at the project driveways would rarely exceed two vehicles.

ITE standards for design and location of driveways are described below.

- Widths between 30 to 40 feet and 15-feet radii (driveways with low-volume activity may have widths of 24 feet, providing that 20-foot radii are used).
- Spacing of at least 35 feet apart.
- 51-150 feet of frontage for two driveways, 151-500 feet for 3 driveways.

Based on the current site plan, the project would meet these criteria with the following exceptions.

- Project driveway curb radii are not shown on the apartment site plan.

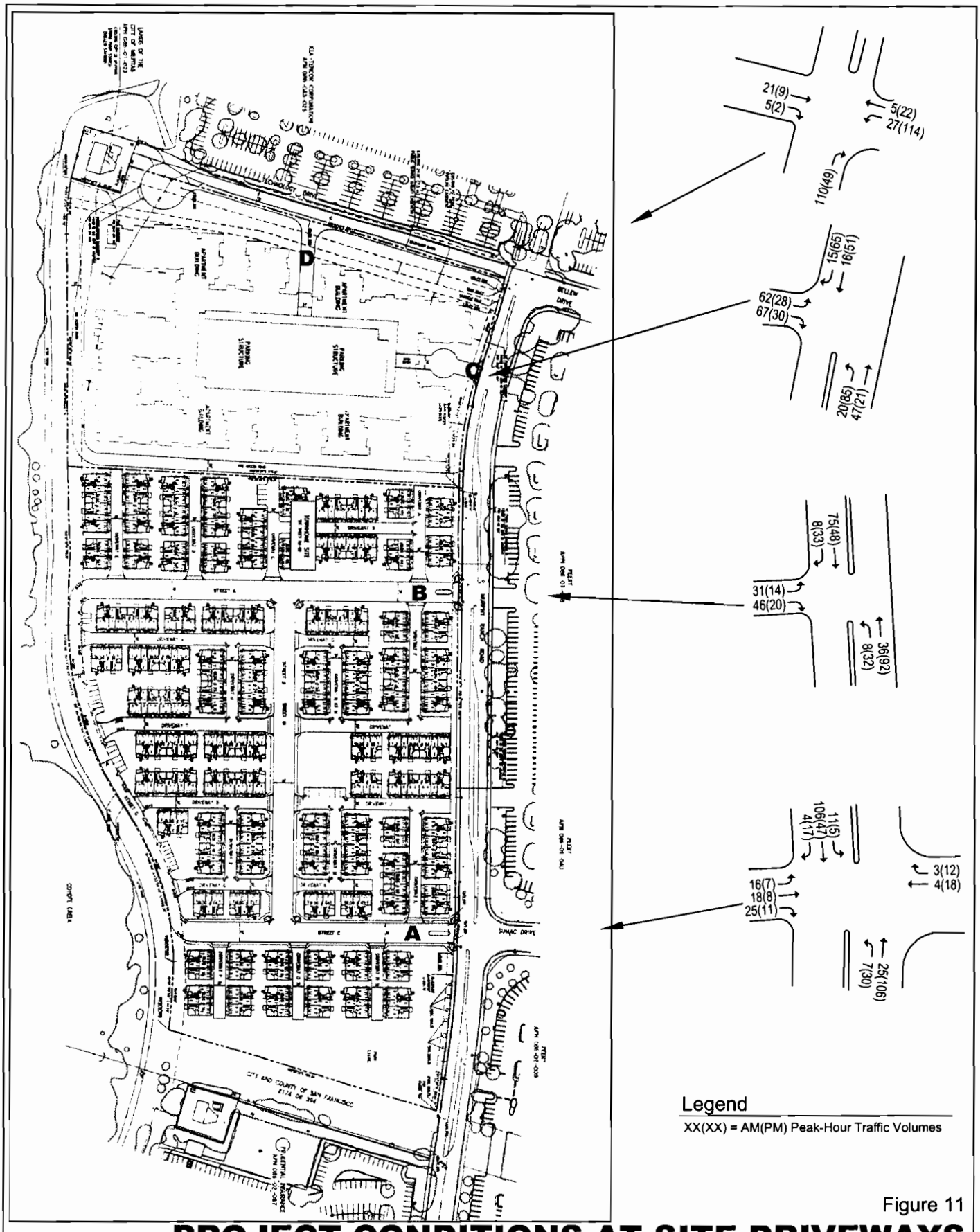

Figure 11

PROJECT CONDITIONS AT SITE DRIVEWAYS

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Murphy Ranch Road Residential

- The alignment of the proposed project driveway at the northern end of the townhome site is slightly offset from the existing driveway on the opposite side of the street. Generally, it is desirable for all opposing roadways to line up at their centerlines, or be offset sufficiently to allow for proper vehicle channelization. At intersections that are not properly aligned, the travel paths of left-turns could conflict (i.e. the travel paths of opposing left-turns occupy the same physical space). However, it appears that the alignment would be adequate to allow for safe travel paths. The bulb-noses of the proposed medians should be further evaluated to ensure adequate space is provided to allow for safe left-turns into the sites.

Some general recommendations for the current site plan are as follows.

- In order to ensure there would be sufficient sight distance at the project driveways, it would be necessary to maintain some of the existing parking prohibitions on-street along the site frontages in the vicinity of the driveways. Any landscaping, parking, and signage should be located in such a way to ensure an unobstructed view for drivers exiting the site.

- The proposed project would increase significantly the number of vehicle trips on the west leg of the Murphy Ranch Road/Technology Drive intersection. Currently, the west leg of the Murphy Ranch Road/Technology Drive intersection is poorly aligned with the east leg. In conjunction with the proposed project, improvements to the existing alignment should be considered.

On-Site Circulation

The townhome site's street layout would consist of four primary roads. Two roadways would run east/west and link the project driveways to Murphy Ranch Road. Two roadways would run north/south between the two east/west roadways. The apartment portion of the project would contain a multilevel parking structure. However, the layout is not shown on the current site plan.

The townhome plan shows several dead-end aisles. Dead-end aisles are undesirable because drivers can enter the aisle, and upon discovering that there is no available parking, must back out or conduct three-point turns. In areas where parking spaces are designated for specific individuals, dead-end aisles are less problematic. Generally, turn-arounds should be provided in residential developments when needed for emergency vehicles, garbage collection, or visitor parking.

Parking

According to City requirements, the apartment portion of the site would be designated R-4. The City of Milpitas parking standards for multi-family very high-density districts (R-4) are as follows:

- One Bedroom = 176 units x 1.5 spaces = 264 spaces.
- Two Bedrooms = 178 units x 2 spaces = 356 spaces.
- Three Bedrooms = 20 units x 2 spaces = 40 spaces.
- Guest = 660 spaces x 15% = 99 spaces.
- Total parking required per Milpitas = 759 spaces.

For the apartment portion of the site, the site plan notes shows 660 residential parking spaces and 99 guest parking spaces for a total of 759. This is equal to the 759 total parking spaces required by the City of

Milpitas. The project applicant will need to provide a more detailed site plan showing the location of the on-site parking.

According to City requirements, this portion of the site would be designated R-3. The City of Milpitas parking standards for multi-family high-density districts (R-3) are as follows:

- Townhomes = 285 units x 2 spaces = 570 spaces.
- Guest = 570 spaces x 20% = 114 spaces.
- Total parking required per Milpitas = 684 spaces.

According to the site plan notes, the townhome development would consist of 570 off-street resident spaces and 118 guest spaces for a total of 688 spaces. However, the current level of detail on the site plan shows only 33 on-street spaces distributed throughout the site. Due to insufficient detail on the current site plan, it is unclear where additional on-site parking would be provided.

Signal Warrant Analysis

The peak-hour signal warrant was checked for the four unsignalized intersections to determine whether signalization would be justified on the basis of project peak-hour volumes. The analysis showed that under project conditions the intersection of McCarthy Boulevard and Murphy Ranch Road would meet the signal warrant during the PM peak hour. The other three unsignalized study intersections do not meet the peak-hour volume warrant. The signal warrant analysis is summarized in Table 12 and included in Appendix E.

The two primary unsignalized intersections that project traffic would use to access McCarthy Boulevard are Murphy Ranch Road/McCarthy Boulevard and Sumac Drive/McCarthy Boulevard. Under project conditions, the traffic volume on Sumac Drive would not be sufficient to warrant a traffic signal. However, the minor street approach is projected to operate at a poor LOS. The intersection of Murphy Ranch Road/McCarthy Boulevard would warrant a signal during the PM peak hour. Given the number of vehicle trips at the subject intersections and the layout of the street network, only one traffic signal would be necessary. Since a traffic signal already exists to the north of the project site at Technology Drive/McCarthy Boulevard, it is recommended that a traffic signal be installed at the intersection of Murphy Ranch Road/McCarthy Boulevard to facilitate project access to the south.

The City of Milpitas requested that all-way stop control be evaluated for the intersection of Sumac Drive and Murphy Ranch Road. This assessment was made on the basis of the "Mulitway Stop Applications" section (Section 2B.07) of the *2003 Manual on Uniform Traffic Control Devices (MUTCD)*. This method makes no evaluation of intersection level of service, but simply provides an indication whether the traffic conditions would be sufficient to justify installation of all-way stop control. One of the criteria of the warrant states that the intersection minor street approaches must average at least 200 movements per hour for 8 hours. During the highest hour of the day at the intersection, under project conditions, the total of the minor street approaches would be only 104 vehicles per hour. Thus, the warrant would not be satisfied.

Table 12
Peak Hour Signal Warrant Summary

	AM Peak Hour			PM Peak Hour		
	Existing	Background	Project	Existing	Background	Project
Major Street: McCarthy Blvd total of both approaches -VPH	1518	2179	2187	1848	2647	2677
Minor Street: Sumac Dr highest volume approach -VPH	5	5	31	68	68	68
Major Street: McCarthy Blvd total of both approaches -VPH	1189	1409	1441	1202	1468	**1603**
Minor Street: Murphy Ranch Rd highest volume approach -VPH	16	16	147	142	142	**200**
Major Street: Murphy Ranch Rd total of both approaches -VPH	153	153	211	162	162	211
Minor Street: Technology Dr highest volume approach -VPH	93	93	203	44	44	180
Major Street: Murphy Ranch Rd total of both approaches -VPH	169	169	322	183	183	388
Minor Street: Sumac Dr highest volume approach -VPH	38	38	59	9	9	39

Bold Denotes: Meets Signal Warrant

6.
Cumulative Conditions

This chapter presents a summary of the traffic conditions that would occur under cumulative conditions. The analysis of cumulative conditions was conducted based on projected roadway link volumes using year 2030 land use data. AM and PM peak hour volumes were developed using the Valley Transportation Authority (VTA) Congestion Management Program (CMP) year 2030 Travel Demand Forecast (TDF) model. All *Existing General Plan* traffic volumes for year 2030 were supplied by the City of Milpitas.

Project Impact Criteria

For cumulative conditions, the traffic operations at the study segments were evaluated based on the volume-to-capacity ratio, which can be correlated to a level of service. Under cumulative conditions, a project is said to adversely impact a roadway segment if:

- The roadway segment is projected to operate below its LOS standard under the existing general plan and the proposed general plan change is projected to cause an increase in traffic of at least one percent of its capacity. **Or**

- The roadway segment is projected to operate at or better than its LOS standard under the existing general plan and the proposed general plan change is projected to degrade the level of service to less than acceptable levels.

On roadway segments under cumulative conditions, a project is said to benefit a roadway segment if:

- The roadway segment is projected to operate below its LOS standard under the existing general plan and the proposed general plan change is projected to cause a decrease in traffic of at least one percent of its capacity.

For CMP roadway segments, the minimum acceptable level of service is LOS E. At roadway segments in Milpitas that are not CMP roadway segments, the minimum acceptable level of service is LOS D. Calaveras Boulevard, Montague Expressway, I-880, and SR 237 are the only CMP roadways analyzed for this study.

2030 Network Assumptions

The year 2030 roadway network includes planned transportation improvements. The improvements included in the VTA CMP TDF model have a high probability of receiving funding in the future. Within the study area, the following improvements were included:

- **I-880 Widening Projects.** I-880 will be widened to include a high occupancy vehicle lane and auxiliary lane in each direction from Montague Expressway north into Alameda County.

- **Fremont Boulevard Extension to Dixon Landing Road.** Fremont Boulevard will be extended southward from its current terminus near Lakeview Drive to Dixon Landing Road. The Fremont Boulevard extension will include two lanes in each direction and will form the forth leg of the McCarthy Boulevard/Dixon Landing Road intersection. Fremont Boulevard Extension is a City of Fremont (developer funded) project and will occur when the King-Lyon property develops.

- **Calaveras Boulevard.** Calaveras Boulevard will be widened to six lanes between Milpitas Boulevard and Abel Street. Operational improvements are also planned for intersections on Calaveras Boulevard between I-680 and I-880.

- **Montague Expressway.** Montague Expressway will be widened to provide eight lanes between Great Mall Parkway and I-880. The intersection of Montague Expressway and Great Mall Parkway is planned for grade separation.

Planned improvements outside the study area are described in the VTA Valley Transportation Plan 2030, which is on file with the City of Milpitas. It should be noted that some VTP 2030 projects in the City of Milpitas have been identified for VTP 2030 funding. However, the City is still responsible for the 20 percent local match. Therefore, additional monetary contributions for these projects are necessary.

Year 2030 Traffic Volumes

The proposed project would convert the project site from an industrial designation in the existing General Plan to a residential designation. This would require a General Plan Amendment (GPA). Currently, the site is vacant. However, for the purposes of estimating the change in the General Plan designation, the traffic impacts of the project were evaluated relative to the current General Plan designation, as opposed to what is currently occupying the site. The current General Plan designation was assumed to be 280,000 square feet of industrial use. The traffic estimates for the proposed GPA were produced using a three-step process:

- **Traffic Generation.** A comparison of the trip generation between the proposed residential project and the existing land use designation is shown in Table 13. The proposed GPA would increase the trip generation from the site by 116 trips during the AM peak hour and 161 trips during the PM peak hour.

- **Traffic Assignment.** Industrial traffic was assigned to the roadway network based on a select zone analysis from the VTA CMP year 2030 TDF model (see Figure 12), existing travel patterns, and the relative locations of complementary land uses. The peak hour trips generated by the proposed residential project were assigned to the roadway network in accordance with the residential trip distribution pattern shown in Figure 8.

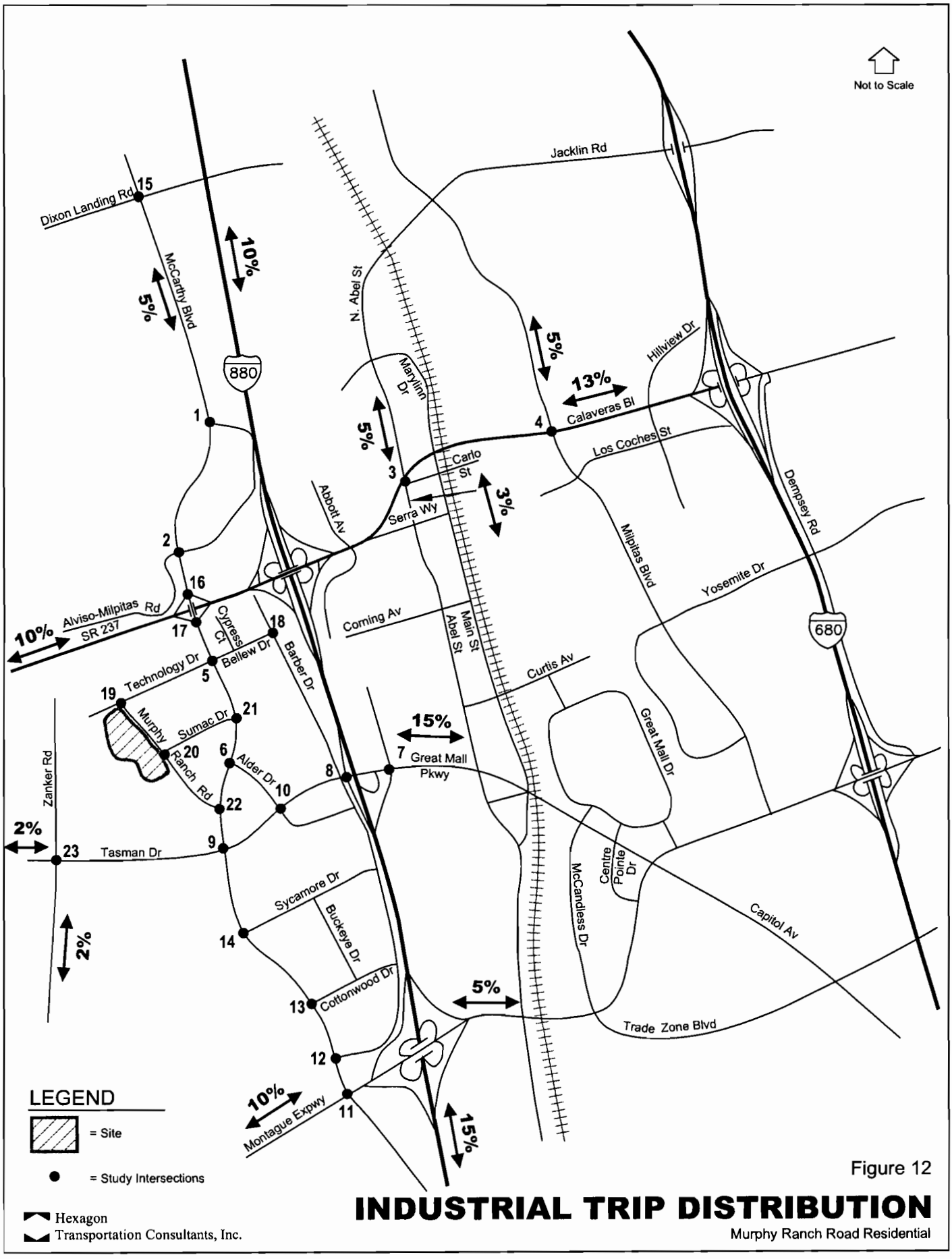

Figure 12

INDUSTRIAL TRIP DISTRIBUTION

Murphy Ranch Road Residential

- **Traffic Volume Tabulation.** For each roadway link, the projected peak hour traffic volumes with the proposed GPA were estimated by subtracting the trips generated by the industrial designation from the existing General Plan traffic volumes, and adding the estimated traffic generated by the proposed residential land use.

Table 13
Trip Generation - Proposed GPA

				AM Peak Hour				PM Peak Hour			
Land Use	Size[1]	Daily Rate	Daily Trips	Pk-Hr Rate	In	Out	Total	Pk-Hr Rate	In	Out	Total
Residential											
Multi-family[2]	285	8.0	2,280	0.64	36	146	182	0.8	160	68	228
Apartments[3]	374	6.0	2,244	0.48	36	144	180	0.54	141	61	202
Total Residential	659		4,524		72	290	362		301	129	430
Future Industrial Park[4]	280	8.0	2,240	0.88	222	25	246	0.96	54	215	269
Net Project Trips			**2,284**		**-149**	**265**	**116**		**247**	**-86**	**161**

Note 1: Numbers may not add due to rounding

Note 2: Net Project Trips are used for informational purposes only, the actual trip generations were assigned and then subtracted at the intersection levels.

[1] Residential size expressed in number of units; industrial size expressed in 1,000 square feet.

[2] Source: Residential, Condominium (or any multi-family 6-20 DU/acre). San Diego Association of Governments (SANDAG) *Trip Generation Rates*, April 2002.

[3] Source: Residential, Apartment (or any multi-family units more than 20 DU/acre). San Diego Association of Governments (SANDAG) *Trip Generation Rates*, April 2002.

[4] Source: Industrial, Industrial Park (no commercial). San Diego Association of Governments (SANDAG) *Trip Generation Rates*, April 2002.

Year 2030 Traffic Impacts

GPA conditions were evaluated relative to the existing General Plan in order to determine potential impacts. The impacts of the proposed General Plan change are summarized on Tables 14 and 15. According to City of Milpitas and CMP standards, the proposed GPA would not create any adverse significant impacts.

The proposed GPA would have a beneficial impact on ***eight*** roadway segments during the AM and PM peak hours. Thus, the proposed GPA would predominately benefit overall traffic operations in the area relative to the existing general plan. This is primarily because the residential trips generated by the GPA would be located in close proximity to the surrounding employment uses, thereby shortening trips for commuters.

Table 15
Year 2030 PM Peak-Hour LOS

Segment			2004	Existing 2030 General Plan				Proposed 2030 GPA					
From	To	Dir	Vol	Vol	Capacity	V/C	LOS	GPA Trips	Vol	V/C	LOS	% Inc	Impact?
Interstate 880													
Dixon Landing Road	Calaveras Boulevard	SB	5,700	8,800	11,000	0.80	D	24	8,824	0.80	D	0.22%	N
Calaveras Boulevard	Great Mall Parkway	SB	4,750	6,650	9,000	0.74	C	0	6,650	0.74	C	0.00%	N
Great Mall Parkway	Montague Expressway	SB	5,350	6,850	7,000	0.98	E	-10	6,840	0.98	E	-0.14%	N
Montague Expressway	Brokaw Road	SB	4,950	6,210	6,000	1.04	F	-15	6,195	1.03	F	-0.25%	N
Brokaw Road	Montague Expressway	NB	5,850	6,780	6,000	1.13	F	31	6,811	1.14	F	0.52%	N
Montague Expressway	Great Mall Parkway	NB	5,150	7,900	7,000	1.13	F	22	7,922	1.13	F	0.31%	N
Great Mall Parkway	Calaveras Boulevard	NB	3,920	7,000	7,000	1.00	F	0	7,000	1.00	F	0.00%	N
Calaveras Boulevard	Dixon Landing Road	NB	7,970	11,500	11,000	1.05	F	-9	11,491	1.04	F	-0.08%	N
State Route 237/Calaveras Blvd.													
N. First Street	Zanker Road	EB	4430	6,220	6,000	1.04	F	55	6,275	1.05	F	0.92%	N
Zanker Road	I-880	EB	5310	6,850	6,000	1.14	F	55	6,905	1.15	F	0.92%	N
I-880	Abbott Avenue	EB	1,270	4,400	4,000	1.10	F	-37	4,363	1.09	F	-0.93%	N
Abbott Avenue	Abel Avenue	EB	1,250	3,750	3,000	1.25	F	-37	3,713	1.24	F	-1.23%	N
Abel Avenue	Milpitas Boulevard	EB	1,370	3,550	2,000	1.78	F	-26	3,524	1.76	F	-1.30%	N
Milpitas Boulevard	Hillview Drive	EB	980	3,400	3,000	1.13	F	-22	3,378	1.13	F	-0.73%	N
Hillview Drive	I-680	EB	1,100	3,700	3,000	1.23	F	-22	3,678	1.23	F	-0.73%	N
I-680	Hillview Drive	WB	3,060	2,000	3,000	0.67	B	8	2,008	0.67	B	0.27%	N
Hillview Drive	Milpitas Boulevard	WB	2,460	1,700	2,500	0.68	B	8	1,708	0.68	B	0.32%	N
Milpitas Boulevard	Abel Street	WB	2,480	2,100	3,000	0.70	C	20	2,120	0.71	C	0.67%	N
Abel Street	Abbott Avenue	WB	3,060	2,280	3,000	0.76	C	31	2,311	0.77	C	1.03%	N
Abbott Avenue	I-880	WB	3,520	2,900	3,000	0.97	E	31	2,931	0.98	E	1.03%	N
I-880	Zanker Road	WB	3970	6,700	6,000	1.12	F	4	6,704	1.12	F	0.07%	N
Zanker Road	North First Street	WB	5370	6,050	6,000	1.01	F	4	6,054	1.01	F	0.07%	N
Montague Expressway													
Trimble Road	McCarthy Boulevard	EB	1,108	5,150	4,400	1.17	F	25	5,175	1.18	F	0.57%	N
McCarthy Boulevard	I-880	EB	622	5,500	4,400	1.25	F	-10	5,490	1.25	F	-0.23%	N
I-880	S. Main Street	EB	1,387	6,000	4,400	1.36	F	-4	5,996	1.36	F	-0.09%	N
S. Main Street	McCandless Drive	EB	1,268	6,200	4,400	1.41	F	-4	6,196	1.41	F	-0.09%	N
McCandless Drive	Great Mall Parkway	EB	646	5,380	4,400	1.22	F	-4	5,376	1.22	F	-0.09%	N
Great Mall Parkway	S. Milpitas Boulevard	EB	752	4,910	4,400	1.12	F	-4	4,906	1.12	F	-0.09%	N
S. Milpitas Boulevard	I-680	EB	424	4,900	4,400	1.11	F	-4	4,896	1.11	F	-0.09%	N
I-680	S. Milpitas Boulevard	WB	2,816	2,940	4,400	0.67	B	12	2,952	0.67	B	0.27%	N
S. Milpitas Boulevard	Great Mall Parkway	WB	2,400	2,470	4,400	0.56	A	12	2,482	0.56	A	0.27%	N
Great Mall Parkway	McCandless Drive	WB	2,306	2,390	4,400	0.54	A	12	2,402	0.55	A	0.27%	N
McCandless Drive	S. Main Street	WB	2,914	2,880	4,400	0.65	B	12	2,892	0.66	B	0.27%	N
S. Main Street	I-880	WB	3,339	2,800	4,400	0.64	B	12	2,812	0.64	B	0.27%	N
I-880	McCarthy Boulevard	WB	2,256	1,950	4,400	0.44	A	22	1,972	0.45	A	0.50%	N
McCarthy Boulevard	Trimble Road	WB	2,912	1,880	4,400	0.43	A	-6	1,874	0.43	A	-0.14%	N
Great Mall Parkway/Tasman Dr.													
Cisco Way	McCarthy Boulevard	EB	N/A	3,100	3,000	1.03	F	28	3,128	1.04	F	0.93%	N
McCarthy Boulevard	I-880	EB	238	2,850	3,000	0.95	E	-29	2,821	0.94	E	-0.97%	N
I-880	S. Abel Street	EB	317	2,320	3,000	0.77	C	-19	2,301	0.77	C	-0.63%	N
S. Abel Street	S. Main Street	EB	321	2,210	3,000	0.74	C	-19	2,191	0.73	C	-0.63%	N
S. Main Street	Montague Expressway	EB	433	3,140	3,000	1.05	F	-19	3,121	1.04	F	-0.63%	N
Montague Expressway	Trade Zone Boulevard	EB	318	2,960	3,000	0.99	E	-19	2,941	0.98	E	-0.63%	N
Trade Zone Boulevard	Montague Expressway	WB	928	1,190	3,000	0.40	A	22	1,212	0.40	A	0.73%	N
Montague Expressway	S. Main Street	WB	1,613	2,230	3,000	0.74	C	22	2,252	0.75	C	0.73%	N
S. Main Street	S. Abel Street	WB	1,473	1,330	3,000	0.44	A	22	1,352	0.45	A	0.73%	N
S. Abel Street	I-880	WB	2,032	1,030	3,000	0.34	A	22	1,052	0.35	A	0.73%	N
I-880	McCarthy Boulevard	WB	2,362	1,300	3,000	0.43	A	44	1,344	0.45	A	1.47%	N
McCarthy Boulevard	Cisco Way	WB	N/A	1,450	3,000	0.48	A	4	1,454	0.48	A	0.13%	N
McCarthy Boulevard													
Dixon Landing Road	Ranch Drive	SB	572	1,530	1,800	0.85	D	13	1,543	0.86	D	0.72%	N
Ranch Drive	Technology Drive	SB	800	1,660	2,700	0.61	B	123	1,783	0.66	B	4.56%	N
Technology Drive	Alder Drive	SB	969	1,450	1,800	0.81	D	12	1,462	0.81	D	0.67%	N
Alder Drive	Tasman Drive	SB	847	1,250	1,800	0.69	B	-31	1,219	0.68	B	-1.72%	N
Tasman Drive	Montague Expressway	SB	246	1,300	1,800	0.72	C	-16	1,284	0.71	C	-0.89%	N
Montague Expressway	Tasman Drive	NB	835	800	1,800	0.44	A	52	852	0.47	A	2.89%	N
Tasman Drive	Alder Drive	NB	369	1,130	1,800	0.63	B	113	1,243	0.69	B	6.28%	N
Alder Drive	Technology Drive	NB	374	1,440	1,800	0.80	D	-5	1,435	0.80	C	-0.28%	N
Technology Drive	Ranch Drive	NB	524	2,170	2,700	0.80	D	-45	2,125	0.79	C	-1.67%	N
Ranch Drive	Dixon Landing Road	NB	173	2,230	1,800	1.24	F	-4	2,226	1.24	F	-0.22%	N
Alder Drive													
McCarthy Boulevard	Tasman Drive	SB	930	1,050	1,400	0.75	C	-10	1,040	0.74	C	-0.71%	N
Tasman Drive	Barber Lane	SB	530	460	1,400	0.33	A	0	460	0.33	A	0.00%	N
Barber Lane	Tasman Drive	NB	387	550	1,400	0.39	A	0	550	0.39	A	0.00%	N
Tasman Drive	McCarthy Boulevard	NB	453	400	1,400	0.29	A	11	411	0.29	A	0.79%	N
Technology Drive/Bellew Drive													
Murphy Ranch Road	McCarthy Boulevard	EB	26	650	700	0.93	E	-41	609	0.87	D	-5.86%	N
McCarthy Boulevard	Barber Lane	EB	330	440	1,400	0.31	A	0	440	0.31	A	0.00%	N
Barber Lane	McCarthy Boulevard	WB	257	330	1,400	0.24	A	0	330	0.24	A	0.00%	N
McCarthy Boulevard	Murphy Ranch Road	WB	342	100	700	0.14	A	111	211	0.30	A	15.86%	N

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Table 14
Year 2030 AM Peak-Hour LOS

Segment			2004	Existing General Plan				Proposed GPA					
From	To	Dir	Vol	Vol	Capacity	V/C	LOS	GPA Trips	Vol	V/C	LOS	% Inc	Impact?
Interstate 880													
Dixon Landing Road	Calaveras Boulevard	SB	5,700	12,500	11,000	1.14	F	-15	12,485	1.14	F	-0.14%	N
Calaveras Boulevard	Great Mall Parkway	SB	4,750	6,500	9,000	0.72	C	0	6,500	0.72	C	0.00%	N
Great Mall Parkway	Montague Expressway	SB	5,350	8,330	7,000	1.19	F	24	8,354	1.19	F	0.34%	N
Montague Expressway	Brokaw Road	SB	4,950	7,100	6,000	1.18	F	34	7,134	1.19	F	0.57%	N
Brokaw Road	Montague Expressway	NB	5,850	6,750	6,000	1.13	F	-24	6,726	1.12	F	-0.40%	N
Montague Expressway	Great Mall Parkway	NB	5,150	6,330	7,000	0.90	E	-16	6,314	0.90	E	-0.23%	N
Great Mall Parkway	Calaveras Boulevard	NB	3,920	6,700	7,000	0.96	E	0	6,700	0.96	E	0.00%	N
Calaveras Boulevard	Dixon Landing Road	NB	7,970	9,300	11,000	0.85	D	26	9,326	0.85	D	0.24%	N
State Route 237/Calaveras Blvd.													
N. First Street	Zanker Road	EB	4430	5870	6,000	0.98	E	-8	5,862	0.98	E	-0.13%	N
Zanker Road	I-880	EB	5310	6230	6,000	1.04	F	-8	6,222	1.04	F	-0.13%	N
I-880	Abbott Avenue	EB	1,270	1,580	4,000	0.40	A	37	1,617	0.40	A	0.93%	N
Abbott Avenue	Abel Avenue	EB	1,250	1,550	3,000	0.52	A	37	1,587	0.53	A	1.23%	N
Abel Avenue	Milpitas Boulevard	EB	1,370	1,400	2,000	0.70	C	25	1,425	0.71	C	1.25%	N
Milpitas Boulevard	Hillview Drive	EB	980	1,570	3,000	0.52	A	11	1,581	0.53	A	0.37%	N
Hillview Drive	I-680	EB	1,100	1,300	3,000	0.43	A	11	1,311	0.44	A	0.37%	N
I-680	Hillview Drive	WB	3,060	3,240	3,000	1.08	F	-25	3,215	1.07	F	-0.83%	N
Hillview Drive	Milpitas Boulevard	WB	2,460	2,710	2,500	1.08	F	-25	2,685	1.07	F	-1.00%	N
Milpitas Boulevard	Abel Street	WB	2,480	3,030	3,000	1.01	F	-33	2,997	1.00	E	-1.10%	N
Abel Street	Abbott Avenue	WB	3,060	3,300	3,000	1.10	F	-47	3,253	1.08	F	-1.57%	N
Abbott Avenue	I-880	WB	3,520	3,790	3,000	1.26	F	-47	3,743	1.25	F	-1.57%	N
I-880	Zanker Road	WB	3,970	7,300	6,000	1.22	F	56	7,356	1.23	F	0.93%	N
Zanker Road	North First Street	WB	5370	7980	6,000	1.33	F	56	8,036	1.34	F	0.93%	N
Montague Expressway													
Trimble Road	McCarthy Boulevard	EB	1,108	2,100	4,400	0.48	A	-15	2,085	0.47	A	-0.34%	N
McCarthy Boulevard	I-880	EB	622	1,750	4,400	0.40	A	24	1,774	0.40	A	0.55%	N
I-880	S. Main Street	EB	1,387	3,030	4,400	0.69	B	13	3,043	0.69	B	0.30%	N
S. Main Street	McCandless Drive	EB	1,268	2,570	4,400	0.58	A	13	2,583	0.59	A	0.30%	N
McCandless Drive	Great Mall Parkway	EB	646	1,200	4,400	0.27	A	13	1,213	0.28	A	0.30%	N
Great Mall Parkway	S. Milpitas Boulevard	EB	752	2,070	4,400	0.47	A	13	2,083	0.47	A	0.30%	N
S. Milpitas Boulevard	I-680	EB	424	1,700	4,400	0.39	A	13	1,713	0.39	A	0.30%	N
I-680	S. Milpitas Boulevard	WB	2,816	4,750	4,400	1.08	F	-8	4,742	1.08	F	-0.18%	N
S. Milpitas Boulevard	Great Mall Parkway	WB	2,400	4,550	4,400	1.03	F	-8	4,542	1.03	F	-0.18%	N
Great Mall Parkway	McCandless Drive	WB	2,306	4,220	4,400	0.96	E	-8	4,212	0.96	E	-0.18%	N
McCandless Drive	S. Main Street	WB	2,914	4,960	4,400	1.13	F	-8	4,952	1.13	F	-0.18%	N
S. Main Street	I-880	WB	3,339	5,630	4,400	1.28	F	-8	5,622	1.28	F	-0.18%	N
I-880	McCarthy Boulevard	WB	2,256	4,670	4,400	1.06	F	-16	4,654	1.06	F	-0.36%	N
McCarthy Boulevard	Trimble Road	WB	2,912	5,020	4,400	1.14	F	27	5,047	1.15	F	0.61%	N
Great Mall Parkway/Tasman Dr.													
Cisco Way	McCarthy Boulevard	EB	N/A	1,270	3,000	0.42	A	-2	1,268	0.42	A	-0.07%	N
McCarthy Boulevard	I-880	EB	238	900	3,000	0.30	A	49	949	0.32	A	1.63%	N
I-880	S. Abel Street	EB	317	1,000	3,000	0.33	A	25	1,025	0.34	A	0.83%	N
S. Abel Street	S. Main Street	EB	321	1,150	3,000	0.38	A	25	1,175	0.39	A	0.83%	N
S. Main Street	Montague Expressway	EB	433	1,550	3,000	0.52	A	25	1,575	0.53	A	0.83%	N
Montague Expressway	Trade Zone Boulevard	EB	318	1,040	3,000	0.35	A	25	1,065	0.36	A	0.83%	N
Trade Zone Boulevard	Montague Expressway	WB	928	2,000	3,000	0.67	B	-26	1,974	0.66	B	-0.87%	N
Montague Expressway	S. Main Street	WB	1,613	3,460	3,000	1.15	F	-26	3,434	1.14	F	-0.87%	N
S. Main Street	S. Abel Street	WB	1,473	3,130	3,000	1.04	F	-26	3,104	1.03	F	-0.87%	N
S. Abel Street	I-880	WB	2,032	3,750	3,000	1.25	F	-26	3,724	1.24	F	-0.87%	N
I-880	McCarthy Boulevard	WB	2,362	4,000	3,000	1.33	F	-42	3,958	1.32	F	-1.40%	N
McCarthy Boulevard	Cisco Way	WB	N/A	4,220	3,000	1.41	F	28	4,248	1.42	F	0.93%	N
McCarthy Boulevard													
Dixon Landing Road	Ranch Drive	SB	572	1,800	1,800	1.00	F	-8	1,792	1.00	E	-0.44%	N
Ranch Drive	Technology Drive	SB	800	1,700	2,700	0.63	B	-77	1,623	0.60	B	-2.85%	N
Technology Drive	Alder Drive	SB	969	1,350	1,800	0.75	C	-8	1,342	0.75	C	-0.44%	N
Alder Drive	Tasman Drive	SB	847	1,220	1,800	0.68	B	120	1,340	0.74	C	6.67%	N
Tasman Drive	Montague Expressway	SB	246	1,100	1,800	0.61	B	56	1,156	0.64	B	3.11%	N
Montague Expressway	Tasman Drive	NB	835	1,440	1,800	0.80	D	-29	1,411	0.78	C	-1.61%	N
Tasman Drive	Alder Drive	NB	369	1,080	1,800	0.60	B	-60	1,020	0.57	A	-3.33%	N
Alder Drive	Technology Drive	NB	374	950	1,800	0.53	A	13	963	0.54	A	0.72%	N
Technology Drive	Ranch Drive	NB	524	910	2,700	0.34	A	68	978	0.36	A	2.52%	N
Ranch Drive	Dixon Landing Road	NB	173	600	1,800	0.33	A	14	614	0.34	A	0.78%	N
Alder Drive													
McCarthy Boulevard	Tasman Drive	SB	930	1,140	1,400	0.81	D	-13	1,127	0.81	D	-0.93%	N
Tasman Drive	Barber Lane	SB	530	850	1,400	0.61	B	0	850	0.61	B	0.00%	N
Barber Lane	Tasman Drive	NB	387	660	1,400	0.47	A	0	660	0.47	A	0.00%	N
Tasman Drive	McCarthy Boulevard	NB	453	740	1,400	0.53	A	-13	727	0.52	A	-0.93%	N
Technology Drive/Bellew Drive													
Murphy Ranch Road	McCarthy Boulevard	EB	26	100	700	0.14	A	119	219	0.31	A	17.00%	N
McCarthy Boulevard	Barber Lane	EB	330	500	1,400	0.36	A	0	500	0.36	A	0.00%	N
Barber Lane	McCarthy Boulevard	WB	257	310	1,400	0.22	A	0	310	0.22	A	0.00%	N
McCarthy Boulevard	Murphy Ranch Road	WB	342	520	700	0.74	C	-69	451	0.64	B	-9.86%	N

☐ Denotes Signficant Benefit ⬚ Denotes Significant Impact

In the past, the City of Milpitas has required development projects that would contribute traffic on regional roadways such as Calaveras Boulevard and Montague Expressway contribute monetarily to planned improvements. For the planned Montague Expressway improvements, the City has adopted a fee program for properties located in the Milpitas Business Park. For the planned improvements to Calaveras Boulevard, the City does not have an adopted development fee program, but has been collecting new development contributions towards improvements as mitigation for significant impacts. Monetary contributions are typically calculated based on the number of project trips added to a roadway and the cost of the planned improvements. The proposed project would contribute traffic to Calaveras Boulevard and Montague Expressway, and therefore, would likely be required by the City to make "fair share" contributions towards the planned improvements.

Appendix H

AIR QUALITY IMPACT ANALYSIS FOR THE MURPHY RANCH ROAD RESIDENTIAL PROJECT CITY OF MILPITAS

Prepared for:
David J. Powers & Associates
1885 The Alameda, Suite 204
San Jose, CA. 95126

May 2006

EXISTING CONDITIONS

Air Pollution Climatology

The amount of a given pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sunshine.

Northwest winds and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by autos and factories from upwind areas of the Peninsula toward San Jose, particularly during the summer months. Winds are lightest on the average in fall and winter. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can build up.

Pollutants can be diluted by mixing in the atmosphere both vertically and horizontally. Vertical mixing and dilution of pollutants are often suppressed by inversion conditions, when a warm layer of air traps cooler air close to the surface. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of the time in both the morning and afternoon. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

Topography can restrict horizontal dilution and mixing of pollutants by creating a barrier to air movement. The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Hayward Hills on either side of the South Bay restrict horizontal dilution, and this alignment of the terrain also channels winds from the north to south, carrying pollution from the northern Peninsula toward Milpitas.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution and terrain that restrict horizontal dilution give Milpitas a relatively high atmospheric potential for pollution compared to other parts of the San Francisco Bay Air Basin and provide a high potential for transport of pollutants to the east and south.

Ambient Air Quality Standards

Criteria Pollutants

Both the U. S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Table 1 identifies the major criteria pollutants, characteristics, health effects and typical sources. The federal and California

state ambient air quality standards are summarized in Table 2.

The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter (PM_{10} and $PM_{2.5}$)

Suspended particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. "Inhalable" PM consists of particles less than 10 microns in diameter, and is defined as "suspended particulate matter" or PM_{10}. Fine particles are less than 2.5 microns in diameter ($PM_{2.5}$). $PM_{2.5}$, by definition, is included in PM_{10}.

In 1997 new national standards for fine Particulate Matter (diameter 2.5 microns or less) were adopted for 24-hour and annual averaging periods. The current PM_{10} standards were to be retained, but the method and form for determining compliance with the standards were revised.

The State of California regularly reviews scientific literature regarding the health effects and exposure to PM and other pollutants. On May 3, 2002, the California Air Resources Board (CARB) staff recommended lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$ (particulate matter 2.5 micrometers in diameter and smaller). The new standards became effective on July 5, 2003.

On April 28, 2005 the California Air Resources Board established a new 8-hour standard for ozone (0.07 PPM), to become effective in 2006.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important, in terms of health risk, are diesel particulate, benzene, formaldehyde, 1,3-butadiene and acetaldehyde.

Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage and death.

Table 1: Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen. Often called photochemical smog.	! Eye Irritation ! Respiratory function impairment.	The major sources ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	! Impairment of oxygen transport in the bloodstream. ! Aggravation of cardiovascular disease. ! Fatigue, headache, confusion, dizziness. ! Can be fatal in the case of very high concentrations.	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	! Increased risk of acute and chronic respiratory disease.	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	! Aggravation of chronic obstruction lung disease. ! Increased risk of acute and chronic respiratory disease.	Diesel vehicle exhaust, oil-powered power plants, industrial processes.
Particulate Matter	Solid and liquid particles of dust, soot, aerosols and other matter which are small enough to remain suspended in the air for a long period of time.	! Aggravation of chronic disease and heart/lung disease symptoms.	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

Table 2: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	-- 0.08 PPM	0.09 PPM 0.07 PPM
Carbon Monoxide	8-Hour 1-Hour	9.0 PPM 35.0 PPM	9.0 PPM 20.0 PPM
Nitrogen Dioxide	Annual Average 1-Hour	0.05 PPM --	-- 0.25 PPM
Sulfur Dioxide	Annual Average 24-Hour 1-Hour	0.03 PPM 0.14 PPM --	-- 0.04 PPM 0.25 PPM
PM_{10}	Annual Average 24-Hour	50 $\mu g/m^3$ 150 $\mu g/m^3$	20 $\mu g/m^3$ 50 $\mu g/m^3$
$PM_{2.5}$	Annual 24-Hour	15 $\mu g/m^3$ 65 $\mu g/m^3$	12 $\mu g/m^3$ --
Lead	Calendar Quarter 30 Day Average	1.5 $\mu g/m^3$ --	-- 1.5 $\mu g/m^3$
Sulfates	24 Hour	--	25 $\mu g/m^3$
Hydrogen Sulfide	1-Hour	--	0.03 PPM
Vinyl Chloride	24-Hour	--	0.01 PPM

PPM = Parts per Million
$\mu g/m^3$ = Micrograms per Cubic Meter

Source: California Air Resources Board, Ambient Air Quality Standards (5/17/06)
http://www.arb.ca.gov.aqs/aaqs2.pdf

Ambient Air Quality

The Bay Area Air Quality Management District (BAAQMD) monitors air quality at several locations within the San Francisco Bay Air Basin. The closest multi-pollutant monitoring site to the project site is located in downtown San Jose on Jackson Street. Table 3 summarizes exceedances of State and Federal standards at this monitoring site during the period 2003-2005. Table 3 shows that ozone and PM_{10} exceed the state standards in the South Bay.

Of the three pollutants known to at times exceed the state and federal standards in the project area, two are regional pollutants. Both ozone and particulate matter (PM_{10} and $PM_{2.5}$) are considered regional pollutants in that concentrations are not determined by proximity to individual sources, but show a relative uniformity over a region. Thus, the data shown in Table 3 for ozone and PM_{10} provide a good characterization of levels of these pollutants on the project site.

Carbon monoxide is a local pollutant, i.e., high concentrations are normally only found very near sources. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes.

Attainment Status and Regional Air Quality Plans

The federal Clean Air Act and the California Clean Air Act of 1988 require that the State Air Resources Board, based on air quality monitoring data, designate portions of the state where the federal or state ambient air quality standards are not met as "nonattainment areas". Because of the differences between the national and state standards, the designation of nonattainment areas is different under the federal and state legislation.

The U. S. Environmental Protection Agency has classified the San Francisco Bay Area as a non-attainment area for the federal 8-hour ozone standard. The Bay Area was designated as unclassifiable/attainment for the federal PM_{10} and $PM_{2.5}$ standards.

Under the California Clean Air Act Santa Clara County is a non-attainment area for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The county is either attainment or unclassified for other pollutants.

Sensitive Receptors

The Bay Area Air Quality Management District defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill and the chronically ill) are likely to be located. These land uses include residences, schools playgrounds, child care centers, retirement homes, convalescent homes, hospitals and medical clinics. There are no sensitive receptors near the project site. The project itself, however, would be a new sensitive receptor.

Table 3: Summary of Criteria Pollutant Air Quality Data for San Jose Jackson Street and Fremont Chapel Way Sites

Pollutant	**Standard**	**Site**	**Days Exceeding Standard in:**		
			2003	**2004**	**2005**
Ozone	Federal 1-Hour	San Jose	0	0	0
		Fremont	0	0	0
Ozone	State 1-Hour	San Jose	4	0	1
		Fremont	4	0	1
Ozone	Federal 8-Hour	San Jose	0	0	0
		Fremont	1	0	0
Carbon Monoxide	State/Federal 8-Hour	San Jose	0	0	0
		Fremont	0	0	0
Nitrogen Dioxide	State 1-Hour	San Jose	0	0	0
		Fremont	0	0	0
PM_{10}	Federal 24-Hour	San Jose	0	0	0
		Fremont	0	0	0
PM_{10}	State 24-Hour	San Jose	3	4	1
		Fremont	0	0	1
$PM_{2.5}$	Federal 24-Hour	San Jose	0	0	0
		Fremont	0	0	0

Source: Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2006. (http: //www.arb.ca.gov./adam/cgi-bin/adamtop/d2wstart)

Significance Criteria

The document *BAAQMD CEQA Guidelines*[1] provide the following definitions of a significant air quality impact:

- A project contributing to carbon monoxide (CO) concentrations exceeding the State Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours or 20 ppm for 1 hour would be considered to have a significant impact.

- A project that generates criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds would be considered to have a significant air quality impact. The current thresholds are 15 tons/year or 80 pounds/day for Reactive Organic Gases (ROG), Nitrogen Oxides (NO_x) or PM_{10}. Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

- Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

- Any project with the potential to expose sensitive receptors or the general public to substantial levels of toxic air contaminants would be deemed to have a significant impact.

Despite the establishment of both federal and state standards for $PM_{2.5}$ (particulate matter, 2.5 microns), the BAAQMD has not developed a threshold of significance for this pollutant. For this analysis, $PM_{2.5}$ impacts would be considered significant if project emissions of PM_{10} exceed 80 pounds per day.

The BAAQMD significance threshold for construction dust impact is based on the appropriateness of construction dust controls. The BAAQMD guidelines provide feasible control measures for construction emission of PM_{10}. If the appropriate construction controls are to be implemented, then air pollutant emissions for construction activities would be considered less-than-significant.

[1] Bay Area Air Quality Management District, BAAQMD CEQA Guidelines, 1996 (Revised December 1999).

IMPACTS

Impact 1: Construction Dust Emissions. Construction activities such as demolition, clearing, excavation and grading operations, construction vehicle traffic and wind blowing over exposed earth would generate fugitive particulate matter emissions that would temporarily affect local air quality. This impact is potentially significant, but normally mitigable.

Construction dust would affect local air quality during implementation of the project. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed to the atmosphere. The proposed project would substantial excavation and earthmoving. The movement of earth on the site is a construction activity with a high potential for creating air pollutants. After grading of the site, dust would continue to affect local air quality during construction of the project.

According to the *BAAQMD CEQA Guidelines*, emissions of ozone precursors (ROG and NOx) and carbon monoxide related to construction equipment are already included in the emission inventory that is the basis for regional air quality plans, and thus are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area. Thus, the effects of construction activities would be increased dustfall and locally elevated levels of particulate matter (PM_{10} and $PM_{2.5}$) downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties. This is considered a potentially significant impact.

- **Mitigation Measure 1:** Consistent with guidance from the BAAQMD, the following measures shall be required of construction contracts and specifications for the project:

- Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers or dust palliatives;

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;

- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;

- Sweep daily (preferably with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;

- Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets;

- Apply non-toxic soil stabilizers to inactive construction areas;

- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);

- Limit traffic speeds on unpaved roads to 15 mph;

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;

- Replant vegetation in disturbed areas as quickly as possible.

The following are additional mitigation measures recommended by the BAAQMD to reduce engine exhaust emissions:

- Use alternative fueled construction equipment

- Minimize idling time (5 minutes maximum);

- Maintain properly tuned equipment;

- Limit the hours of operation of heavy equipment and/or the amount of equipment in use.

The above measures include all feasible measures for construction emissions identified by the Bay Area Air Quality Management District for large sites. According to the District threshold of significance for construction impacts, implementation of the measures would reduce construction impacts of the project to a less-than-significant level.

Impact 2: Construction TAC Emissions. During construction various diesel-powered vehicles and equipment would be in use on the site. Exposure of sensitive receptors to diesel particulate would represent a less-than-significant impact.

In 1998 the California Air Resources Board identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[2] High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truckstop) were identified as having the highest associated risk.

Health risks from Toxic Air Contaminants are function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of weeks at any one location. Additionally, construction related sources are mobile and transient in nature, and the bulk of the emission occurs within the project site at a substantial distance from most nearby receptors. Because of its

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[2] California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000.

short duration and lack of nearby sensitive receptors, health risks from construction emissions of diesel particulate would be a less-than-significant impact.

Mitigation Measure 2: None required.

Impact 3: Permanent Local Impacts. Project traffic would add to carbon monoxide concentrations near streets and intersections providing access to the site. This is a less than significant impact.

On the local scale, the project would change traffic on the local street network, changing carbon monoxide levels along roadways used by project traffic. Carbon monoxide is an odorless, colorless poisonous gas whose primary source in the Bay Area is automobiles. Concentrations of this gas are highest near intersections of major roads.

Carbon monoxide concentrations under worst-case meteorological conditions have been predicted for signalized intersections affected by project. These intersections were selected as having the worst intersection Level Of Service and highest average delay. Peak hour traffic volumes were applied to a screening form of the CALINE-4 dispersion model to predict maximum 1-and 8-hour concentrations near these intersections. Appendix 1 provides a description of the model and a discussion of the methodology and assumptions used in the analysis. The model results were used to predict the maximum 1- and 8-hour concentrations, corresponding to the 1- and 8-hour averaging times specified in the state and federal ambient air quality standards for carbon monoxide.

Table 4 shows the results of the CALINE-4 analysis for the peak 1-hour and 8-hour traffic periods in parts per million (PPM). The 1-hour values are to be compared to the federal 1-hour standard of 35 PPM and the state standard of 20 PPM. The 8-hour values in Table 4 are to be compared to the state and federal standard of 9 PPM.

Table 4 shows that existing predicted concentrations near the intersections meet the 1-hour and 8-hour standards. Background traffic increases would increase concentrations by up to 1.6 Parts Per Million (PPM). Traffic from the project would further increase concentrations by up to 0.2 Parts Per Million (PPM). However, concentrations with background and project traffic growth would not exceed the ambient air quality standards.

Since project traffic would not cause any new violations of the 8-hour standards for carbon monoxide, nor contribute substantially to an existing or projected violation, project impacts on local carbon monoxide concentrations are considered to be less-than-significant.

Mitigation Measure 3: None required.

Impact 4: Permanent Regional Impacts. Additional trips to and from the project would result in new air pollutant emissions within the air basin. The emissions from these new trips and area sources would not exceed the BAAQMD thresholds of significance for regional pollutants and so would represent a less-than-significant impact.

Table 4: Worst Case Carbon Monoxide Concentrations Near Selected Intersections, in Parts Per Million

Intersection	Existing		Existing + Background		Existing+ Background+ Project+	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
McCarthy/ Montegue	9.6	6.5	11.2	7.7	11.3	7.7
Abel/ Calaveras	10.8	7.3	11.5	7.8	11.5	7.8
Calaveras/ Milpitas	11.2	7.6	12.1	8.3	12.2	8.3
McCarthy/ Bellew	8.9	6.0	9.9	6.7	10.1	6.9
McCarthy/ Tasman	9.0	6.0	10.3	7.0	10.4	7.1
Alder/ Tasman	9.3	6.3	11.5	7.8	11.6	7.9
Most Stringent Standard	20.0	9.0	20.0	9.0	20.0	9.0

Vehicle trips generated by the project would result in air pollutant emissions affecting the entire San Francisco Bay Air Basin. Regional emissions associated with project vehicle use and residential area sources have been calculated using the URBEMIS2002 emission model. The methodology used in estimating vehicular emissions is described in Attachment 2.

The incremental daily emission increase associated with project land uses is identified in Table 5 for reactive organic gases and oxides of nitrogen (two precursors of ozone) and PM_{10}. The Bay Area Air Quality Management District has established threshold of significance for ozone precursors and PM_{10} of 80 pounds per day. Proposed project emissions shown in Table 5 would not exceed these thresholds of significance, the proposed project would have a less-than-significant effect on regional air quality.

Mitigation Measure 4: None required.

Impact 5: Increased Exposure to TACs. The project would include sensitive receptors that would be exposed to stationary and mobile sources of TACs. This impact would be significant.

The project is located within an industrial area. The current inventory of Toxic Air Contaminant emissions maintained by the Bay Area Air Quality Management District lists one source of TACs within one-fourth mile of the project: KLATencor. This facility abuts the project site to the north. This TAC source is not identified as a priority source requiring preparation of a health risk assessment or notification under the Air Toxics "Hot Spots" Information and Assessment Act.[3]

There are several diesel backup generators in the project vicinity to provide power in the case of a power outage to industrial buildings. More importantly, there are two diesel-powered stormwater pumping stations located at the northwest and southwest corners of the site. The pumping station at the northwest corner of the site utilizes 3 750-horsepower diesel engines to pump collected stormwater into Coyote Creek. The pumping station at the southwest corner of the site utilizes 3 335-horsepower diesel engines. These engines were installed in 1986 and represent relatively "dirty" diesel technology. They are permitted by the Bay Area Air Quality Management District. Because the permits pre-date TAC controls, the facilities have not been subject to a Health Risk Assessment.

In 1998 the California Air Resources Board (CARB) identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). To reduce public exposure to

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[3] Bay Area Air Quality Management District, Toxic Air Contaminant Control Program Annual Report 2002, June 2004.

diesel particulate, CARB approved in 2000 the *Risk Reduction Plan to Reduce Particulate*

Table 5: Project Regional Emissions in Pounds Per Day

	Reactive Organic Gases	**Nitrogen Oxides**	**PM_{10}**
Project Emissions	58.3	51.6	44.3
BAAQMD Significance Threshold	80.0	80.0	80.0

Matter Emissions from Diesel-Fueled Engines and Vehicles.[4] As part of the plan, CARB adopted an Airborne Toxic Control Measure (ATCM) for stationary diesel engines in February 2004. Private businesses and public agencies operating stationary prime and emergency standby diesel engines in California are required to reduce emissions from these engines down to specified limits by either retrofitting existing engines with control devices or replacing existing engines with new equipment that meets the standards.

Should the City of Milpitas decide to replace the existing engines rather than retrofit them, this would trigger BAAQMD New Source Review rules that require that a Health Risk Assessment be prepared. The Health Risk Assessment would quantify cancer and non-cancer risks at the closest residence, which is currently well over a mile from the facility.

The approval of the project would place a residential building within 120 feet of the pump plant exhaust at the northwest corner of the project site and within 150 feet of the pump plant exhaust at the southwest corner of the project site. Because of the size of the diesel engines at the facility northwest of the project, their proximity to residences and their upwind location under prevailing northwest wind, it highly probable that the pump facilities would have unacceptably high health risks that would preclude issuance of a permit.[5]

Since the project has the potential to expose sensitive receptors to substantial levels of toxic air contaminants it would be deemed to have a significant impact. The project would have a secondary impact in that approval of the project would probably preclude the installation of new diesel pumps at the two adjacent stormwater pumping plants, requiring that alternative technology be utilized.

Mitigation Measure 5: The project layout could be revised to increase the minimum distance between sources of diesel exhaust and residential buildings. At the north end of the project the parking structure, currently at the center of the proposed apartment complex, could be relocated to provide a buffer zone between the pumping plant and the nearest residential structure. Air handling systems could be designed to filter intake air to reduce exposure to residences. At the southern end of the project proposed parklands could be redesigned to provide a buffer zone between the pumping plant and residential structures. While these types of measures can reduce the exposure of project residents to toxic air contaminants, it is not likely to reduce exposures to levels that are less-than-significant, so this impact would remain significant after mitigation.

Alternatively, the applicant could negotiate with the City of Milpitas to pay the additional costs for replacing the pump engines with cleaner engines that otherwise would not be required by state law. It me possible to install new diesel engines with particulate traps and Selective Catalytic Reduction (SCR) or non-diesel engines (natural gas or electrical) that could reduce risks to below the significance threshold. The diesel option would require

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[4] California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000.

[5] Randy Frazier, Senior Engineer, Bay Area Air Quality Management District, personal communication May 18, 2006.

modeling studies demonstrating that the health risks are below the thresholds of significance.

If non-diesel engines are utilized or diesel engines can be found that are clean enough to meet the health risk significance thresholds, this impact could be reduced to a level that is less-than-significant.

Impact 6: Increased Exposure to odors. The project would include sensitive receptors that would be located downwind from potential odor sources. This impact would be less-than-significant.

The project would place new residences generally downwind of existing odor sources. The San Jose/Santa Clara Water Pollution Control Plant and Zanker Road Landfill are known sources of odor located generally upwind of the project site. *BAAQMD CEQA Guidelines* establishes project screening trigger levels for potential odor impacts. These are minimum distances that need to be provided between new sensitive receptors and various odor sources to avoid the potential for adverse odor impact. When these minimum distances are not met, the potential for odor impact exists.

The BAAQMD minimum distances for a wastewater treatment plan, sanitary landfill or composting facility is 1 mile. The project is more than 1 mile from the nearest portion of both the San Jose/Santa Clara Water Pollution Control Plant and Zanker Landfill, so odor impacts of the project would be less-than-significant.

Impact 7: Cumulative Regional Impacts. The project would require a General Plan Amendment that would result in an increase in daily trips/ vehicle miles traveled and therefore would also have a cumulatively significant regional air quality impact.

According the *BAAQMD CEQA Guidelines*, a project that generates criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds would have a significant air quality impact individually and cumulatively. Proposed project emissions shown in Table 5 would not exceed the BAAQMD thresholds.

The BAAQMD CEQA Guidelines do provide, however, that projects with individually insignificant impacts could have a cumulatively significant impact.[6] If a project requires a General Plan amendment it would have a significant cumulative impact if the project generates more Vehicle Miles Traveled than that anticipated under the previous land use designation. The proposed project does require a General Plan amendment, and the trip generation and Vehicle Miles Traveled under the proposed designation is substantially higher than under the existing designation. Therefore, the project would have a significant cumulative air quality impact on regional air quality.

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[6] Bay Area Air Quality Management District, BAAQMD CEQA Guidelines, April 1996 (Revised December 1999)

The project has been found to have a cumulative air quality impact because it involves a re-zoning where the new designation would result in greater Vehicle Miles Traveled than the existing zoning. The cumulative impact is related to inconsistency with the regional air quality plan which is based upon current general plan zoning. The inconsistency with the regional plan would be temporary, in that the regional air quality plans are regularly updated using the latest ABAG projections on population and employment. The inconsistency with the regional air quality plan would only exist until the next update of the air quality plans, when the proposed rezoning would be reflected in the ABAG projections.

Mitigation Measure 7: The *BAAQMD CEQA Guidelines* recommended mitigation measures for cumulative impacts are the same as those for project impacts. The following mitigation strategies should be utilized:

$ Provide a satellite tele-commute center within or near the development.

$ Provide secure and conveniently placed bicycle parking and storage facilities.

- Allow only natural gas fireplaces in residences
- Require outside power receptacles that would allow use of electric lawn and garden equipment for landscaping.
- Construct transit amenities such as bus turnouts/bus bulbs, benches, shelters, etc.
- Provide direct, safe, attractive pedestrian access from project land uses to transit stops and adjacent development.
- Utilize reflective (or high albedo) and emissive roofs and light colored construction materials to increase the reflectivity of roads, driveways, and other paved surfaces, and include shade trees near buildings to directly shield them from the sun's rays and reduce local air temperature and cooling energy demand.
- Provide physical improvements, such as sidewalk improvements, landscaping and bicycle parking that would act as incentives for pedestrian and bicycle modes of travel.

The above mitigation program would be expected to reduce emissions by 5-10%. Since trip generation under the proposed zoning is more than double that under the existing zoning, the project cumulative air quality impact would be significant and unavoidable.

ATTACHMENT 1: CALINE-4 MODELING

The CALINE-4 model is a fourth-generation line source air quality model that is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway. Given source strength, meteorology, site geometry and site characteristics, the model predicts pollutant concentrations for receptors located within 150 meters of the roadway. The CALINE-4 model allows roadways to be broken into multiple links that can vary in traffic volume, emission rates, height, width, etc.

A screening-level form of the CALINE-4 program was used to predict concentrations.[7] Normalized concentrations for each roadway size (2 lanes, 4 lanes, etc.) are adjusted for the two-way traffic volume and emission factor. Calculations were made for a receptor at a corner of the intersection, located 25 feet from the curb. Emission factors were derived from the California Air Resources Board EMFAC2002 computer program based on a 2006 Bay Area vehicle mix.

The screening form of the CALINE-4 model calculates the local contribution of nearby roads to the total concentration. The other contribution is the background level attributed to more distant traffic. The 1-hour background level in 2006 was taken as 5.6 PPM and the 8-hour background concentration was taken as 3.7 PPM. These backgrounds were estimated using isopleth maps and correction factors developed by the Bay Area Air Quality Management District.

Eight-hour concentrations were obtained from the 1-hour output of the CALINE-4 model using a persistence factor of 0.7.

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[7] Bay Area Air Quality Management District, BAAQMD CEQA Guidelines, 1999.

ATTACHMENT 2: NEW VEHICLE TRAVEL EMISSIONS

Estimates of regional emissions generated by project traffic were made using a program called URBEMIS-2002.[8] URBEMIS-2002 is a program that estimates the emissions that result from various land use development projects. Land use projects can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial parks. URBEMIS-2002 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

Inputs to the URBEMIS-2002 program include trip generation rates, vehicle mix, average trip length by trip type and average speed. Trip generation rates for project land uses were provided by the project transportation consultant. Average trip lengths and vehicle mixes for the Bay Area were used. Average speed for all types of trips was assumed to be 30 MPH.

The URBEMIS-2002 run assumed summertime conditions with an ambient temperature of 85 degrees F.

The analysis was carried out assuming a 2007 vehicle mix. The URBEMIS-2002 output is attached.

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[8] Jones and Stokes Associates, Software User's Guide: URBEMIS2002 for Windows with Enhanced Construction Module, Version 8.7, April 2003.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\murphy.urb
Project Name: Murphy Ranch
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	11.23	4.98	3.68	0.00	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	47.07	46.62	491.49	0.29	44.29

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	58.31	51.60	495.17	0.29	44.30

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\murphy.urb
Project Name: Murphy Ranch
Project Location: San Francisco Bay Area
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.38	4.97	2.11	0	0.01
Hearth - No summer emissions					
Landscaping	0.25	0.01	1.56	0.00	0.01
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	10.60	-	-	-	-
TOTALS(lbs/day,unmitigated)	11.23	4.98	3.68	0.00	0.01

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments low rise	23.97	23.12	243.79	0.15	21.97
Condo/townhouse general	23.11	23.49	247.70	0.15	22.32
TOTAL EMISSIONS (lbs/day)	47.07	46.62	491.49	0.29	44.29

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Apartments low rise	23.38	6.00 trips/dwelling unit	374.00	2,244.00
Condo/townhouse general	17.81	8.00 trips/dwelling unit	285.00	2,280.00
		Sum of Total Trips		4,524.00
		Total Vehicle Miles Traveled		29,064.47

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/23.38 to 6.0/23.38
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/17.81 to 8.0/17.81

Changes made to the default values for Area

The consumer products option switch changed from on to off.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2007.

Appendix I

MURPHY RANCH
DRAFT NOISE ASSESSMENT
MILPITAS, CALIFORNIA

May 10, 2006

□ □ □

Prepared for:

Shannon George
David J. Powers & Associates
1885 The Alameda, Suite 204
San Jose, CA 95126

Prepared by:

Dana M. Lodico

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

Job No.: 05-230

Introduction

This report presents the results of the noise assessment conducted for the Murphy Ranch project proposed in Milpitas, California. The project proposes a General Plan Amendment and the development of multi-family housing on the site. This assessment presents the fundamentals of environmental noise, provides a discussion of policies and standards applicable to the project, presents the results of measurements conducted at the site, and evaluates of the potential significance of impacts resulting from the project.

Fundamentals of Environmental Noise

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table 1.

Most of the sounds which we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the facts that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called "A" weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-weighted levels measured in the environment and in industry are shown in Table 2 for different types of noise.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources which create a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{01}, L_{10}, L_{50}, and L_{90}, are commonly used. They are the A-weighted noise levels equaled or exceeded during 1%, 10%, 50%, and 90% of a stated time period. A single number descriptor called the L_{eq} is also widely used. The L_{eq} is the average A-weighted noise level during a stated period of time.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, DNL (day/night average sound level), was developed. The DNL divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average which includes both an evening and nighttime weighting.

Table 1: Definitions of Acoustical Terms Used in this Report

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

Table 2: Typical Noise Levels in the Environment

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

Regulatory Background

State CEQA Guidelines

There are no state laws directly applicable in the assessment of noise associated with new projects. The California Environmental Quality Act (CEQA) includes qualitative guidelines for determining significance of adverse environmental noise impacts. A project will typically have a significant impact if it would;

a. Expose people to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies.

b. Expose people to or generate excessive groundborne vibration or groundborne noise levels.

c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

e. For projects within an area covered by an airport land use plan or within two miles of a public airport or public use airport when such an airport land use plan has not been adopted, or within the vicinity of a private airstrip, expose people residing or working in the project area to excessive aircraft noise levels.

f. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

CEQA does not define the noise level increase that is considered substantial. Typically, an increase in the day-night average noise level of 3 dBA DNL or greater at noise-sensitive receptors would be considered significant when projected noise levels would exceed those considered satisfactory for the affected land use.

Checklist items (a), (c), and (d) are relevant to the proposed project. Ground-borne noise and vibration is not anticipated to occur as a result of the project. The project is not located in the vicinity of a private airstrip or public airport. Checklist items (b), (e), and (f) are not carried forward for further analysis.

California Building Code

Environmental noise intrusion into new multi-family housing is regulated by Appendix Chapter 12, Section 1208, Sound Transmission Control in the 2001 California Building Code. Interior noise levels attributable to exterior sources shall not exceed 45 dBA DNL in any habitable room. Multi-family residential proposed in noise environments exceeding 60 dBA DNL require an acoustical analysis showing that the proposed design will limit exterior noise to the prescribed allowable interior level.

City of Milpitas General Plan

The Noise Element of the City of Milpitas General Plan includes policy statements to guide public and private planning to attain and maintain acceptable noise levels. The following policies would be applicable to the project:

6-I-1 Use the guidelines in Table 6-1 (Noise and Land Use Compatibility-Not Shown) as review criteria for development projects.

The Noise and Land Use Compatibility Table indicates that multifamily residential land uses are considered "normally acceptable" up to 65 dBA DNL "conditionally acceptable" between 60 and 70 dBA DNL, "normally unacceptable" between 70 and 75 dBA DNL, and "clearly unacceptable" in environments that exceed 75 dBA DNL.

6-I-2 Require an acoustical analysis for projects located within a "conditionally acceptable" or "normally unacceptable" exterior noise exposure area. Require mitigation measures to reduce noise to acceptable levels.

6-I-3 Prohibit new construction where the exterior noise exposure is considered "clearly unacceptable" for the use proposed.

6-I-4 Where actual or projected rear yard and exterior common open space noise exposure exceeds the "normally acceptable" levels for new single-family and multifamily residential projects, use mitigation measures to reduce sound levels in those areas to acceptable levels.

6-I-5 All new residential development (single family and multifamily) and lodging facilities must have interior noise levels of 45 dBA DNL or less. Mechanical ventilation will be required where use of windows for ventilation will result in higher than 45 dBA DNL interior noise levels.

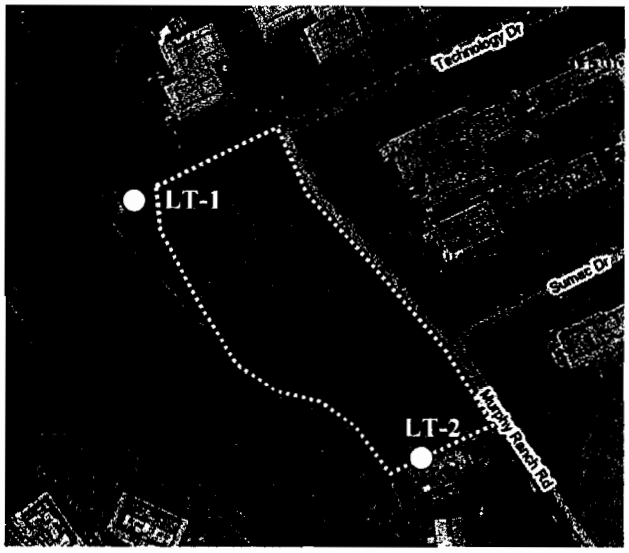
6-I-7 Avoid residential DNL exposure increases of more than 3 dB or more than 65 dB at the property line, whichever is more restrictive.

6-I-13 Restrict the hours of operation, technique, and equipment used in all public and private construction activities to minimize noise impact. Include noise specifications in requests for bids and equipment information.

Existing Noise Environment

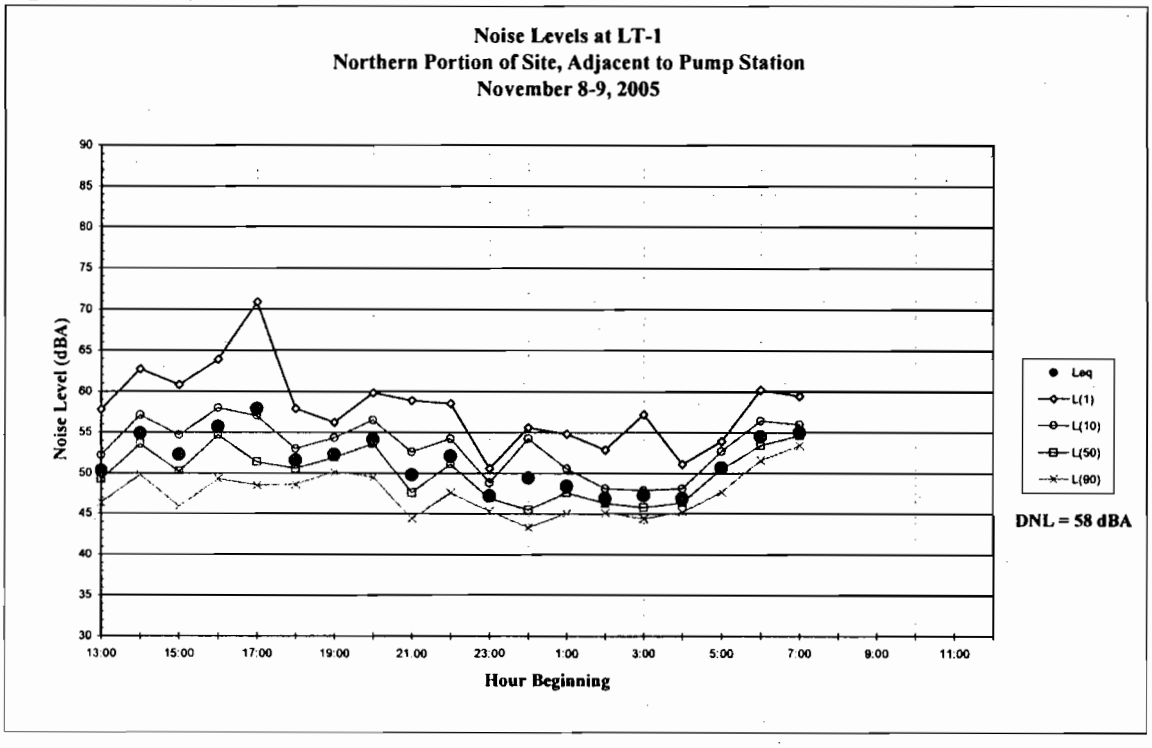
The project site is located along Murphy Ranch Road between Technology Drive and Sumac Drive in Milpitas, California and is bounded by Coyote Creek to the west and office and industrial park uses to the north, south, and east. The existing noise environment results primarily from local traffic, aircraft operations, and intermittent noise generated by the adjacent pump stations located south of and at the northwest corner of the site. A noise monitoring survey documented existing noise conditions from November 8th to 11th, 2005. Two long-term noise measurements were made at representative locations to complete the noise monitoring survey. Noise measurement locations are shown on Figure 1.

Figure 1: Noise Measurement Locations



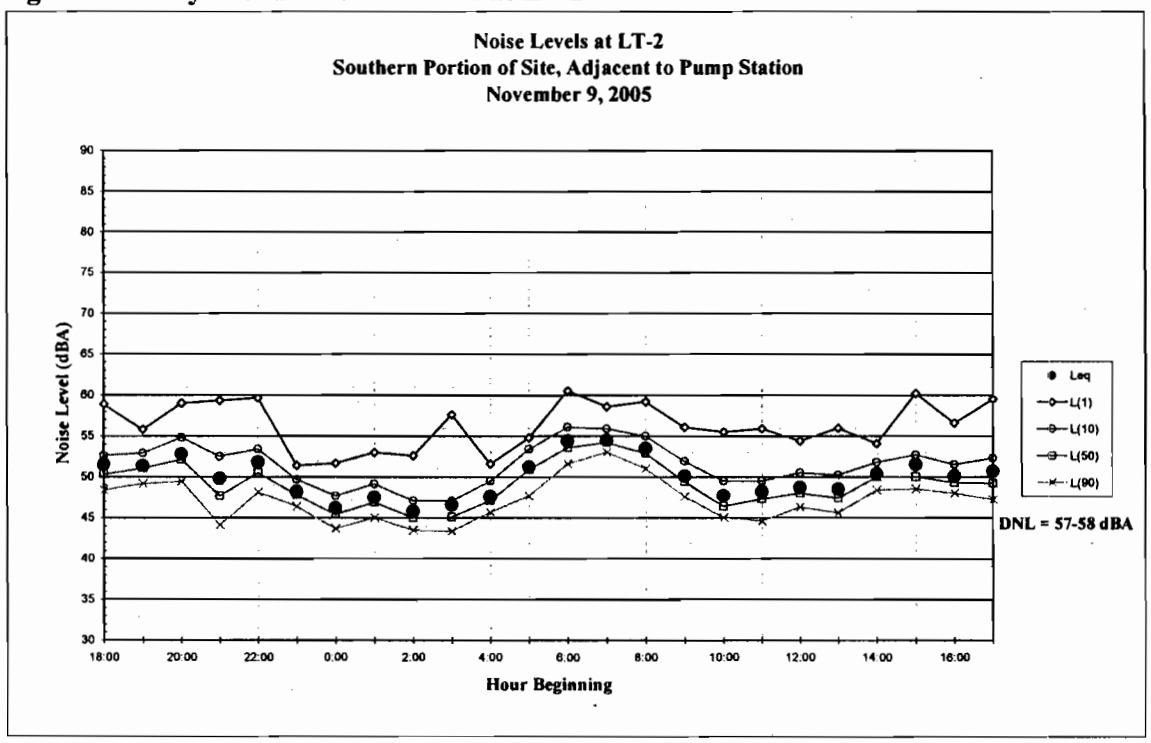
Noise measurement LT-1 was made adjacent to the City of Milpitas Storm Pump Station. Hourly average noise levels at this location ranged from 48 to 58 dBA L_{eq}, generated primarily by occasional traffic along Technology Drive and distant traffic noise. Aircraft generated instantaneous maximum noise levels of 50 to 55 dBA. Equipment at the pump station generated a noise level of about 62 dBA at this location during operation. The DNL noise level at this location is estimated to be 58 dBA. The trend in noise levels over the measurement period, which did not include any pump noise, is shown in Figure 2.

Figure 2 – Daily Trend in Noise Levels at LT-1



Measurement location LT-2 was located south of the project site, adjacent to the City and County of San Francisco Pump Station and to the Prudential Insurance parking lot. Hourly noise levels were typically 46 to 56 dBA L_{eq}. Local noise interference (such as an activity occurring very close to the measurement equipment) occurred during some measurement intervals, which raised hourly noise levels substantially, but would not be indicative of typical noise levels at this location. The DNL noise level at this location is estimated to be 57 to 58 dBA. Noise generated by the adjacent pump station was not distinguishable during the measurement location. The trend in noise levels over a 24-hour portion of the measurement period, which excluded extraneous interference, is shown in Figure 3.

Figure 3 – Daily Trend in Noise Levels at LT-2



NOISE IMPACTS AND MITIGATION MEASURES

Impact 1: **Noise and Land Use Compatibility.** Noise levels throughout the project site would meet the "normally acceptable" standard for multi-family residential land uses. **This is a *less-than-significant* impact.**

Exterior Noise Levels

The primary noise sources at the project site are distant and local traffic. Based on traffic data provided by Hexagon Transportation Consultants, Inc., future traffic noise levels would be about 62 dBA DNL at a distance of about 50 feet from the center of Murphy Ranch Road. The City of Milpitas Storm Pump Station is calculated to generate a noise level of 50 dBA at the project site property line during equipment operation. The Noise levels throughout the site would be below 65 dBA DNL and would meet the "normally acceptable" standard for multi-family land uses as specified by the City of Milpitas. This is a *less-than-significant* impact.

Interior Noise Levels
Interior average noise levels in new residential development must be maintained at or below 45 dBA DNL per the noise standard established by the State Building Code and the City of Milpitas. Interior noise levels are typically reduced by about 15 dBA inside homes with windows partially open and by about 20 to 25 dBA inside homes with windows closed, assuming standard California construction methods. Interior noise levels in residences located in noise environments of 60 dBA DNL or less can typically be maintained below standards (45 dBA DNL) with standard construction methods only. Where exterior day-night average noise levels are 60 to 70 dBA DNL, interior noise levels can typically be maintained below standards with the incorporation of an adequate forced air mechanical ventilation systems in the residential unit to allow residents the option of controlling noise by maintaining the windows closed.

Based on the site plan[1], residential buildings would be located at a setback of about 50 feet from the centerline of Murphy Ranch Road. At this distance, exterior traffic noise levels are anticipated to be about 62 dBA DNL in the future and interior noise levels could potentially exceed 45 dBA DNL if mitigation is not included in the design of these residences. At distances of 75 feet and further from the centerline of Murphy Ranch Road, exterior noise levels would be below 60 dBA DNL.

Mitigation 1: Residences located within 75 feet of the centerline of Murphy Ranch Road should be equipped with forced-air mechanical ventilation satisfactory to the City of Milpitas Building Department to allow the occupants the option of maintaining the windows closed to control noise.

Impact 2: **Project Operations.** Project generated traffic would not measurably change the existing noise environment at nearby noise sensitive uses. **This impact is *less-than-significant.***

Based on the data contained in the traffic study conducted for the project[2], traffic noise levels would increase as a result of the project and other growth in the area. However, the project would not result in substantial traffic noise increases or substantially contribute to any cumulative noise increases at any nearby noise sensitive uses (increases or contribution to increases are calculated to be less than 1 dB). Cumulative project traffic (which includes background and existing traffic volumes) would result in traffic noise increases of 3 to 4 dB along Murphy Ranch Road between Technology Drive and McCarthy Boulevard and traffic noise increases of 2 to 3 dB along Technology Drive between Murphy Ranch Road and McCarthy Boulevard, the majority of which is a result of project traffic. However, there are no existing noise-sensitive uses along these roadways. This is a *less-than-significant* impact.

Mitigation 2: None Recommended.

Impact 3: **Construction.** The construction of the project would temporarily increase noise levels in the immediate vicinity of the project site, but would not typically be audible at noise sensitive locations, which are located more than 700 feet from the project site. With appropriate construction time limits and noise suppression techniques, the noise generated by the construction activity would not generate significant adverse impacts. **With the incorporation of standard construction noise control measures, the impact would be considered *less-than-significant.***

---

[1] Site Plan Murphy Ranch, Carlson, Barbee, & Gibson, Inc., July 8, 2005.

[2] Murphy Ranch Road Residential, Traffic Impact Analysis, Hexagon Transportation Consultants, Inc., April 25, 2006.

Project construction activities would take place in a period of about one year and would include grading of the site, paving of roadways, construction of project infrastructure, and construction of individual buildings. The highest noise levels would be generated during grading of the site, with lower noise levels occurring during building construction. Large pieces of earth-moving equipment, such as graders and bulldozers, typically generate maximum noise levels of 80 to 85 dBA at a distance of 100 feet. Typical hourly average construction-generated noise levels are about 75 to 80 dBA L_{eq} measured at a distance of 100 feet from the site during busy construction periods. These noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor.

The closest noise-sensitive uses (residences) are located to the east across Highway 880, to the south near Montague Expressway, and to the west of Zanker Road, all more than 700 feet from the project site. At this distance and with the shielding provided by the surrounding terrain, construction noise levels would not typically be audible at these residences. With the implementation of the following standard noise control measures, this would be a *less-than-significant* impact:

- Limit construction to daytime hours (7:00 AM to 7:00 PM) with no construction activities on Sundays or holidays.

- Use available noise suppression devices and properly maintain and muffle loud construction equipment.

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

Mitigation 3: None Recommended.

Appendix J

MURPHY RANCH RESIDENTIAL PROJECT

Water Supply Assessment

(for compliance with SB 610 and 221 of 2001)

Approved by Milpitas City Council March 21, 2006

MURPHY RANCH RESIDENTIAL PROJECT
WATER SUPPLY ASSESSMENT

Summary

This assessment is completed in compliance with Senate Bill 610 and Senate Bill 221. SB 610 requires a water supply assessment to be included in any environmental documentation for projects exceeding 500 dwelling units. Under SB 221, approval by a City or County of certain residential subdivision requires an affirmative written verification of sufficient water supply.

The assessment was completed using the City of Milpitas 2005 Urban Water Management Plan, the Santa Clara Valley Water District 2005 Urban Water Management Plan and the City of Milpitas 2002 Water Master Plan. The finding is that sufficient supply is available to provide water to the proposed development.

Introduction

The Murphy Ranch Residential Project, proposed by Farfield Residential LLC, consists of 285 attached townhomes and 374 apartments for a total of 659 residential units on 22.74 gross acres. The project site includes Assessor Parcel Numbers 8601041 and 8601042 bounded by Technology Drive to the North, Murphy Ranch Road to the East, the Hetch Hetchy Right-of-Way to the South and Coyote Creek to the West. This project exceeds the threshold of 500 dwelling units and therefore requires a Water Supply Assessment under the provisions of California Senate Bill 610 and a written verification of sufficient water supply under California Senate Bill 221. The Water Supply Assessment and written verification shall include:

1. ***Identification and documentation of water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project.***
2. ***A discussion with regard to whether the public water system's total projected water supplies available during normal, single dry and multiple dry water years during a 20 year projection will meet the projected water demand associated with the project, in addition to the public water system's existing and planned future uses.***

As lead agency, and water service supplier for the Murphy Ranch residential project, the City of Milpitas prepared this water supply assessment in compliance with SB 610, SB 221 and the California Environmental Quality Act. The findings of this assessment shall be submitted to the City Council for approval and included in the environmental review process.

The City's most current Urban Water Management Plan, adopted in 2005, did not fully account for water use associated with this project as the parcels in question were

anticipated to have an industrial land use. The proposed project would result in a net increase of 0.15 mgd. The increase in water demand was calculated based upon the number of proposed dwelling units and proposed landscape square footage multiplied by water use factors identified in the 2002 Water Master Plan. It also includes 6.1 % average unaccounted for water.

Water Supply Assessment

This section includes an evaluation of the City of Milpitas capability to provide water to the proposed Murphy Ranch Residential Project described above. In accordance with SB 610 and SB 221, the assessment consists of documenting the following:

(1) Water Supplies
    a. Wholesale Sources
    b. Wholesale Supplies
(2) Demand Analysis
    a. Murphy Ranch Project Water Demands
    b. Urban Water Management Plan Projection
    c. Net Increase due to Murphy Ranch Project
(3) Comparison of Supply and Demand under Normal, Single Dry, and Multiple Dry Year Conditions
(4) Determination of sufficient or insufficient water supply

1. WATER SUPPLIES

Wholesaler Source: The City of Milpitas purchases potable water from two wholesalers, the San Francisco Public Utilities Commission (SFPUC) and the Santa Clara Valley Water District (SCVWD). About 60% of Milpitas' drinking water is from SFPUC and the remaining 40% is from the SCVWD. The City also purchases recycled water through the South Bay Water Recycling Program for irrigation purposes only.

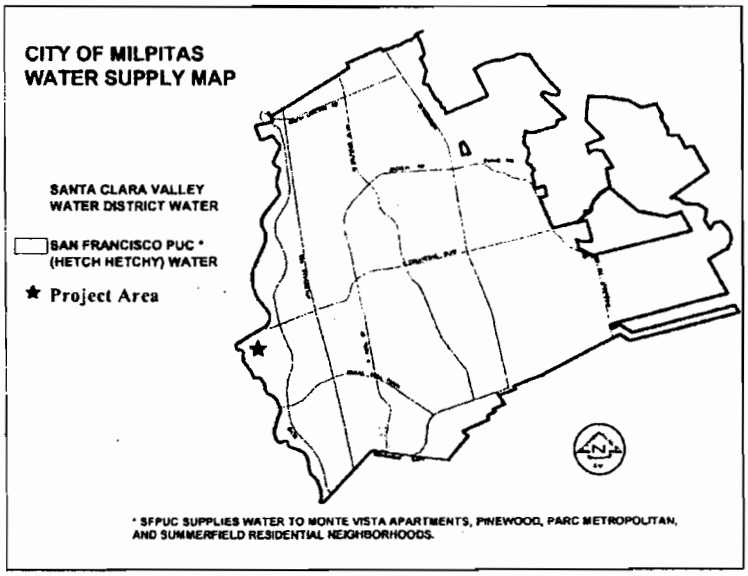
Annual supply guarantee is established by contractual agreements between the City and the water wholesalers. The SFPUC and SCVWD will continue to supply all potable water over the next 30 years. No new water sources will be added. However, two wells (Pinewood Well and future Curtis well) will be available for emergency purposes only.

Table 1 – Wholesale Supply Source

Supply Source	Entitlement	Right	Contract	Ever Used	Will Supply Project
SCVWD			Yes	Yes	Yes
SFPUC			Yes	Yes	No
Recycled Water			Yes	Yes	Yes common area landscape only
Wells (Emergency)		Yes		Yes	No

As shown in Figure 1, the City distributes SFPUC wholesale water to areas South of Calaveras Blvd and East of I-680 as well as areas North of Calaveras Blvd and East of I-880. The City distributes SCVWD wholesale water to all areas West of I-880 as well as those areas south of Calaveras Blvd and West of I-680 excluding the Monte Vista Apartments, Pinewood, Parc Metro, Parc Place, and Summerfield Residential neighborhoods. These two sources are not blended under normal operating conditions, however, they can be physically interconnected to provide emergency water supply if needed.

Figure 1: Water Source Map



The proposed Murphy Ranch Residential project is located West of I-880 and South of Calaveras Blvd. within the City's SCVWD wholesale distribution area. Therefore, this evaluation will assess project impacts related to water supply and demand within the SCVWD distribution area only.

Wholesale Supply: The City began receiving SCVWD water in August 1993. SCVWD's water supply system is comprised of both treatment and distribution facilities that include imported supply facilities, raw water conveyance facilities, treatment plants, local reservoirs, treated water transmission lines, and the groundwater basin.

SCVWD supplies water to local water retail agencies that, in turn, provide it to their customers in Santa Clara County. In order to maintain maximum efficiency and flexibility, the water supply comes from a variety of sources. Nearly half is from local groundwater aquifers, and more than half is imported from the Sierra Nevada through pumping stations in the Sacramento-San Joaquin River Delta. Both groundwater and imported water are sold to retailers. SCVWD also manages the groundwater basin to the benefit of agricultural users and other independent users who pump groundwater.

Local runoff is captured in local SCVWD reservoirs for recharge into the groundwater basin or treatment at one of SCVWD's Water Treatment Plants (WTPs). The total storage capacity of these reservoirs is about 170,000 AF.

The SCVWD operates three water treatment plants (WTP) – Santa Teresa, Rinconada, and Penitencia. Water is provided to the City of Milpitas' SCVWD turnout from the Penitencia WTP or Santa Teresa WTP via the Milpitas Pipeline.

Water purchase from the SCVWD is governed by contract between the SCVWD and the City of Milpitas (Attachment A). The actual contract amount is adjusted periodically based on an annual delivery schedule the City submits every 3 years for the subsequent 3-year period. This schedule is binding for the subsequent 3-year period, and the City's annual purchase must be at least 95% of the maximum year contained in the schedule. The City's monthly "supply guarantee" is at least 15% of the total estimated yearly amount.

Table 2 shows historical purchases from SCVWD. The downward trend is attributed partially to conservation efforts, conversion of potable water irrigation to recycled water irrigation and economic factors.

Table 2 – SCVWD Historical Water Purchases (mgd)

95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04	04-05
4.59	5.06	4.59	4.21	4.33	4.53	4.03	3.95	3.91	3.53

City of Milpitas 2005 Urban Water Management Plan Projected Supplies: The City of Milpitas 2005 Urban Water Management plan evaluated current and future water supply and demand in accordance with Section 10631 of the California Water Code. Table 3 below, lists water supplies the City can reasonably expect to receive under "Normal Year" conditions.

Table 3 – Quantity of Water Received in Normal Year (mgd)
Actual and Projected [a]

Water Supply Sources	94/95	99/00	04/05	09/10	14/15	19/20	24/25	29/30
SCVWD	3.98	4.33	3.53	5.78	6.37	6.63	6.88	7.13

[a] Source: City of Milpitas 2005 Urban Water Management Plan Table 3-1.

2. WATER DEMANDS

City of Milpitas 2005 Urban Water Management Plan Projected Demands: A variety of demographic factors may affect water use. Section 2.4 of the City of Milpitas 2005 Urban Water Management Plan lists planning assumptions used to project future water demands. Table 4 provides the actual and projected water demands under normal conditions. Water demand includes an average unaccounted for water loss of 6.1%.

Table 4 – Normal Year Water Demand (mgd)
Actual and Projected [a]

Water Supply Sources	94/95	99/00	04/05	09/10	14/15	19/20	24/25	29/30
SCVWD	3.98	4.33	3.53	5.78	6.37	6.68	6.88	7.13

[a] Source: City of Milpitas 2005 Urban Water Management Plan Table 3-1.

The City of Milpitas 2005 Urban Water Management Plan assumed land use within the project area would remain consistent with the buildout scenario of the 2002 Water Master Plan. The Master Plan assumed that the project area (assessor parcels 8601041 and 8601042) would be developed with an industrial use by 2008. Water demand assigned to the project area is calculated in Table 5.

Table 5 – Project Area Water Demands Included In The City of Milpitas 2005 Urban Water Management Plan Demand Calculations [a]

APN Number	Parcel Size (Acres)	Water Use Factor (gpd/acre)	Water Demand (gpd)
8601042	14.09	1250	17,612
8601041	7.59	1250	9,488
Total (gpd)			**27,100**

[a] City of Milpitas 2002 Water Master Plan Table 3-1

Project Demand: The proposed Murphy Ranch project consists of 285 Townhouses, 374 apartments and 6.38 acres of irrigated landscape. Projected water demands for this project are shown in Table 6 and are calculated assuming 2.7 residents per unit and a water demand of 90 gallons per capita per day per the City's 2002 Water Master Plan. As indicated in Table 7, the proposed project will result in a 141,331 gpd net increase in water demand (158 Ac-Ft per year). ***Adjusting for a 6.1 % average unaccounted for water loss, the project will require an additional supply of 150,512 gpd (169 Ac. Ft. per year).***

Table 6 Murphy Ranch Residential Project Water Demand (gpd)

	Development Density	Water Use Factor	Water Demand (gpd)
Townhouses	285 du	243 gpd/du [a]	69,255
Apartments	374 du	243 gpd/du [a]	90,882
Landscape	6.38 acre	1300 gpd/acre [b]	8,294
Total			**168,431**

[a] Calculated based on MFVH water use factor of 9720 gpd/acre per 2002 Water Master Plan Table 3-1. Assumes 40 units per acre.
[b] City of Milpitas 2002 Water Master Plan Table 3-1.

Table 7 Project Impact on Water Demand

	Water Demand
Murphy Ranch Development Demand	168,431 gpd
- 2005 UWMP projected demand	- 27,100 gpd
Net Increase over 2005 UWMP	**141,331 gpd**

Table 8 Project Impact on Water Supply

	Water Demand
Murphy Ranch Development Net Increase in Demand	141,331 gpd
6.1 % unaccounted for Water	+ 9,181 gpd
Net Increase over 2005 UWMP	**150,512 gpd**

Demand (Acre Feet) = 150,512 gpd * 365 d/y * 1hcf/748 g * 1 Ac Ft/435.6 hcf = **169 Ac Ft./year**

Development of the Murphy Ranch Residential Project is expected to be completed by 2008. The 0.15 mgd. increase in water demand will apply to fiscal years 07/08 and beyond. The 0.15 mgd represents the worst case scenario as common area landscaping will be irrigated with recycled water.

Revised water demand projections (including project demand) are shown in Table 9. The water will be purchased through the Santa Clara Valley Water District. The SCVWD has reviewed and commented on the draft assessment (Attachment B). SCVWD's comments have been incorporated into the final document.

Table 9 – Projected Water Demand (mgd)
(2005 UWMP plus Project Demand)[a]

Water Supply Sources	94/95	99/00	04/05	09/10	14/15	19/20	24/25	29/30
SCVWD	3.98	4.33	3.53	5.93	6.52	6.78	7.03	7.28

[a] Source: City of Milpitas 2005 Urban Water Management Plan Table 3-1.

3. SUPPLY AND DEMAND COMPARISON FOR NORMAL, SINGLE DRY AND MULTIPLE DRY YEAR'S SUPPLY

Supply Reliability: To maintain water supply reliability and flexibility, SCVWD's water supply includes a variety of sources including local groundwater, imported water, local surface water, and recycled water. SCVWD has an active conjunctive water management program to optimize the use of groundwater and surface water, and to prevent groundwater overdraft and land subsidence.

Long-term planning and modeling analysis performed by SCVWD as part of the Integrated Water Resources Planning Study (IWRP) and the District's 2005 UWMP

indicates that if additional investments are made, future countywide demands can reliably be met. It is the intent of SCVWD to ensure that these additional investments be undertaken in accordance with the IWRP framework, which recommends a flexible resource mix be implemented in phases over the planning horizon. This flexibility allows the District to respond to changing and uncertain future conditions.

The net increase in demand of 169 acre-feet per year associated with the proposed development was not included in the analysis performed for the District's 2005 UWMP. This and other incremental increases in demand, when aggregated, have the potential to change the composition and timing of required future investments. Further analysis, within the structure of the District's long term planning framework, is required to better define the specific projects and project timing in order for the District to meet demands in the future. In addition, provisions of water supply to meet new growth is based upon assumptions (listed in the District 2005 UWMP) and funding for many long-term water supply projects and infrastructure projects has not been secured. However, as the primary water wholesaler in Santa Clara County, the District has a commitment to ensure that water supply is reliable to meet future demands in Santa Clara County, consistent with the County's and cities' General Plans and other appropriate regional and statewide projections.

Per Figures 6-2 through 6-4, and Tables 6-2 through 6-4 (pages 125-128) of the Santa Clara Valley Water District's 2005 Urban Water Management Plan, the SCVWD's supply will be reliable to meet future countywide demands during normal, single-dry and multiple-dry water years. Although this analysis presents projections of future water supply, ongoing coordination with the SCVWD will be necessary to ensure projections are consistent with SCVWD's long-term water management strategies. The City will continue to work with the SCVWD to refine future water supply projections and ensure that long-term planning efforts are consistent. Tables 10 through 12 compare water supply and demand under normal year, single-dry year and multiple-dry year conditions.

Table 10 Projected Normal Water Year SCVWD Service Area Supply and Demand Comparison

Fiscal Year	Supply (mgd)	% of Projected Normal Year	Demand (mgd)	% of Year 04/05	Difference Supply – Demand (mgd)	Difference as % of Supply	Difference as Percent of Demand
09/10	5.93	100.00%	5.93	167.91%	0	0.00%	0.00%
14/15	6.52	100.00%	6.52	184.63%	0	0.00%	0.00%
19/20	6.78	100.00%	6.78	191.99%	0	0.00%	0.00%
24/25	7.03	100.00%	7.03	199.07%	0	0.00%	0.00%
29/30	7.28	100.00%	7.28	206.16%	0	0.00%	0.00%

Table 11 Projected Single-Dry Water Year Citywide Supply and Demand Comparison

Fiscal Year	Supply (mgd)	% of Projected Normal Year	Demand (mgd)	% of Projected Normal Year	Difference Supply Demand (mgd)	Difference as % of Supply	Difference as % of Demand

Fiscal Year	Supply (mgd)	% of Projected Normal Year	Demand (mgd)	% of Projected Normal Year	Difference Supply Demand (mgd)	Difference as % of Supply	Difference as % of Demand
09/10	5.93	100.00%	5.93	100.00%	0	0.00%	0.00%
14/15	6.52	100.00%	6.52	100.00%	0	0.00%	0.00%
19/20	6.78	100.00%	6.78	100.00%	0	0.00%	0.00%
24/25	7.03	100.00%	7.03	100.00%	0	0.00%	0.00%
29/30	7.28	100.00%	7.28	100.00%	0	0.00%	0.00%

Table 12 Projected Multiple-Dry Water Year Citywide Supply and Demand Comparison

Fiscal Year	Supply (mgd)	% of Projected Normal Year	Demand (mgd)	% of Projected Normal Year	Difference Supply Demand (mgd)	Difference as % of Supply	Difference as % of Demand
05/06	3.98	100.00%	3.98	100.00%	0	0.00%	0.00%
06/07	4.43	100.00%	4.43	100.00%	0	0.00%	0.00%
07/08	5.03	100.00%	5.03	100.00%	0	0.00%	0.00%
08/09	5.48	100.00%	5.48	100.00%	0	0.00%	0.00%
09/10	5.93	100.00%	5.93	100.00%	0	0.00%	0.00%
10/11	6.05	100.00%	6.05	100.00%	0	0.00%	0.00%
11/12	6.16	100.00%	6.16	100.00%	0	0.00%	0.00%
12/13	6.27	100.00%	6.27	100.00%	0	0.00%	0.00%
13/14	6.39	100.00%	6.39	100.00%	0	0.00%	0.00%
14/15	6.52	100.00%	6.52	100.00%	0	0.00%	0.00%
15/16	6.57	100.00%	6.57	100.00%	0	0.00%	0.00%
16/17	6.62	100.00%	6.62	100.00%	0	0.00%	0.00%
17/18	6.68	100.00%	6.68	100.00%	0	0.00%	0.00%
18/19	6.73	100.00%	6.73	100.00%	0	0.00%	0.00%
19/20	6.78	100.00%	6.78	100.00%	0	0.00%	0.00%
20/21	6.83	100.00%	6.83	100.00%	0	0.00%	0.00%
21/22	6.88	100.00%	6.88	100.00%	0	0.00%	0.00%
22/23	6.94	100.00%	6.94	100.00%	0	0.00%	0.00%
23/24	6.99	100.00%	6.99	100.00%	0	0.00%	0.00%
24/25	7.03	100.00%	7.03	100.00%	0	0.00%	0.00%
25/26	7.08	100.00%	7.08	100.00%	0	0.00%	0.00%
26/27	7.13	100.00%	7.13	100.00%	0	0.00%	0.00%
27/28	7.18	100.00%	7.18	100.00%	0	0.00%	0.00%
28/29	7.23	100.00%	7.23	100.00%	0	0.00%	0.00%
29/30	7.28	100.00%	7.28	100.00%	0	0.00%	0.00%

Conclusion

The Santa Clara Valley Water District has a commitment to ensure that water supply is reliable to meet future demands. The City recognizes that, in order to meet this commitment, funding for long-term water supply projects and infrastructure projects must be secured.

This evaluation is based on projections from the City of Milpitas 2005 Urban Water Management Plan, City of Milpitas 2002 Water Master Plan and the Santa Clara Valley

Water District's 2005 Urban Water Management Plan. Based upon evaluation results, the staff of the Utility Engineering Section of the City of Milpitas has determined that there is sufficient water supply to provide service to the Murphy Ranch Residential development project. However, to reduce potable water demand, this development should incorporate water conservation practices to the maximum extent practicable in accordance with City policies.

Attachment A

Contract Between Santa Clara Valley Water District And the City of Milpitas for a Supply of Treated Water

FORM 4/22/80

#A0657

CONTRACT BETWEEN SANTA CLARA VALLEY WATER DISTRICT AND

FOR A SUPPLY OF TREATED WATER

THIS CONTRACT is made and entered into on September 4, 1984, between the SANTA CLARA VALLEY WATER DISTRICT, hereinafter referred to as "District", and City of Milpitas, hereinafter referred to as "Contractor".

RECITALS:

A. District has executed contracts with the State of California Department of Water Resources and the United States Bureau of Reclamation, whereby District is and will be entitled to receive imported water and District intends to continue construction of a system within the boundaries of District to distribute water so received.

B. Included within said system are facilities to treat and filter such water; and Contractor is desirous of obtaining a supply of treated water from District.

AGREEMENT: For and in consideration of the mutual promises and covenants herein contained, the parties hereto agree as follows:

ARTICLE A. INTRODUCTORY PROVISIONS

1. Definitions - When used in this contract, the following terms shall have the meanings hereinafter set forth:

   a) "Fiscal Year" shall mean each 12-month period during the term hereof commencing July 1 of one year and terminating June 30 of the next succeeding year, both dates inclusive.

   b) "Each Contractor", or "Other Contractor", shall mean any entity, public or private, contracting with District for a supply of treated water.

   c) The "Act" shall mean the Santa Clara Valley Water District Act, as amended.

   d) "Board" shall mean the Board of Directors of the Santa Clara Valley Water District.

2. Term of Contract

   a) This contract shall become effective on the date first above written and shall remain in effect for a period of 70 years or until all loans and all bonds, the proceeds of sale of which have been used for the construction of water treatment and distribution facilities have been retired, whichever period shall be longer, provided, however, that in no event shall the term of this contract be deemed to extend beyond the period authorized by law.

b) The term of this contract may be extended for an additional term of years upon such terms and conditions as may be set forth in a written agreement of the parties hereto executed at least eighteen (18) months prior to expiration of the terms specified in the preceding Subsection 2a. If no such agreement shall be so executed, this contract shall terminate as specified in said Subsection 2a unless at least one year prior to said termination date Contractor shall notify District in writing that Contractor desires to extend the term hereof; in such event, said term shall be extended for an additional period of five years upon the covenants, agreements and conditions herein contained.

3. Successors and Assigns - Subject to the provisions of the succeeding Section 4 hereof, this contract and all the terms, covenants, agreements and conditions herein contained shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto.

4. Assignment - ~~No assignment or transfer by Contractor of this contract or any part hereof or of any rights hereunder or interest therein of Contractor, shall be valid unless approved by District~~ which approval District agrees shall not be unreasonably withheld. The foregoing provisions of this Section 4 to the contrary notwithstanding, no consent shall be required on an assignment to a Public Agency with the power of eminent domain; provided, such Public Agency expressly assumes the obligations of this contract and provided, further, that if said Public Agency assumes only a portion of the obligations of this contract, Contractor shall remain obligated for the remainder, or ~~in the event Contractor shall sell, transfer, or convey any part or parts of its water system to any entity, public or private, Contractor may assign to the purchaser thereof a portion of Contractor's rights, privileges and obligations hereunder and, in the event of any such assignment, Contractor shall be relieved of such portion of such obligations of Contractor so assigned if, following such sale,~~ transfer or conveyance, District shall commence to furnish treated water to such entity, or District under a contract with such entity existing prior to such sale, transfer or conveyance increases the amount of treated water delivered to such entity in order to meet in part the increased water requirements of such entity resulting from such sale, transfer or conveyance.

5. Adjustment of Schedule Purchases upon Other Water Service to Projected Service Area - Where Contractor has prepared and submitted a proposed water delivery schedule to District for an ensuing three-year period in accordance with Article B hereof in reasonable anticipation of and reliance upon projected water service by Contractor to its existing or future customers who receive or would receive service within a service area which shall be defined and may be amended from time to time by Contractor and attached hereto, as Exhibit A, and the schedule has been approved and made binding upon Contractor in accordance with Article B hereof, and where, in lieu of Contractor, any agency, public or private shall thereafter provide treated water service to any such customers and the existence of such circumstance and the necessity of Contractor to reduce its delivery schedule being shown to District and acknowledged by District to be facts (such acknowledgment to be in no case unreasonably withheld), then Contractor's said delivery schedule shall at its option be amended promptly in such manner as to reduce Contractor's scheduled water purchases from District hereunder by an amount fairly commensurate with such reduction of Contractor's anticipated or projected water service.

ARTICLE B. WATER SERVICE PROVISIONS

1. Water Delivery Schedules

a) ~~On October 15, 1986, and every three years thereafter, Contractor~~ shall submit in writing a proposed delivery schedule for the ensuing three-year period beginning July 1 of the following year. The proposed delivery schedule shall be submitted on a form provided by the District and shall indicate the amounts of treated water desired by Contractor during each year of the ensuing three-year period. Except as provided in Subsection c of this section, Contractor agrees that in submitting a proposed water delivery schedule it will not request an amount of water for each year which shall be less in total than 95 percent of the amount for the fiscal year containing the maximum amount in the then current three-year schedule unless Contractor shall have assigned or agreed to assign a portion of its rights, privileges, and obligations hereunder pursuant to the provisions of Article A, Section 4, hereof and i) District has consented to such assignment, or ii) Contractor otherwise shall have been relieved of a portion of its obligations hereunder pursuant to the provisions of said Article A, Section 4; that following occurrence of either event specified in the preceding clauses i) and ii), the foregoing provisions of this Subsection a) shall apply only to the unassigned portion of the Contractor's rights and obligations hereunder.

b) Upon receipt of such delivery schedule, District shall review same, and after consultation with Contractor and Other Contractors receiving treated water from District, shall approve such schedule or make such reductions therein as are consistent with District's ability to deliver water to Contractor and Other Contractors; provided, however, that subject to availability of funds, financing policies, construction schedules, and operating schedules, District will make every reasonable effort to approve each proposed delivery schedule submitted by Contractor and Other Contractors. Except as provided in Subsection c of this section, District agrees that it will approve a delivery schedule for said ensuing schedule period which will not be less in total amount for each fiscal year of said schedule period than 95 percent of the maximum fiscal year set forth in the then current schedule period.

c) Notwithstanding the provisions of Subsections a and b of this section, either Contractor or District may request that the minimum amount of water for each fiscal year in the ensuing three-year schedule period be reduced to a lesser minimum amount than prescribed in Subsections a and b. Upon written agreement by both Contractor and District, based on a showing of extraordinary circumstances, the delivery schedule may be approved at such lesser amount.

d) The approved delivery schedule shall be transmitted to Contractor prior to December 31 of the year in which the proposed delivery schedule is submitted. The prospective delivery schedule for fiscal years 1987-88 through 1989-90 is set forth in Exhibit B, attached hereto and by this reference made a part hereof.

e) For operating and planning purposes, Contractor shall, on forms provided by District, annually supply District with Contractor's anticipated monthly delivery schedules for the ensuing year and such information reasonably needed by District to determine projected ~~annual deliveries for the next ensuing five years.~~ Contractor's anticipated monthly delivery schedules shall not constitute a committment by Contractor to receive the amounts of water set forth therein but shall establish the monthly schedule amounts of treated water to be delivered to Contractor for certain purposes under Article C hereof.

10/7/94 per Bob Howard (395-8121) city bounded to 3 yr. schedule (attached) for min. payment & delivery.

2. Amounts of Water - Rates of Flow

(a) District agrees to deliver to Contractor during each fiscal year or fractional fiscal year of this Contract, as the case may be, the amounts of treated water set forth on the approved delivery schedule for each year or fractional fiscal year, as the case may be.

(b) District agrees to deliver to Contractor on demand in any month during the term of this contract at least 15 percent of the total amount of treated water which District has theretofore agreed to deliver to Contractor during the applicable fiscal year as shown on the approved delivery schedule.

(c) District further agrees to provide facilities capable of delivering and will deliver the amounts of water prescribed by Subsections a and b of this section on demand of Contractor at rates of flow up to an instantaneous maximum flow rate equivalent to 205 percent of the then current annual volume shown on the approved delivery schedule expressed as an equivalent uniform flow rate over the full year for an aggregate of 72 hours in any month and for such additional hours in any month as District has the capability to deliver at said rate, provided that District, at such times during the remainder of such month when District does not have the capability to deliver at said rate, may reduce such rate to an instantaneous maximum flow rate not to exceed 180 percent of said annual volume expressed as an equivalent uniform flow rate over the full year.

d) Notwithstanding the foregoing, during the period July 1, 1979 to June 30, 1990, District may limit the maximum flow rate for each Contractor to 180 percent of the then current annual volume of that Contractor shown on the approved water delivery schedule expressed as an equivalent uniform rate over the full year. District will give Contractor reasonable prior notice of any such proposed limit of maximum flow rate.

3. Delivery Structures

a) Water delivered to Contractor pursuant to this contract shall be provided from District facilities through delivery structures to be located at such locations as may be mutually agreed upon. Such delivery structures shall be designed and constructed or caused to be constructed by District. Design and bid costs shall be subject to favorable review and approval by the Contractor prior to award of

be under no obligation to operate, maintain, repair, replace or relocate the same.

4. Measurement of Water Deliveried - District shall measure all water delivered to Contractor and shall keep and maintain accurate and complete records thereof. For such purpose, District shall install, operate and maintain at all delivery structures such measuring devices and equipment as are satisfactory and acceptable to both parties.

5. Curtailment of Delivery During Maintenance Periods - District will make all reasonable effort to provide continuous service to Contractor but may temporarily discontinue or reduce the delivery of water to Contractor for the purpose of necessary investigation, inspection, maintenance, repair or replacement of any of the facilities necessary for the delivery of treated water to Contractor. District shall notify Contractor as far in advance as possible of any discontinuance or reduction and the estimated duration of such discontinuance or reduction. Recognizing that Contractor will rely on District for uninterrupted deliveries of water particularly during the high water consumption months each year, District agrees to use its best efforts throughout the term of this contract to make any such discontinuance or reduction in the delivery of water only during the period of November through March in any fiscal year. In the event of any discontinuance of or reduction in delivery of water, Contractor may elect to receive the amount of water which otherwise would have been delivered to it during such period under the approved water delivery schedule for that fiscal year at other times during such year, consistent with District's delivery ability considering the then current delivery schedules of all Other Contractors.

6. Suspension of Service Upon Default - In the event of any default by Contractor in the payment of any money required to be paid to District hereunder, District may, upon not less than three months' written notice to Contractor, suspend deliveries of water under this contract for so long as such default shall continue, provided, however, that during such period Contractor shall remain obligated to make all payments required under this contract and provided, further, that such delinquent amount shall accrue interest at the rate of one-half of one percent per month commencing on the due date of such delinquent amount and continuing until both the principal amount of such charges and the interest thereon are paid in full. Such suspension of delivery taken pursuant to this Section 6 shall not deprive District of or limit any remedy provided by this contract or by law for the recovery of money due or which may become due under this contract. In the event of any disagreement between Contractor and District as to the amount of any bill rendered to Contractor by District, water service shall not be discontinued if the disputed amount thereof is placed on deposit with District. Such deposit shall not preclude review and adjustment of any water bill as set forth in Article C, Section 8, hereof.

7. Water Quality - District agrees that all water to be delivered by it to Contractor pursuant to the terms of this contract will be pure, palatable, wholesome, potable and healthful and that all such water will be of such quality that the same may be used for domestic purposes at the points of delivery thereof to Contractor without further treatment. District understands that Contractor is a public utility furnishing water to its customers for domestic purposes and that water to be delivered by it to Contractor hereunder will be delivered by Contractor to said customers. District agrees that its system shall be constructed and operated during the term hereof in accordance with a permit or permits, including temporary permits, to be issued by the State Department of Health Services, copies of which will be furnished to Contractor upon receipt by District. District agrees that the treated water to be delivered to Contractor

pursuant to this contract shall conform to the quality requirements set forth in the then current primary and secondary standards for domestic water quality and monitoring regulations adopted by the California State Department of Health. Should the need arise, District and Contractor will cooperate fully in adjusting their respective processes to the extent reasonably practicable, and provided such adjustments do not affect other Contractors, to aid the Contractor in conforming to such law within the Contractor's distribution system.

ARTICLE C. PAYMENT PROVISIONS

1. The payments to be made by Contractor and Each Contractor for delivery of treated water shall be a price per acre-foot based upon the pricing policy adopted by the Board, dated January 18, 1971, as from time to time amended, which is set forth in Exhibit D, attached hereto and by this reference made a part hereof, and shall be the total of the basic water charges and treated water surcharge as determined by the District Board for each period for which a rate schedule is effective.

2. In determining the above charges, the basic water charge shall be equal to District's groundwater charge for water other than agricultural water (said words "agricultural water" being defined in the Act) in Zone W-2, which shall be determined annually by the Board in accordance with the legal provisions and requirements of the Act; provided, however, that during each rate period the District will consider all anticipated costs for each such rate period and will endeavor to establish during the first year of such rate period a groundwater charge that is intended to remain constant for the full rate period.

3. District shall charge for the delivery of treated water in accordance with the rate schedule for water service as such rate schedule is established by the Board. The Board of Directors shall review said rate schedule every three years to determine whether the schedule is in accordance with the most recent and anticipated costs and revenues of District. Accordingly, the Board shall, on or about the second Tuesday in March 1981, but not later than April 15, 1981, establish a rate schedule for the rate period commencing July 1, 1981 through June 30, 1984, and shall follow said procedure for each ensuing three-year period. Each such rate schedule shall be prospective in operation, but shall provide for the recovery of expenditures to be recovered by the basic water charge and the treated water surcharge during the period said rates are in effect and any shortages of revenue for said expenditures that may have been experienced during the preceding rate periods. It is agreed that the rates to be so established shall not be unreasonable or arbitrary, shall be based upon reasonable estimates of costs and water deliveries and shall be the same for Contractor and Other Contractors and all other persons, public or private, purchasing treated water from District, regardless of the point of delivery of such water by District; District agrees to use its best efforts throughout the term of this contract to collect from Other Contractors, and such other persons in accordance with such rate schedules, the appropriate sums of money without deduction or offset according to the respective amounts of treated water delivered by the District.

4. Contractor shall pay District the rate or rates set forth on the rate schedules during the period said rate schedules are effective for all water delivered to the Contractor; provided, however, that Contractor shall pay District at least a minimum charge each year applicable to water scheduled to be delivered in such year, which minimum charge shall be based upon an amount of treated water equal to 90 percent of the total amount of treated water to be delivered to Contractor during that fiscal year as shown on the approved delivery schedule; provided, however, that if Contractor during

10/7/94 per Bo Howa (395-01 This refers 3-yr. deliver

any other year of the current rate schedule period has purchased water in excess of 90 percent of the water scheduled to be delivered to Contractor during such other year, such delivery in excess of 90 percent for such other year may be used as a credit against years in such rate schedule period in which Contractor received less than 90 percent of the treated water as shown on the approved delivery schedule, and if Contractor has paid, purusant to such annual minimum charge, for water not delivered to it, Contractor shall have the right to receive such undelivered water without additional payment during the remainder of the then current rate schedule period at times when District has the delivery capability provided further, however, that:

a) If in any day of any year during the term hereof, District, for any reason, including reduced deliveries pursuant to the provisions of Article D hereof, shall be unable to deliver treated water to Contractor in an amount equal to 1/30 of the then current monthly scheduled amount as set forth in Article B, Section 1(e) as expressed as a uniform daily volume, the then minimum charge for that year shall be based upon an amount of water as calculated above in Section 4 reduced by an amount equal to the reduction required by District for each day a reduced delivery is required.

b) If in any day of any year during the term hereof District shall offer to deliver to Contractor water which shall fail to meet the quality requirements set forth in Article B, Section 7, hereof, then Contractor shall have the right to refuse to accept or reduce deliveries of water from District until such time as such water shall meet said quality requirements. In such event Contractor shall immediately notify District, and confirm in writing within 5 days of the beginning of any such period. In any such year the then minimum charge shall be reduced by an amount equal to the volume of water reduced by the Contractor up to an amount equal to 1/30 of the then current monthly scheduled amount as set forth in Article B, Section 1(e), as expressed as a uniform daily volume for each day that water service is so refused or reduced by the Contractor. If Contractor at any time, or from time to time during the term hereof, should have the right to refuse to accept water from District by reason of the foregoing provisions of this Subsection 4b, but should nevertheless fail to exercise such right, such failure shall in no event be deemed to waive or limit exercise of such right by Contractor. Except as set forth by the foregoing provisions of this Section 4, Contractor shall not be obligated to pay for any water not accepted by it. Nothing contained in this Section 4 shall in any way be deemed to limit Contractor's obligation to pay for all water accepted by it from District in accordance with the appropriate rate set forth from time to time in District's then applicable rate schedule.

c) If in any year during the term hereof, the Board of Directors of District shall by Resolution place in effect a water reduction program in excess of 10 percent of normal usage, the monthly scheduled amounts or portions thereof, as set forth in Article B, Section 1e, for that portion of the year when such water reduction program is in effect shall be reduced by the same percentage as required by the water reduction program less 10 percent. The Contractor shall be notified in writing of such water reduction program.

5. Surplus - If District shall determine, in accordance with sound accounting practice, that the aggregate of the revenues received by it in any fiscal year, or any rate period, during the term hereof a) from the sale of treated water to Contractor and Other Contractors, b) from the sale of raw water, and c) through collection of the groundwater charges referred to in Article E hereof, has exceeded District's costs and expenses during such year, or rate period, District shall retain such excess and reserve the same for purchases of raw water, construction, maintenance or operation of existing or additional facilities for the importation, conservation, treatment or wholesale distribution of water, reduce its scheduled price of treated water or, subject to the provisions of the Act, reduce said groundwater charges. It is understood that the object in computing rates under this contract is to cover the costs related to the importation, conservation, treatment or wholesale distribution of water.

6. Non-Contract Water - The term "non-contract water" refers to treated water found by District to be available for delivery to the treated water contractors in addition to the scheduled amounts. Non-contract water may be available only at such times and such prices as determined by the District. District will notify Contractor in writing thereof. Deliveries of non-contract water to Contractor will only be made after Contractor has purchased 100 percent of the monthly scheduled amount as set forth in Article B, Section 1(e). Further, at the end of each fiscal year an adjustment in billing will be made and Contractor will be required to have paid for 100 percent of the approved delivery scheduled amount, less any other adjustments before the purchase of non-contract water is allowed. During any period in which non-contract water is not available and Contractor takes water in excess of its scheduled amount, such water will not be reclassified and will be charged for at the full contract price. Water taken in excess of scheduled amounts during periods when non-contract water is not available may be credited as a part of Contractor's minimum annual charge.

7. Billings - Billings shall be made monthly as follows: On or about the first of each month District will send to Contractor a bill calculated in accordance with the provisions of Article C hereof for all treated water accepted by Contractor from District during the preceding month. The final bill for each fiscal year shall include any sums due for the minimum charge required by Article C, Section 4, hereof. District shall make every effort to make required meter readings on the last day of each calendar month, but District shall be entitled to make such readings three days prior to the close of any calendar month or within five days after the beginning of any calendar month.

8. Time and Method of Payment - Payments shall be made by Contractor to District within twenty (20) days after billing by District. In the event that Contractor in good faith contests the accuracy of any bill submitted to it pursuant to this contract, it shall give District notice thereof at least five (5) days prior to the day upon which payment of the stated amount is due. To the extent that District finds Contractor's contentions regarding the statement to be correct, it shall revise the statement accordingly and Contractor shall make payment of the amounts on or before the due date. To the extent that District does not find Contractor's contentions to be correct or where time is not available for a review of such contentions prior to the due date, Contractor shall pay the billed amount on or before the due date and may make the contested part of such payment under protest and seek to recover the amount in question from District.

ARTICLE D. AVAILABILITY OF WATER

1. In any year in which there may occur a water shortage by reason of drought or other temporary cause in the supply of water available for delivery to all users,

District shall, before reducing other deliveries of water, reduce, or if necessary cease, to the extent permitted by the operation of District's facilities consistent with its obligations to receive water pursuant to the State and/or Federal Contract, all deliveries of untreated water for recharge of groundwaters.

2. If, despite such reduction or cessation of such deliveries of untreated water for groundwater recharge pursuant to the provisions of the preceding Section 1, a further reduction in deliveries shall become necessary if the treated water requirements set forth on the approved delivery schedule of Contractor and Other Contractors are to be met, District shall, before reducing deliveries to Contractor and Other Contractors, reduce the total amount of agricultural water (as defined in the Act) released to others for surface delivery during such fiscal year by an amount equal to the following: namely, the average of the releases of such surface-delivered agricultural water during the preceding three fiscal years multiplied by the percentage by which District's total receipt of water from State and Federal sources for agricultural use (as such use is defined in the State and Federal Contracts) is reduced in such year pursuant to provisions of said contracts.

3. If any reduction in deliveries of treated water shall become necessary following reductions in untreated water pursuant to the provisions of the preceding Sections 1 and 2, District shall reduce deliveries of treated water to Contractor and Other Contractors in an amount which bears the same proportion to the total amount of such reduction that the amount included in such treated water user's approved delivery schedule bears to the total of the amount included in the approved delivery schedule of Contractor and Other Contractors for that fiscal year, all as determined by District; provided that District may apportion on some other basis if such is required to meet minimum demands for domestic supply, fire protection, or sanitation during the year. District agrees to notify Contractor in writing promptly in the event any such reduction in deliveries to Contractor and Other Contractors shall be decided upon and concurrently of the amount of such reduction and of any changes in Contractor's approved delivery schedule.

4. District shall not be liable for failure to deliver water to Contractor hereunder in the amounts hereinabove provided if such failure shall be caused by drought or any other reason beyond the reasonable control of District.

5. District shall give Contractor written notice as far in advance as possible of any reduction in deliveries of treated water which may be necessary because of a shortage in water supply.

ARTICLE E. GROUNDWATER CHARGE

District agrees that in establishing or modifying the boundaries of any zone pursuant to the provisions of the Act, it will not act in an unreasonable, arbitrary, capricious or discriminatory manner. District further agrees that it will use its best efforts throughout the term of this contract to collect, without deduction or offset, from all persons operating groundwater-producing facilities (as said words are defined in Section 26.1 of the Act) the groundwater charges at the rates per acre-foot of water then applicable in the zone of the District in which each such facility is located.

ARTICLE F. REMEDIES

By reason of the specialized nature of the water service to be rendered, and for the further reason that the extent of any damage caused to either party by the other by

reason of any breach of this contract may be extremely difficult to determine, it is agreed by the parties hereto that an action for damages is an inadequate remedy for any breach, and that specific performance, without precluding any other remedy available in equity or at law, will be necessary to furnish either party hereto with an adequate remedy for the breach hereof.

ARTICLE G. GENERAL PROVISIONS

1. Amendments - This Contract may be amended at any time by mutual agreement of the parties, except insofar as any proposed amendments are in any way contrary to applicable law. District agrees that in the event of legally enforceable action by a cognizant governmental body, either a) producing a prospective change in the volume of use of water by Contractor's customers, as by the imposition of an order suspending new services, or b) requiring reuse of wastewater or forbidding or limiting the discharge of wastewater into San Francisco Bay, District will make such amendments to Exhibit B of this contract as the circumstances may reasonably and equitably require.

2. Challenge of Laws - Nothing herein contained shall be construed as stopping or otherwise preventing Contractor or District from contesting by litigation or other lawful means the validity, constitutionality, construction, or application of any law of this State, any ordinance of District, or any rule, regulation or practice of District or Contractor.

3. Waiver of Rights - Any waiver at any time by either party hereto of its rights with respect to a default or any other matter arising in connection with this contract shall not be deemed to be a waiver with respect to any other default or matter. None of the covenants or agreements herein contained can be waived except by the written consent of the waiving party.

4. Notices - All notices or other writings in this contract provided to be given or made or sent, or which may be given or made or sent, by either party hereto to the other, shall be deemed to have been fully given or made or sent when made in writing and deposited in the United States mail, registered, or certified, postage prepaid, and addressed as follows:

To District:	Santa Clara Valley Water District 5750 Almaden Expressway San Jose, California 95118
To Contractor:	City of Milpitas 455 E. Calaveras Blvd. Milpitas, California 95035

The address to which any notice or other writing may be given or made or sent to either party may be changed upon written notice given by such party as above provided.

5. Separability - If any one or more of the covenants or agreements set forth in this contract on the part of District or Contractor, or either of them, to be performed should be contrary to any provision of law or contrary to the policy of law to such extent as to be unenforceable in any court of competent jurisdiction, then such covenant or covenants, agreement or agreements, shall be null and void and shall be deemed separable from the remaining covenants and agreements and shall in nowise affect the validity of this contract.

6. Paragraph Headings - Paragraph headings in this contract are for convenience only and are not to be construed as a part of this contract or in any way limiting or amplifying the provisions hereof.

7. Other Contracts - District agrees that each contract for the supply of treated water hereafter entered into by District with any Other Contractor shall contain provisions substantially similar to those herein set forth and shall not contain any provisions of a material nature more favorable to the Other Contractor than the provisions herein applicable to the Contractor.

IN WITNESS WHEREOF, District has caused this contract to be executed by the Chairman of its Board of Directors and caused its Official Seal to be hereunto affixed and Contractor has caused these presents to be executed on
19 , by its duly authorized officer.

ATTEST: SUSAN A. EKSTRAND

Clerk of the Board of Directors

SANTA CLARA VALLEY WATER DISTRICT

By
Chairman of the Board of Directors
"District"

Approved as to form:

General Counsel, Santa Clara
Valley Water District

ATTEST:

Mayor

CITY OF MILPITAS

By

Its City Manager
"Contractor"

Approved as to form:

Attorney for Contractor

Attachment B

Santa Clara Valley Water District's Comments on Draft Assessment

Santa Clara Valley
Water District

5750 ALMADEN EXPWY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 265-2600
FACIMILE (408) 266-0271
www.valleywater.org
AN EQUAL OPPORTUNITY EMPLOYER

March 14, 2006

Darryl Wong
Utility Engineer
City of Milpitas
455 East Calaveras Boulevard
Milpitas, CA 95035

Subject: Comments regarding the Murphy Ranch Residential Project Draft Water Supply Assessment dated March 2006

Dear Mr. Wong:

Santa Clara Valley Water District (District) staff received an electronic copy of the above referenced draft Water Supply Assessment (WSA) on February 28, 2006, via email. The District has reviewed the document and provides the following general and specific comments:

GENERAL COMMENTS

The District is the primary water wholesaler in Santa Clara County. The District's has a commitment to ensure that water supply is reliable to meet future demands in Santa Clara County, consistent with the County's and cities' General Plans and other appropriate regional and statewide projections. To meet this commitment, the District needs to continue to invest in maintaining existing water supply, infrastructure, and programs. In addition, the District's 2005 Urban Water Management Plan (UWMP) calls for increased water conservation, water recycling, as well as investment in new supplies to meet demand through 2030.

There are many significant assumptions in this WSA that need to be clarified. It is important for the report to discuss the assumptions and their impact on future water supply. For example, provision of water supply to meet new growth as projected in the District's 2005 Urban Water Management Plan UWMP is based upon many assumptions that are documented in the plan. There are also risks associated with demographic projections, availability of water resources, and climate change. Additionally, studies will need to be completed to look at capacity and infrastructure issues on the east side of Santa Clara Valley to address long-term reliability. Funding for many long-term water supply capital projects has not been secured. These issues should be discussed in the WSA.

Based on previous treated water distribution system modeling analysis, the District will reach system capacity under peak demand conditions on the East Side treated water system within the next 20 years. Additional capital investments will be evaluated as part of the District's infrastructure master planning and long-term water supply planning processes. To reduce overall demand for potable water supply, new developments should implement conservation to

the maximum extent practicable in accordance with District policies. Practices/technologies that should be considered include but are not limited to:

- Construction standards that require high-efficiency fixtures (for example, high-efficiency 1.2 gallons-per-flush toilets and high-efficiency washing machines);
- Construction standards that require high-efficiency devices for outdoor water uses (such as self-adjusting weather-based irrigation controllers – also known as "Smart Controllers");
- Metering or sub-metering for each individual unit;
- Enforcement of the City's Model Efficient Landscape Ordinance (as per AB 325 1990);
- Promotion and use of drought tolerant and native plantings in landscaping;
- "On-demand" water softeners (if planning to install water softeners);
- Water Efficient Model Homes.

The Murphy Ranch development should maximize the use of recycled water and consider dual plumbing for toilet flushing, where possible. These measures provide an element of drought-proofing of supplies in extreme dry weather situations, when potable supplies may be reduced.

The document makes numerous references to the 2005 Urban Water Management Plan (UWMP), but it is unclear if the particular reference is to the City of Milpitas document or the Santa Clara Valley Water District (District) 2005 UWMP. Please clarify.

Reference to the "SCVWD service area" is confusing. A different designation should be used. This is the area within the Milpitas retailer service area which is supplied with water from District wholesale water supplies.

SPECIFIC COMMENTS

Page 2, Table 1: Consider the use of recycled water for both irrigation and other uses as discussed above in the general comments section.

Page 3, Wholesale supply: change "a treated water transmission pipeline" to "treated water transmission pipelines"

Page 5, Project Demand: change "(158 Ac-Ft)" to "(158 Ac-Ft per year)".

Page 6, first paragraph after Table 7: "Some or all of the landscape irrigation may be served by recycled water. A determination will be made when preliminary site plans are available." Please elaborate on the criteria that will be used to make this determination.

Page 6, Table 9 – Projected Water Demand: Add units to this table.

Page 7, 3. SUPPLY AND DEMAND COMPARISON FOR NORMAL, SINGLE DRY AND MULTIPLE DRY YEAR'S SUPPLY, second paragraph: Append or add as a new paragraph the following information: "The net increase in demand of 169 acre-feet per year associated with the proposed development was not included in the analysis performed for the District's 2005 UWMP. This and other incremental increases in demand, when aggregated, have the potential cumulative effects to change the composition and timing of required future investments. Further

analysis, within the structure of the District's long term planning framework, is required to better define specific projects and project timing in order for the District to meet demands in the future. In addition, provision of water supply to meet new growth is based upon assumptions (listed in the District 2005 UWMP) and funding for many long-term water supply projects and infrastructure projects has not been secured."

Page 7, 3. SUPPLY AND DEMAND COMPARISON FOR NORMAL, SINGLE DRY AND MULTIPLE DRY YEAR'S SUPPLY, third paragraph: please delete the following: "The SCVWD will supplement county wide SFPUC supply shortfalls during single-dry and multiple-dry water years with additional groundwater supplies." Please refer to the assumptions in the District's 2005 UWMP. Although the District may plan to meet this shortfall, there are many factors that come into play regarding the provision of additional water to SFPUC customers. The funding necessary to address this shortfall has not been secured.

Page 8, Conclusion, first paragraph: "In addition, the SCVWD has adequate resources to offset a 20% supply reduction which may occur within the SFPUC service area under multiple-dry year conditions." This statement is incorrect Please refer to the assumptions in the District's 2005 UWMP. Although the District may plan to meet this shortfall, there are many factors that come into play regarding the provision of additional water to SFPUC customers. The funding necessary to address this shortfall has not been secured.

We appreciate the opportunity to comment on this water supply assessment and look forward to continued coordination on the development of similar long term water supply planning projects. Please contact me at 408-265-2607, extension 2877 or email me at jcrowley@valleywater.org, if you have any questions or comments regarding this letter.

Sincerely,

James S. Crowley
Engineering Unit Manager
Water Supply Sustainability Planning

JSC:jo

Appendix K

February 22, 2007

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND NOTICE OF SCOPING MEETING FOR THE MURPHY RANCH RESIDENTIAL PROJECT

NOTICE IS HEREBY GIVEN that the City of Milpitas has received an application to amend the Milpitas General Plan, a Rezoning, a Major Tentative Map, and Site and Architectural Review that would effect approximately 22 acres of land located on the west side of Murphy Ranch Road, bounded by Technology Drive to the north, the Hetch Hetchy aqueduct on the south and Coyote Creek to the west of the project site (APN: 086-01-041 and 086-01-042).

As the Lead Agency, the City of Milpitas will prepare an Environmental Impact Report (EIR) for the above-referenced Project and would like your views regarding the scope and content of the environmental information to be addressed in the EIR. This EIR may be used by your agency when considering approvals for this project. The project description, location, and probable environmental effects which will be analyzed in the EIR for the project are identified in attached materials.

Due to the time limits mandated by State law, your response must be sent **no later than 30 days after receipt of this notice.** We would appreciate an earlier response, if possible. Please identify a contact person, and send your response to:

Kristine Lowe, Associate Planner
City of Milpitas
Planning and Neighborhood Preservation Department
455 East Calaveras Boulevard.
Milpitas, CA 95035

Phone: (408) 586-3278
Fax: (408) 586-3293
Email: klowe@ci.milpitas.ca.gov

Please provide the name, mailing address, telephone number and e-mail address of a contact person with your response.

Notice of Scoping Meeting: The City of Milpitas will hold a Scoping Meeting at 6:00 p.m. on Thursday March 8, 2007 at the Committee Conference Room, First Floor, Milpitas City Hall, located at 455 East Calaveras Boulevard in Milpitas. You are invited to attend this meeting and provide your views to the City as to topics to be addressed in the EIR.

By: Kristine Lowe
Kristine Lowe

For: City of Milpitas

NOTICE OF PREPARATION

OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND NOTICE OF SCOPING MEETING FOR THE MURPHY RANCH RESIDENTIAL PROJECT

February 2007

Introduction

The purpose of an Environmental Impact Report (EIR) is to inform decision-makers and the general public of the environmental effects of a proposed project that an agency may implement or approve. The EIR process is intended to provide information sufficient to evaluate a project and its potential for significant impacts on the environment; to examine methods of reducing adverse impacts; and to consider alternatives to the project.

The EIR for the proposed project will be prepared and processed in accordance with the California Environmental Quality Act (CEQA) of 1970, as amended. The EIR will only address the significant or potentially significant effects of the proposed project. In accordance with the requirements of CEQA, the EIR will include the following:

- A summary of the project;
- A project description;
- A description of the existing environmental setting, environmental impacts, and mitigation measures for the project site;
- Alternatives to the project as proposed; and
- Environmental consequences, including (a) any significant environmental effects which cannot be avoided if the project is implemented; (b) any significant irreversible and irretrievable commitments of resources; (c) the growth inducing impacts of the proposed project; and (d) cumulative impacts.

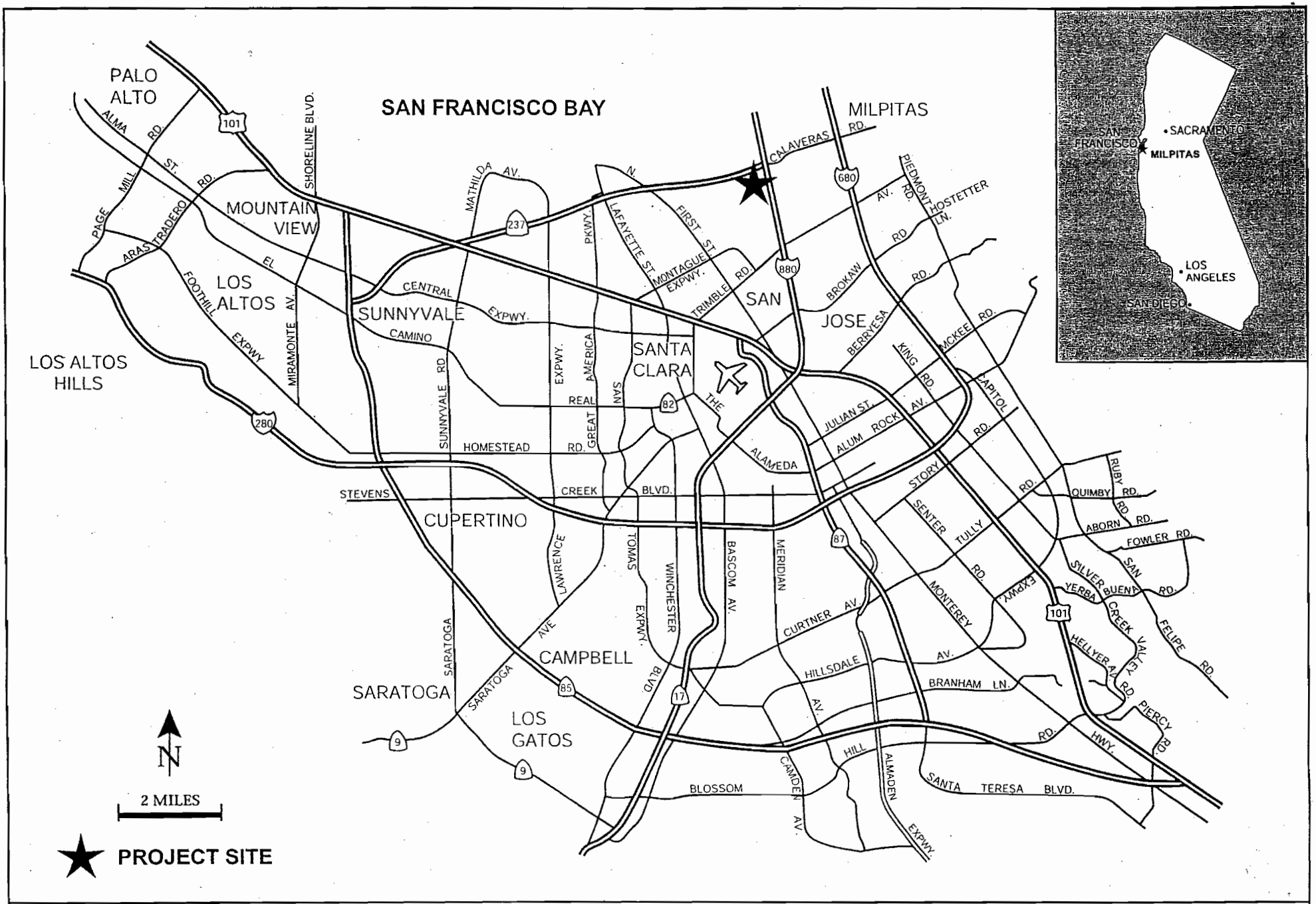
Project Location

The proposed project site is a vacant property located at the southwest corner of Technology Drive and Murphy Ranch Road in the City of Milpitas (See Figures 1 through 4). The project site is bounded by Coyote Creek and a 10-foot tall earthen levy to the west, Technology Drive and the City of Milpitas Pump Station to the north, Murphy Ranch Road to the east, and the Hetch-Hetchy right-of-way and the San Francisco Pump Station to the south.

Project Description

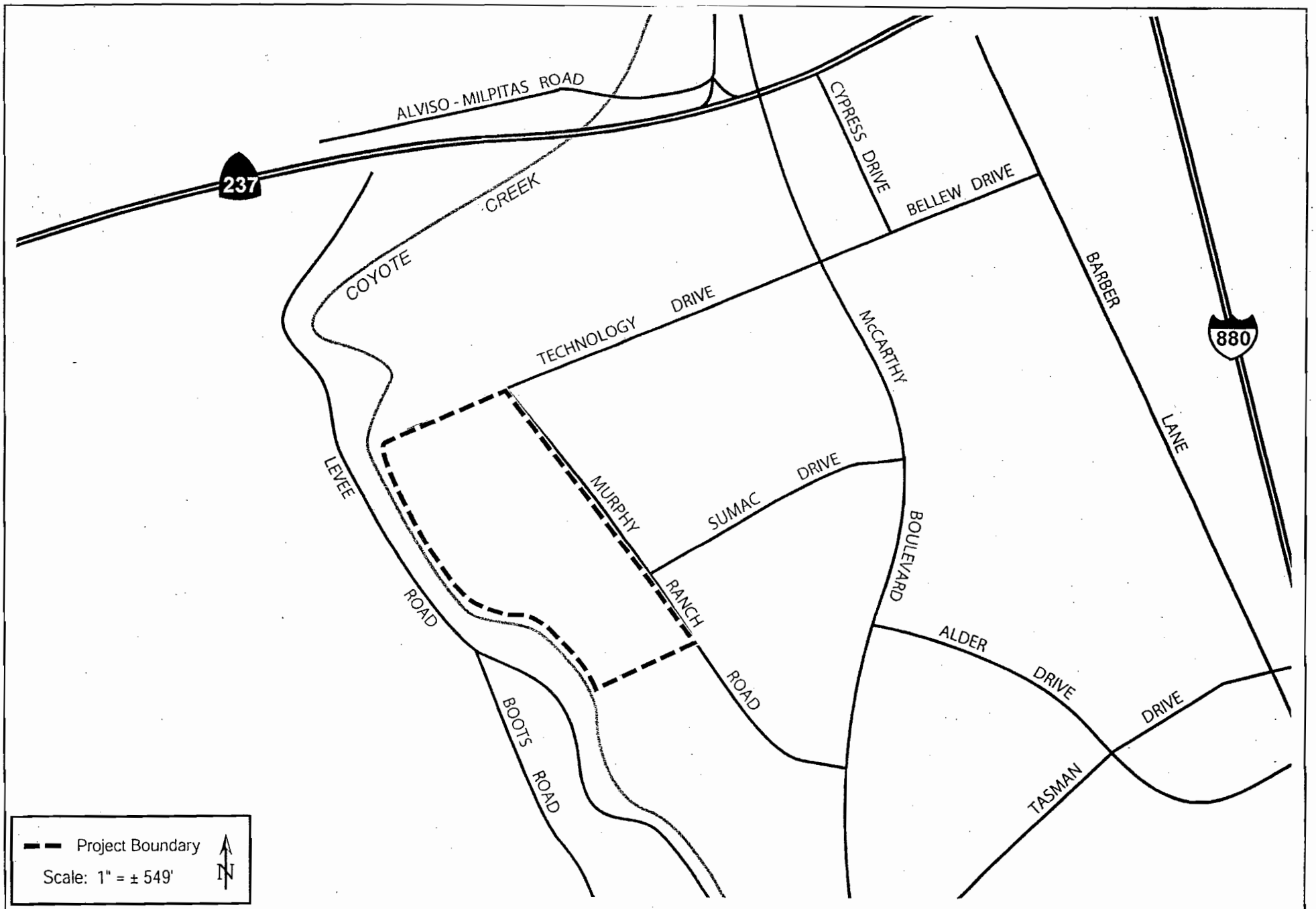
The project will consist of two separate developments, herein after referred to as Murphy Ranch South and Murphy Ranch North. The Murphy Ranch South development will be on the southern portion of the project site and will consist of 285 for-sale single-family attached dwelling units (townhouses) with attached two car garages on 14.15 acres. The Murphy Ranch North development will be on the northern portion of the project site and will consist of 374 rental apartment units on 7.58 acres. The apartment buildings will be four stories with a five-story parking garage in the interior of the site.

The project site is currently designated *Industrial Park* by the General Plan and is zoned *MP-Industrial Park*. The project proposes a General Plan amendment to *Multi Family High Density*



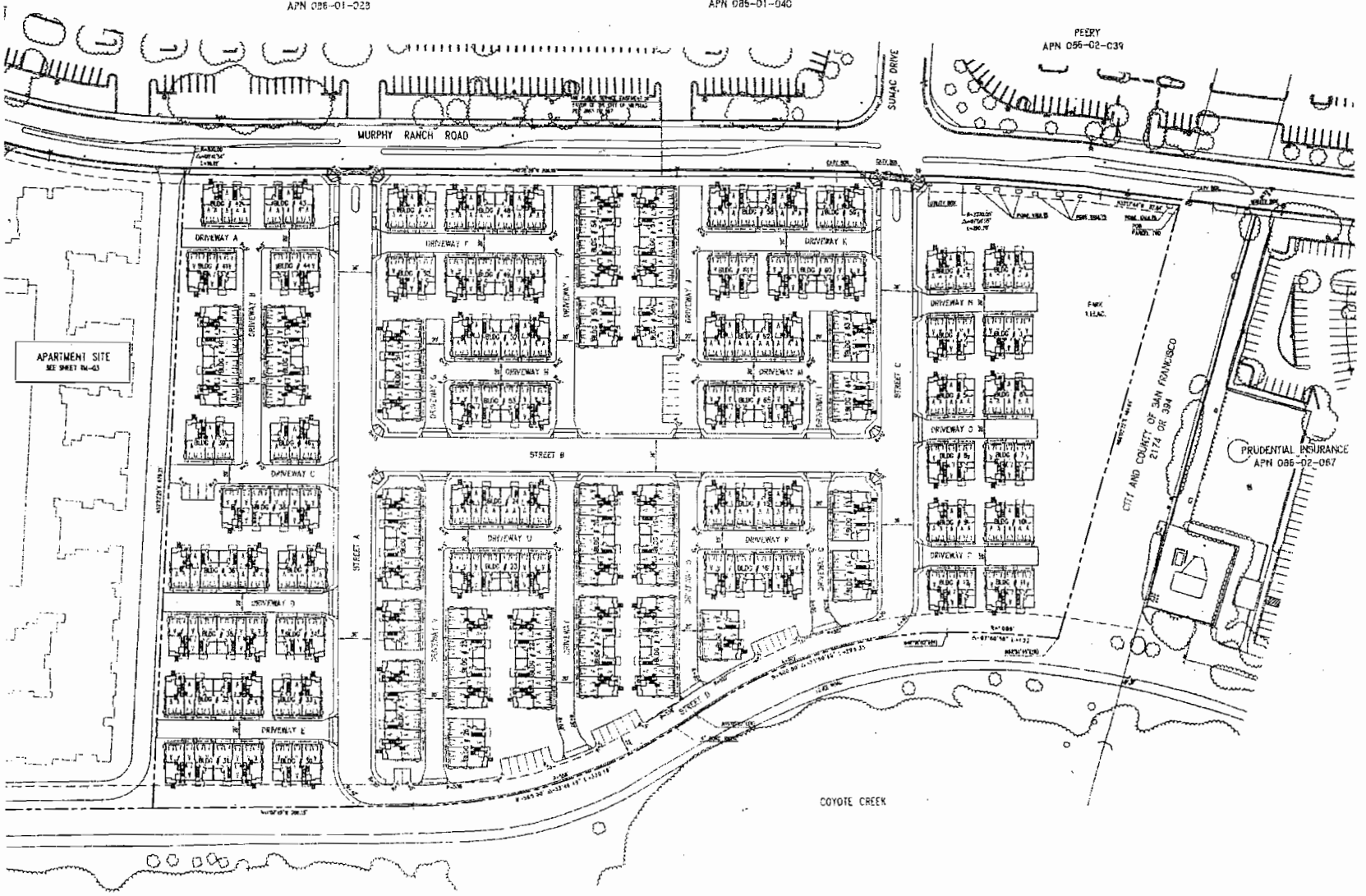
REGIONAL MAP

FIGURE 1



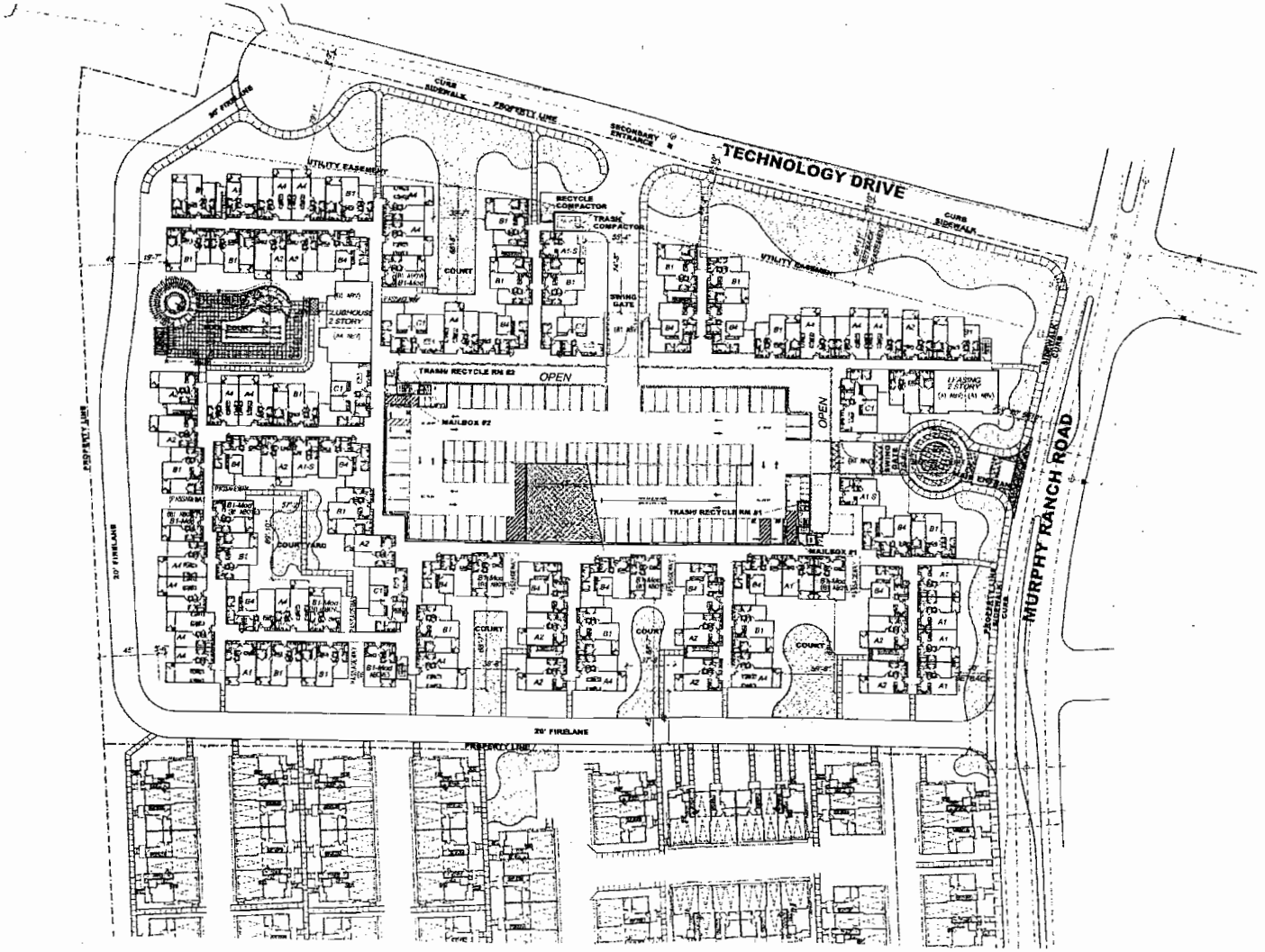
VICINITY MAP

FIGURE 2



SITE PLAN

FIGURE 3



SITE PLAN

FIGURE 4

YYY

for the entire project site. The project also proposes a zoning change to *R3 – Multi-Family High Density* for the townhouse portion of the site (Murphy Ranch South) and *R4 – Multi-Family Very High Density* for the apartment portion of the site (Murphy Ranch North).

Potential Environmental Impacts of the Project

The EIR will identify the significant environmental effects anticipated to result from development of the project as proposed. The EIR will include the following specific environmental categories as related to the proposed project:

1. Land Use

The project site is located in a developed urbanized area surrounded by industrial land uses. The EIR will describe the existing land uses adjacent to and within the project area. Land use impacts which would occur as a result of the proposed project will be analyzed, including the compatibility of the proposed and existing land uses in the project area, shade and shadow, loss of agricultural land within an urbanized industrial area, and population and housing. Mitigation measures will be identified for significant impacts, as warranted.

2. Visual Resources

The project site is surrounded by one- and two-story industrial buildings and Coyote Creek. The EIR will describe the existing visual setting of the project area and the visual changes that are anticipated to occur as a result of the proposed project. The EIR will also discuss possible light and glare issues from the development of new residential structures. Mitigation measures will be identified for significant impacts, as warranted.

3. Geology

The project site is located in Seismic Zone 4, which is the most seismically active region in the United States. The EIR will discuss the possible geological impacts associated with seismic activity and the existing soil conditions on the project site. Mitigation measures will be identified for significant impacts, as warranted.

4. Hydrology

The project site is located adjacent to Coyote Creek. The EIR will address the possible flooding issues from Coyote Creek as well as the effectiveness of the storm drainage system and the projects effects on storm water quality. Mitigation measures will be identified for significant impacts, as warranted.

5. Biological Resources

The project site is currently undeveloped with no vegetation and could possibly be utilized as Burrowing Owl habitat. The EIR will provide a discussion of the absence/presence of Burrowing Owls on the project site and the likelihood of owls occupying the site. Mitigation measures will be identified for significant impacts, as warranted.

6. Hazards and Hazardous Materials

The project site is located in an area surrounded by industrial businesses. The EIR will summarize known hazardous materials conditions on and adjacent to the project site, and will address the potential for future residential development on this site to result in a hazardous materials impact, including a Risk Assessment of Hazardous Materials Users in the Project Area. Mitigation measures will be identified for significant impacts, as warranted.

7. Cultural Resources

The project site is located in an area of high archaeological and historical sensitivity due to its location adjacent to a creek. The EIR will address the known presence of historic and archaeological sites in the project area and the potential for unknown resources to be found during construction. Mitigation measures will be identified for potential significant impacts, as warranted.

8. Transportation and Circulation

The EIR will examine the existing traffic conditions in the immediate vicinity of the project site. A transportation impact analysis will be prepared for the proposed project in order to identify the transportation impacts of the proposed project on the existing local and regional transportation system and the planned long-range transportation network. Mitigation measures will be identified for significant impacts, as warranted.

9. Air Quality

The San Francisco Bay Area is a non-attainment area for carbon monoxide. The EIR will address the regional air quality conditions in the Bay Area and discuss the proposed projects impacts to local and regional air quality. The project site is adjacent to two diesel powered pump stations. The effects of the diesel exhaust on a future residential development will be addressed. Temporary construction related impacts such as construction vehicle exhaust and air-borne particulates (i.e., dust) will also be discussed. Mitigation measures will be identified for significant impacts, as warranted.

10. Noise

The existing noise environment on-site is created primarily by local traffic, aircraft and intermittent noise generated by the adjacent pump stations north and south of the project site. The EIR will discuss the potential of the proposed project to be impacted by the existing noise levels on the project site. The EIR will also discuss the increase in traffic noise that would result from implementation of the proposed project, and temporary construction noise. Noise levels will be evaluated for consistency with applicable standards and guidelines in the City of Milpitas. Mitigation measures will be identified for significant impacts, as warranted.

11. Utilities

Implementation of the proposed project will result in an increased demand on utilities and public facilities compared to existing conditions. The EIR will examine the impacts of the project on public services, including utilities such as sanitary and storm drains, water supply, and solid waste management. Mitigation measures will be identified for significant impacts, as warranted.

12. Public Services

Implementation of the proposed project will result in an increased demand on public services such as police and fire protection, as well as schools, parks, and libraries. The EIR will address the availability of public facilities and service systems, and the potential for the project to require the construction of new facilities. Mitigation measures will be identified for significant impacts, as warranted.

13. Alternatives

The EIR will examine alternatives to the proposed project including a "No Project" alternative and at least two alternative development scenarios. Alternatives discussed will be chosen based on their ability to reduce or avoid identified significant impacts of the proposed project while achieving most of the identified objectives of the project.

14. Significant Unavoidable Impacts

The EIR will identify those significant impacts that cannot be avoided, if the project is implemented as proposed.

15. Cumulative Impacts

The EIR will include a Cumulative Impacts section which will address the potentially significant cumulative impacts of the project when considered with other past, present, and reasonably foreseeable future projects in the area.

Arnold Schwarzenegger
Governor

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Cynthia Bryant
Director

Notice of Preparation

February 23, 2007

To: Reviewing Agencies

Re: The Murphy Ranch Residential Ranch
SCH# 2007022106

Attached for your review and comment is the Notice of Preparation (NOP) for the The Murphy Ranch Residential Ranch draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Kristine Lowe
City of Milpitas
455 E. Calaveras Boulevard
Milpitas, CA 95035

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Senior Planner, State Clearinghouse

Attachments
cc: Lead Agency

State Clearinghouse Data Base

SCH#	**2007022106**
Project Title	The Murphy Ranch Residential Ranch
Lead Agency	Milpitas, City of

Type	**NOP** Notice of Preparation
Description	The project will consists of two separate developments, herein after referred to as Murphy Ranch South and Murphy Ranch North. The Murphy Ranch South development will be on the southern portion of the project site and will consist of 285 for-sale single-family attached dwelling units (townhouses) with attached two car garages on 14.15 acres. The Murphy Ranch North development will be on the northern portion of the project site and will consist of 374 rental apartment units on 7.58 acres. The apartment buildings will be four stories with a five-story parking garage in the interior of the site.

Lead Agency Contact

Name	Kristine Lowe		
Agency	City of Milpitas		
Phone	408 586-3278	***Fax***	
email	klowe@ci.milpitas.ca.gov		
Address	455 E. Calaveras Boulevard		
City	Milpitas	***State*** CA	***Zip*** 95035

Project Location

County	Santa Clara			
City	Milpitas			
Region				
Cross Streets	Technology Drive and Murphy Ranch Road			
Parcel No.				
Township		***Range***	***Section***	***Base***

Proximity to:

Highways	
Airports	
Railways	
Waterways	Coyote Creek
Schools	
Land Use	

Project Issues	Landuse; Aesthetic/Visual; Geologic/Seismic; Water Quality; Biological Resources; Toxic/Hazardous; Archaeologic-Historic; Traffic/Circulation; Air Quality; Noise; Public Services; Other Issues; Cumulative Effects
Reviewing Agencies	Resources Agency; Department of Boating and Waterways; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Department of Fish and Game, Region 3; Native American Heritage Commission; Caltrans, District 4; Integrated Waste Management Board; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 2

Date Received 02/23/2007 ***Start of Review*** 02/23/2007 ***End of Review*** 03/26/2007

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: SANTA CLARA

SCH# 2007022106

Resources Agency

- [x] Resources Agency
  Nadell Gayou
- [x] Dept. of Boating & Waterways
  David Johnson
- [ ] California Coastal Commission
  Elizabeth A. Fuchs
- [ ] Colorado River Board
  Gerald R. Zimmerman
- [x] Dept. of Conservation
  Roseanne Taylor
- [ ] California Energy Commission
  Paul Richins
- [ ] Dept. of Forestry & Fire Protection
  Allen Robertson
- [x] Office of Historic Preservation
  Wayne Donaldson
- [x] Dept of Parks & Recreation
  Environmental Stewardship Section
- [ ] Reclamation Board
  DeeDee Jones
- [x] S.F. Bay Conservation & Dev't. Comm.
  Steve McAdam
- [x] Dept. of Water Resources
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] Depart. of Fish & Game
  Scott Flint
  Environmental Services Division
- [ ] Fish & Game Region 1
  Donald Koch
- [ ] Fish & Game Region 1E
  Laurie Harnsberger
- [ ] Fish & Game Region 2
  Banky Curtis
- [x] Fish & Game Region 3
  Robert Floerke
- [ ] Fish & Game Region 4
  Julie Vance
- [ ] Fish & Game Region 5
  Don Chadwick
  Habitat Conservation Program
- [ ] Fish & Game Region 6
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] Fish & Game Region 6 I/M
  Gabrina Getchel
  Inyo/Mono, Habitat Conservation Program
- [ ] Dept. of Fish & Game M
  George Isaac
  Marine Region

Other Departments

- [ ] Food & Agriculture
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] Depart. of General Services
  Public School Construction
- [ ] Dept. of General Services
  Robert Sleppy
  Environmental Services Section
- [ ] Dept. of Health Services
  Veronica Malloy
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] Delta Protection Commission
  Debby Eddy
- [ ] Office of Emergency Services
  Dennis Castrillo
- [ ] Governor's Office of Planning & Research
  State Clearinghouse
- [x] Native American Heritage Comm.
  Debbie Treadway
- [ ] Public Utilities Commission
  Ken Lewis
- [ ] Santa Monica Bay Restoration
  Guangyu Wang
- [ ] State Lands Commission
  Jean Sarino
- [ ] Tahoe Regional Planning Agency (TRPA)
  Cherry Jacques

Business, Trans & Housing

- [ ] Caltrans - Division of Aeronautics
  Sandy Hesnard
- [ ] Caltrans - Planning
  Terri Pencovic
- [ ] California Highway Patrol
  Shirley Kelly
  Office of Special Projects
- [ ] Housing & Community Development
  Lisa Nichols
  Housing Policy Division

Dept. of Transportation

- [ ] Caltrans, District 1
  Rex Jackman
- [ ] Caltrans, District 2
  Marcelino Gonzalez
- [ ] Caltrans, District 3
  Jeff Pulverman
- [x] Caltrans, District 4
  Tim Sable
- [ ] Caltrans, District 5
  David Murray
- [ ] Caltrans, District 6
  Marc Bimbaum
- [ ] Caltrans, District 7
  Cheryl J. Powell
- [ ] Caltrans, District 8
  Dan Kopulsky
- [ ] Caltrans, District 9
  Gayle Rosander
- [ ] Caltrans, District 10
  Tom Dumas
- [ ] Caltrans, District 11
  Mario Orso
- [ ] Caltrans, District 12
  Bob Joseph

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
  - [ ] Transportation Projects
    Ravi Ramalingam
  - [ ] Industrial Projects
    Mike Tollstrup
- [x] California Integrated Waste Management Board
  Sue O'Leary
- [ ] State Water Resources Control Board
  Regional Programs Unit
  Division of Financial Assistance
- [ ] State Water Resources Control Board
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] State Water Resouces Control Board
  Steven Herrera
  Division of Water Rights
- [x] Dept. of Toxic Substances Control
  CEQA Tracking Center
- [ ] Department of Pesticide Regulation

Regional Water Quality Control Board (RWQCB)

- [ ] RWQCB 1
  Cathleen Hudson
  North Coast Region (1)
- [x] RWQCB 2
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] RWQCB 3
  Central Coast Region (3)
- [ ] RWQCB 4
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] RWQCB 5S
  Central Valley Region (5)
  - [ ] RWQCB 5F
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] RWQCB 5R
    Central Valley Region (5)
    Redding Branch Office
- [ ] RWQCB 6
  Lahontan Region (6)
  - [ ] RWQCB 6V
    Lahontan Region (6)
    Victorville Branch Office
- [ ] RWQCB 7
  Colorado River Basin Region (7)
- [ ] RWQCB 8
  Santa Ana Region (8)
- [ ] RWQCB 9
  San Diego Region (9)

- [ ] Other _____

Last Updated on 01/11/07

Kristine Lowe

From: Bill Yeung [Bill.Yeung@rda.sccgov.org]
Sent: Thursday, March 01, 2007 4:40 PM
To: Kristine Lowe
Cc: Masoud Akbarzadeh; Bill Lee
Subject: Notice of Preparation of DEIR - Murphy Ranch Residential Project

Kristine:

The review of the Notice of Preparation of DEIR for the subject project is complete. Our comment is as follows:

- include traffic impact to Montague Expressway in the DEIR and submit to our department for review

If you have any questions, please contact me. Thanks

William K. Yeung, PE
Associate Civil Engineer
Land Development and Permits
Roads and Airports Department
County of Santa Clara
Phone (408)573-2463
Fax (408)441-0276

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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION, AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, GOVERNOR

DEPARTMENT OF TRANSPORTATION
P. O. BOX 23660
OAKLAND, CA 94623-0660
(510) 286-5505
(800) 735-2929 TTY

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March 7, 2007

SCL-237-8.92
SCL237158

Ms. Kristine Lowe
City of Milpitas
455 E. Calaveras Boulevard
Milpitas, CA 95035-5411

Dear Ms. Lowe:

The Murphy Ranch Residential Project – Notice of Preparation (NOP)

Thank you for including the California Department of Transportation (Department) in the environmental review process for the proposed project. We have reviewed the NOP and have the following comments to offer:

Our primary concern with the project is the potentially significant impact it may have to traffic volume and congestion on State Highway Facilities. In order to address our concerns regarding the proposed development, we recommend a traffic impact analysis be prepared. The traffic impact analysis should include, but not be limited to the following:

1. Information on the project's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed.

2. Current Average Daily Traffic (ADT), AM, and PM peak hour volumes on all significantly affected streets, highway segments, intersections and ramps.

3. Schematic illustration of the traffic conditions for: 1) existing, 2) existing plus general plan, and 3) cumulative for the intersections in the general plan area.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State Highway facilities being evaluated.

5. Mitigation measures should consider highway and non-highway improvements and services. Special attention should be given to the development of alternate solutions to circulation problems that do not rely on increased highway construction.

6. All mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

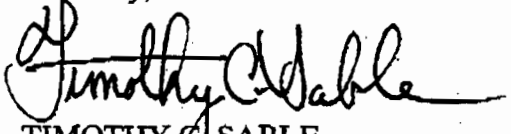
We recommend you utilize Caltrans' *"Guide for the Preparation of Traffic Impact Studies"* which can be accessed from the following webpage: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

We look forward to reviewing the Draft Environmental Impact Report. We do expect to receive a copy from the State Clearinghouse, but in order to expedite our review, in advance please send two copies to:

José L. Olveda
Office of Transit and Community Planning
Department of Transportation, District 4
P.O. Box 23660
Oakland, CA 94623-0660

Should you require further information or have any questions regarding this letter, please call José L. Olveda of my staff at (510) 286-5535.

Sincerely,



TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c: Scott Morgan (State Clearinghouse)

California R ional Water Quality C ntrol Board

San Francisco Bay Region

Linda S. Adams
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov
1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510) 622-2300 . FAX (510) 622-2460

Arnold Schwarzenegger
Governor

Date; MAR 1 5 2007
File No. 2188.05 (BKW)

Ms. Kristine Lowe, Associate Planner
City of Milpitas
Planning and Neighborhood Preservation Department
455 East Calaveras Boulevard
Milpitas, CA 95035

Re: Notice of Preparation of a Draft Environmental Impact Report for the Murphy Ranch Residential Project
SCH # 2007022106

Dear Ms. Lowe:

Regional Water Quality Control Board (Water Board) staff have reviewed the *Notice of Preparation of a Draft Environmental Impact Report for the Murphy Ranch Residential Project* (NOP). Water Board staff have the following comment on the NOP.

Comment 1

The Draft Environmental Impact Report (DEIR) should discuss the methods that the project will use to comply with treatment requirements for post-construction stormwater runoff. Milpitas is a member of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), which has been issued a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of stormwater. Provision C.3 of SCVURPPP's NDPES permit (NDPES Permit No. CAS0299718; Regional Board Order No. 01-024, as amended by Order Nos. 01-119 and 2005-0035) provides performance standards for the management of stormwater at new development and redevelopment sites that create, or recreate, 10,000 square feet or more of impervious surfaces. The DEIR should include a discussion of the proposed post-construction stormwater best management practices (BMPs) that the project will use to minimize impacts on hydrology and water quality through compliance with Provision C.3 of the NPDES permit.

Effective BMPs for post-construction stormwater management are especially important at the Murphy Ranch site, since the site drains to Coyote Creek, which has been designated as critical habitat for the endangered Central Coast California steelhead population. Potential impacts of contaminants in stormwater runoff from the project site on endangered Central Coast California steelhead should also be evaluated in the discussion of biological resources in the DEIR.

If you have any questions, please contact me at (510) 622-5680 or e-mail bwines@waterboards.ca.gov.

Sincerely,

Brian Wines

Brian Wines
Water Resources Control Engineer

cc: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044
Santa Clara Valley Water Control District, Attn: Sue Tippets, Community Projects Review Unit 5750 Almaden Expressway, San Jose, Ca 95118-3686
CDFG, Central Coast Region, Attn: Robert Floerke, Regional Manager, P.O. Box 47, Yountville CA 94599
National Marine Fisheries Service, Attn: Gary Stern, 777 Sonoma Avenue, Suite 325, Santa Rosa, CA 95404
USACE, San Francisco District, Attn: Regulatory Branch, 333 Market Street, San Francisco, CA 94105 –2197
Guadalupe-Coyote Resource Conservation District, 888 North 1st Street, Rm. 204, San Jose, CA 95112

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Jack P. Broadbent
EXECUTIVE OFFICER/APCO

March 21, 2007

Ms. Kristine Lowe, Associate Planner
City of Milpitas
Planning and Neighborhood Preservation Department
455 East Calaveras Boulevard
Milpitas, CA 95035

Subject: Murphy Ranch Residential Project Notice of Preparation

Dear Ms. Lowe:

Bay Area Air Quality Management District (District) staff have reviewed your agency's Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Murphy Ranch Residential Project (Project). We understand that the Project consists of two separate housing developments, Murphy Ranch South and Murphy Ranch North. Murphy Ranch South includes 285 single family attached dwelling units (townhouses) on 14.15 acres. Murphy Ranch North includes 374 rental apartment units with a parking garage on 7.58 acres. The Project is located at the southwest corner of Technology Drive and Murphy Ranch Road in the City of Milpitas (City).

We agree that the DEIR should analyze the Project's potential impacts on air quality. A discussion of the health effects of air pollution should be provided. Air quality standards are set at levels to protect public health and welfare. The DEIR should provide background information regarding the District's attainment status for all criteria pollutants and the implications for the region if these standards are not attained by statutory deadlines. The Bay Area is currently a nonattainment area for national and State ambient air quality standards for ground level ozone and State standards for particulate matter. Please note that the Bay Area was redesignated as an attainment area for the national carbon monoxide (CO) standard in 1998 and has since maintained that status. The Bay Area has had no exceedances of the state or national CO standard at any of the monitoring stations since 1991. The NOP's statement that the Bay Area "is a non-attainment area for carbon monoxide" should be corrected.

The DEIR should provide a detailed analysis of the Project's potential effects on local and regional air quality from construction, operations and cumulative emissions. The DEIR should also estimate daily emissions in pounds per day and annual emissions in tons per year for volatile organic compounds (VOCs), nitrogen oxides (NOx), and particulate matter (PM) from stationary, area and mobile sources resulting from long-term operation of the Project. These emissions estimates should then be compared to the significance criteria in the *BAAQMD CEQA Guidelines*.

The Project area is located in close proximity to the junction of Interstate 880 and Highway 237 in an area that also contains segments of Highway 101 and Interstate 680. Furthermore, the Project is located in an industrial zone and is immediately adjacent to two diesel powered pumping stations. We recommend that a Health Risk Assessment (HRA) be conducted to evaluate potential health impacts to future residents of the Project due to emissions from major regional transportation corridors and adjacent industrial activities in the Project area. The HRA should also consider any potential impacts from emissions associated with increased commercial and residential traffic along major roads in and around the development. We recommend that the potential health impacts of the Project be evaluated and disclosed to the public as recommended in the California Air Resources Board's (CARB) *Air Quality and Land Use Handbook: A Community Health Perspective*. CARB's handbook provides guidelines for siting new sensitive land uses near freeways, major roads, and various industrial land uses.

The DEIR should also evaluate potential nuisance impacts, such as odors and dust, that could result from construction and operation. Odors may not necessarily cause direct physical harm, but can still be unpleasant and lead to citizen complaints. Various industrial and commercial facilities can produce odors and dust impacts on nearby residential areas and other sensitive receptors, as well as new sensitive receptors that may be introduced through this Project.

We appreciate that the Project adds much needed housing to an employment-rich part of the Bay Area, which would reduce the number and distance of work-related vehicle trips. Motor vehicles constitute the largest source of air pollution in the Bay Area; therefore we have a strong interest in promoting smart growth development of this sort. In order to make any smart growth project viable and to reduce reliance on the automobile, we also have a strong interest in promoting alternative sources of transportation. It is important that the Project utilize a design and provide improvements that allow residents of the Project to walk, bike, and take transit, thereby reducing vehicle trips and vehicle miles traveled (VMT) and improving local and regional air quality. We recommend that the DEIR include a survey of existing Santa Clara Valley Transportation Authority (VTA) systems and linkages to the Project area and that the City work with VTA on ways to improve transit linkages to the site. We recommend that the DEIR evaluate and recommend all feasible mitigation measures that can reduce project emissions and justify those it will not be adopting. We suggest that the City require incorporation of all feasible transportation control measures (TCM) in the Project area, such as providing shuttle service to nearby BART, Caltrain stations, Santa Clara Valley Light Rail stations and other regional transit nodes, providing transit information and shelters, subsidized transit passes, or sponsoring programs to encourage residents to carpool or take transit. Additionally, the project site should be linked with the citywide bicycle route network.

Parking is a prominent feature of the Project design, with two car garages attached to each of the 285 single family dwelling units and a six story parking garage proposed for the 374 rental units. We recommend that the DEIR evaluate the Project's design with respect to onsite parking. Pricing strategies for both on-street and off-street parking, based on the market-demand for those spaces, can encourage the use of carpooling, walking, bicycling and transit. Such strategies may include unbundling the parking for residential uses (i.e. charge for off-street parking separately from rents).

Construction activities generate fugitive dust emissions and emissions of criteria pollutants and toxic air contaminants (TAC) from construction equipment and vehicles, demolition, and earthmoving. We encourage the City to implement all feasible measures that reduce emissions associated with construction activity. For informational purposes, we recommend that the DEIR also include a quantitative analysis of the criteria pollutant emissions that would be generated from construction equipment exhaust during project construction. Additionally, CARB has identified diesel particulate matter as a TAC. Mitigation measures could include but are not limited to: maintaining properly tuned engines; minimizing the idling time of diesel powered construction equipment to three minutes; using alternative powered construction equipment (i.e., CNG, biodiesel, water emulsion fuel, electric); using add-on control devices such as diesel oxidation catalysts or particulate filters; using diesel construction equipment that meets the CARB 2000 or newer certification standard for off-road heavy-duty diesel engines; phasing the construction of projects; and limiting the hours of operation of heavy duty equipment.

The Project proposes a general plan amendment from Industrial Park to Multi Family High Density, and a zoning change from MP Industrial Park to R3 – Multi-Family High Density for the townhouse portion of the site (Murphy Ranch South) and R4 – Multi-Family Very High Density for the apartment portion of the site (Murphy Ranch North). The DEIR should include an analysis of whether these proposed general plan changes and zoning amendments result in significant impacts to air quality in the region, as determined by the proposed Project's consistency with the general plan and whether or not the general plan is consistent with the most recently adopted Bay Area plan for the State ozone standard, the *Bay Area 2005 Ozone Strategy*.

Increasing the demand for electricity, natural gas, and gasoline may result in an increase of criteria air pollutant emissions from combustion, as well as an increase in greenhouse gas emissions, which can impact regional air quality. The DEIR should evaluate the Project's potential to increase the demand for energy in the City. We recommend that the DEIR discuss energy demand of the Project at build-out. When identifying strategies to minimize the Project's impact on energy and air quality, the District encourages the City to include feasible mitigation measures that would require the development to incorporate a minimum level of green building measures. This minimum level could be based on the Leadership in Energy and Environmental Design (LEED) standards or by setting a target percentage reduction below California Building Code's Title 24 energy standards. Green building measures could include but are not limited to using: super-efficient heating, ventilation, and air conditioning (HVAC) systems; light-colored and reflective roofing materials, pavement treatments and other energy efficient building materials; shade trees adjacent to buildings and in parking areas; photovoltaic panels on buildings; and natural light and energy-efficient lighting.

Finally, please include in the DEIR a discussion and quantification (including underlying assumptions and calculations) of greenhouse gas (GHG) emissions, including carbon dioxide, methane, nitrous oxide and sulfur hexafluoride that would be emitted due to the Project in order to disclose to decision makers and the public the level of greenhouse gas emissions that will be generated by the Project.

For more details on our guidance regarding environmental review, we recommend that the City refer to the *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans (1999)*. The document provides guidance on best practices for assessing and

mitigating air quality impacts from land use projects. If you do not already have a copy of our guidelines, we recommend that you obtain a copy by calling our Public Information Division at (415) 749-4900 or downloading the online version from the District's web site at http://www.baaqmd.gov/pln/ceqa/index.asp.

If you have any questions regarding these comments, please contact Nadine Wilmot, Environmental Planner, at (415) 749-5074.

Sincerely,

Jean Roggenkamp
Deputy Air Pollution Control Officer

JR:NW

cc: BAAQMD Director Erin Garner
BAAQMD Director Yoriko Kishimoto
BAAQMD Director Liz Kniss
BAAQMD Director Patrick Kwok

SANTA CLARA
Valley Transportation Authority

March 21, 2007

City of Milpitas
Planning Division
455 East Calaveras Boulevard
Milpitas, CA 95035-5479

Attention: Kristine Lowe

Subject: Murphy Ranch Residential

Dear Ms. Lowe:

Santa Clara Valley Transportation Authority (VTA) staff have reviewed the NOP for a Draft EIR for 285 single family residences on 14.15 acres and 374 apartment units on 7.58 acres at the southwest corner of Murphy Ranch Road and Technology Drive. We have the following comments.

Bus Service

There is an existing ACE shuttle bus stop on Murphy Road, south of Technology Drive, adjacent to the project site. In order to provide convenient access to transit service, VTA requests the following bus stop improvements:

- Bus stop to remain in general area.
- Sidewalk access to the bus stop
- A 8' x 40' passenger waiting pad
- No trees or landscaping within bus loading area.

Thank you for the opportunity to review this project. If you have any questions, please call me at (408) 321-5784.

Sincerely,

Roy Molseed
Senior Environmental Planner

RM:TN:kh

cc: Samantha Swan, VTA

ML0701