

---

# FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT FOR THE SAN MARCO SUBDIVISION

---

City of Pittsburg Subdivision #7362  
SCH #91073029

Prepared for the City of Pittsburg

by  
WAGSTAFF AND ASSOCIATES  
Urban and Environmental Planners

in association with

Crane Transportation Group, Transportation Engineers  
Herzog Associates, Geoscientists  
Questa Engineering, Inc., Hydrologists and Civil Engineers  
Charles Patterson, Consulting Biologist  
Illingworth and Rodkin, Acoustical Consultants  
Donald Ballanti, Consulting Meteorologist  
Holman Associates, Archaeologist

October 1992

---

## CONTENTS

---

|                                                                            | <u>Page</u> |
|----------------------------------------------------------------------------|-------------|
| r     PREFACE .....                                                        | ix          |
| I.     INTRODUCTION                                                        |             |
| A.    EIR Purpose and Intent .....                                         | 3           |
| B.    EIR Approach .....                                                   | 4           |
| C.    EIR Scope--Significant Issues and Concerns .....                     | 5           |
| D.    Significance of Impacts .....                                        | 7           |
| E.    Report Organization and Content .....                                | 7           |
| II.    SUMMARY                                                             |             |
| A.    Proposed Project .....                                               | 11          |
| B.    Environmental Issues .....                                           | 12          |
| C.    Summary of Significant Impacts and Mitigations .....                 | 13          |
| D.    Summary of Project Relationships to Adopted Plans and Policies ..... | 13          |
| E.    Summary of Alternatives .....                                        | 48          |
| III.   PROJECT DESCRIPTION                                                 |             |
| A.    Existing Setting .....                                               | 51          |
| B.    Basic Project Objectives .....                                       | 58          |
| C.    Proposed Physical Characteristics .....                              | 58          |
| D.    Required Jurisdictional Approvals .....                              | 77          |
| E.    Intended Uses of the EIR .....                                       | 77          |
| IV.    SETTING, IMPACTS, AND MITIGATIONS                                   |             |
| A.    Land Use .....                                                       | 81          |
| B.    Population and Housing .....                                         | 111         |
| C.    Transportation .....                                                 | 121         |
| D.    Soils and Geology .....                                              | 181         |
| E.    Drainage and Water Quality .....                                     | 209         |
| F.    Visual Factors .....                                                 | 221         |
| G.    Vegetation and Wildlife .....                                        | 247         |
| H.    Municipal Services .....                                             | 259         |
| I.    Noise .....                                                          | 275         |
| J.    Air Quality .....                                                    | 287         |
| K.    Cultural Resources .....                                             | 301         |
| L.    Public Health and Safety .....                                       | 309         |

|                                                                    | <u>Page</u> |
|--------------------------------------------------------------------|-------------|
| V. PROJECT CONSISTENCY WITH ADOPTED LOCAL AND REGIONAL PLANS ..... | 321         |
| A. Pittsburg General Plan .....                                    | 321         |
| B. Pertinent Regional Plans .....                                  | 343         |
| VI. ALTERNATIVES TO THE PROPOSED PROJECT .....                     | 349         |
| A. No Project .....                                                | 349         |
| B. Alternative Residential Type Breakdown and Layout .....         | 353         |
| C. Mitigated Residential Scheme .....                              | 358         |
| D. Reduced Intensity Alternative .....                             | 361         |
| E. Conclusion .....                                                | 363         |
| VII. CEQA-REQUIRED ASSESSMENT CONCLUSIONS .....                    | 367         |
| A. Growth-Inducing Effects .....                                   | 367         |
| B. Unavoidable and Irreversible Adverse Effects .....              | 368         |
| C. Short-Term Versus Long-Term Environmental Productivity .....    | 369         |
| D. Effects Found Not to Be Significant .....                       | 369         |
| VIII. MITIGATION MONITORING PLAN .....                             | 373         |
| A. Background .....                                                | 373         |
| B. Monitoring Checklist .....                                      | 373         |
| IX. ORGANIZATIONS AND PERSONS CONTACTED .....                      | 379         |
| r X. RESPONSES TO COMMENTS ON THE DRAFT EIR .....                  | 383         |
| r      A. Index to Comments .....                                  | 383         |
| r      B. Written Comments and Responses .....                     | 387         |
| r XI. APPENDICES .....                                             | 439         |
| A. NOP/Initial Study                                               |             |
| B. Housing Affordability Worksheet                                 |             |
| C. Supplemental Transportation Information                         |             |
| D. Supplemental Vegetation and Wildlife Information                |             |
| E. Supplemental Air Quality Information                            |             |
| F. Supplemental Archaeological Information                         |             |
| G. Supplemental Public Health and Safety Information               |             |
| H. CEQA Standards for EIR Adequacy                                 |             |
| I. CEQA Definitions of Mitigation                                  |             |
| J. EIR Authors                                                     |             |

Page

**List of Figures**

|                                                                |     |
|----------------------------------------------------------------|-----|
| 1. Regional and Local Setting . . . . .                        | 50  |
| 2. Project Vicinity (Aerial Photograph) . . . . .              | 53  |
| 3. Existing Site Features (Aerial Photograph) . . . . .        | 56  |
| 4. Existing Site Features (Topographic Map) . . . . .          | 57  |
| 5. Project Development Plan . . . . .                          | 60  |
| 6. Project Roadway System Diagram . . . . .                    | 61  |
| 7. Proposed Road Cross-Sections . . . . .                      | 63  |
| 8. Project Home Schemes--Single Family . . . . .               | 67  |
| 9. Project Home Schemes--Multi-Family . . . . .                | 71  |
| 10. Project Landscape Plan . . . . .                           | 75  |
| 11. Williamson Act Lands . . . . .                             | 85  |
| 12. Southwest Boundary Reorganization . . . . .                | 86  |
| 13. Pittsburg General Plan Land Use Map . . . . .              | 87  |
| 14. Vicinity Land Use . . . . .                                | 91  |
| 15. Local Roadway System--Existing . . . . .                   | 124 |
| 16. Local Roadway System--Proposed . . . . .                   | 125 |
| 17. Existing Traffic Volumes--AM and PM Peak Hours . . . . .   | 127 |
| 18. Proposed Willow Pass Interchange Reconstruction . . . . .  | 140 |
| 19. Projected Offsite Traffic Volumes--Phase I, AM . . . . .   | 149 |
| 20. Projected Offsite Traffic Volumes--Phase I, PM . . . . .   | 150 |
| 21. Projected Offsite Traffic Volumes--Phase II, AM . . . . .  | 151 |
| 22. Projected Offsite Traffic Volumes--Phase II, PM . . . . .  | 152 |
| 23. Projected Offsite Traffic Volumes--Phase III, AM . . . . . | 153 |
| 24. Projected Offsite Traffic Volumes--Phase III, PM . . . . . | 154 |
| 25. Projected Onsite Traffic Volumes--Phase I, AM . . . . .    | 167 |
| 26. Projected Onsite Traffic Volumes--Phase I, PM . . . . .    | 168 |
| 27. Projected Onsite Traffic Volumes--Phase II, AM . . . . .   | 169 |
| 28. Projected Onsite Traffic Volumes--Phase II, PM . . . . .   | 170 |
| 29. Projected Onsite Traffic Volumes--Phase III, AM . . . . .  | 171 |
| 30. Projected Onsite Traffic Volumes--Phase III, PM . . . . .  | 172 |
| 31. Geologic Map . . . . .                                     | 183 |
| 32. Soils Map . . . . .                                        | 185 |
| 33. Landslide Map . . . . .                                    | 188 |
| 34. Site and Vicinity Drainage Characteristics . . . . .       | 210 |
| 35. Downstream Flooding Areas . . . . .                        | 212 |
| 36. Schematic Detention Basin Layout . . . . .                 | 215 |
| 37. Viewpoint Locations . . . . .                              | 224 |
| 38. Viewpoint 3 Before and After . . . . .                     | 231 |
| 39. Viewpoint 4 Before and After . . . . .                     | 233 |
| 40. Viewpoint 5 Before and After . . . . .                     | 235 |



|                                              | <u>Page</u> |
|----------------------------------------------|-------------|
| 41. General Plan Designated Ridges . . . . . | 241         |
| 42. Site Vegetation Map . . . . .            | 248         |
| 43. Noise Contours . . . . .                 | 281         |
| 44. Cultural Resource Locations . . . . .    | 302         |
| 45. Alternative Residential Layout . . . . . | 355         |

**List of Tables**

|                                                                                                |     |
|------------------------------------------------------------------------------------------------|-----|
| 1. Project Summary Data . . . . .                                                              | ii  |
| 2. Characteristics of Project Villages . . . . .                                               | 64  |
| 3. Proposed Single-Family Home Characteristics . . . . .                                       | 66  |
| 4. Pending and Anticipated Cumulative Development . . . . .                                    | 97  |
| 5. Housing Units Near Electrical Transmission Lines . . . . .                                  | 101 |
| 6. Local Population and Housing Trends . . . . .                                               | 112 |
| 7. Projected Housing Needs in Pittsburg by Income<br>Category: 1990 to 1995 . . . . .          | 115 |
| 8. Jobs/Housing Ratio--Pittsburg Planning Area vs. Contra Costa County . . . . .               | 115 |
| 9. Cumulative Population and Housing Impacts--City of Pittsburg . . . . .                      | 117 |
| 10. Key Local Roadway Links--Existing Capacity and Peak Volumes . . . . .                      | 129 |
| 11. Level of Service Descriptions--Basic Freeway Segments . . . . .                            | 131 |
| 12. Highway 4--Existing Capacity, Volumes, and Levels of Service . . . . .                     | 132 |
| 13. Signalized Intersection Levels of Service Descriptions . . . . .                           | 134 |
| 14. Intersection Level of Service--AM Peak Hour . . . . .                                      | 135 |
| 15. Intersection Level of Service--PM Peak Hour . . . . .                                      | 136 |
| 16. Project Trip Generation . . . . .                                                          | 144 |
| 17. Project Trip Distribution . . . . .                                                        | 145 |
| 18. Project Two-Way Volume Impacts on Vicinity Road Links--2005 . . . . .                      | 148 |
| 19. Cumulative Trip Generation . . . . .                                                       | 156 |
| 20. Highway 4 Base Case Plus Project Capacity, Volumes and Level of<br>Service--2005 . . . . . | 158 |
| 21. Vicinity Roadway Links Operation Base Case Plus Project--AM<br>Peak Hour . . . . .         | 160 |
| 22. Intersection Meeting Signal Warrant Criteria--Base Case and<br>With Project . . . . .      | 164 |
| 23. Project Impacts on Regional Road Links--2005 . . . . .                                     | 173 |
| 24. Project Internal Intersection Level of Service--AM Peak Hour . . . . .                     | 174 |
| 25. Project Internal Intersection Levels of Service--PM Peak Hour . . . . .                    | 175 |
| 26. Summary of Engineering Properties on Onsite Surficial Soils . . . . .                      | 187 |
| 27. Summary of Seismic Parameters for Nearby Active Faults . . . . .                           | 191 |
| 28. Summary of Earthquake Groundshaking Risks to Project Site . . . . .                        | 191 |
| 29. Probability of Occurrence of Earthquake Hazard . . . . .                                   | 193 |

|                                                                                 | <u>Page</u> |
|---------------------------------------------------------------------------------|-------------|
| 30. Potential Groundwater Impacts . . . . .                                     | 198         |
| 31. School Enrollment Capacity--Existing . . . . .                              | 261         |
| 32. School Enrollment Capacity--Project Impacts . . . . .                       | 261         |
| 33. Definitions of Acoustical Terms . . . . .                                   | 276         |
| 34. Typical Sound Levels Measured in the Environment and Industry . . . . .     | 277         |
| 35. Federal and State Ambient Air Quality Standards . . . . .                   | 289         |
| 36. Summary of Air Quality Data for Pittsburg 1988 through 1991 . . . . .       | 292         |
| 37. Projected Carbon Monoxide Concentrations near Major Intersections . . . . . | 295         |
| 38. Project Emissions . . . . .                                                 | 297         |
| 39. Project Housing Units Near Electrical Transmission Lines . . . . .          | 315         |
| 40. Densities of General Plan Residential Designations . . . . .                | 323         |
| 41. Alternatives: Traffic Generation Comparison . . . . .                       | 351         |
| 42. Mitigation Monitoring Checklist . . . . .                                   | 376         |



## I. INTRODUCTION

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
I. Introduction

---

## **I. INTRODUCTION**

---

### **A. EIR PURPOSE AND INTENT**

This environmental impact report (EIR) describes the environmental implications of the San Marco project, a proposed residential development plan which would ultimately contain 2,938 homes of mixed type grouped in 13 neighborhoods or "villages." The development plan calls for a total of 1,363 single-family detached units and 1,575 attached or multi-family units. The project is proposed for a 639-acre site located within the Pittsburg city limits on the south side of State Highway 4 opposite the east Willow Pass Road/Highway 4 intersection. The site is within the boundaries of the city's recent 1,122-acre Southwest Annexation Area (1990).

As used in this EIR, the terms "San Marco project" and "project" refer to all aspects of the current development plan proposal, including a proposed rezoning application, an associated Preliminary Development Plan, and all related local, state and federal approvals, entitlements, and permits that may be required for development of the proposed project.

This EIR has been prepared for the City of Pittsburg (the Lead Agency)<sup>1</sup> in keeping with state requirements set forth by the California Environmental Quality Act (CEQA). The report is intended to inform city decision-makers, other responsible agencies, and the general public of the proposed project and the environmental consequences of its approval.

CEQA Guidelines stipulate that an EIR is intended to serve as a public disclosure document, identifying those environmental impacts associated with the proposed project that are expected to be significant, and describing mitigation measures which could minimize or eliminate significant adverse impacts.<sup>2</sup> Such impacts and mitigation needs are discussed in this report at the level of detail necessary to allow reasoned decisions about the project and warranted conditions of project approval. As stipulated by CEQA Guidelines, this report also describes and evaluates a range of reasonable alternatives to the proposed project.

The discussions in this EIR of impacts, mitigation measures, and alternatives are intended to address all environmental issues to be resolved and all areas of controversy identified by

---

<sup>1</sup>CEQA Guidelines define the "Lead Agency" as the public agency that has the principal responsibility for carrying out or approving a project.

<sup>2</sup>CEQA Section 15149(b).

the city in its June 19, 1991 Initial Study for the proposed project, and by other agencies, organizations, and individuals in response to the city's June 19, 1991 Notice of Preparation. (The Notice of Preparation and Initial Study are included in Appendix A of this EIR.)

This EIR is also intended to serve as the required environmental documentation for city use in consideration of the proposed project rezoning aspects and any other city actions and approvals necessary to implement the project. As a result of the information in this EIR, the city may act to approve or deny these various project-related actions and approvals, and to establish any requirements or conditions on project design, construction, and operation that it deems warranted in order to mitigate identified effects of the project on the environment.

As the Lead Agency, the city also intends that this EIR shall serve as the CEQA-required environmental documentation for consideration of this project by other Responsible Agencies<sup>1</sup> including, but not limited to, the California Department of Fish and Game, the California Department of Transportation (Caltrans), the California Department of Health, the California Department of Conservation, the United States Army Corps of Engineers, and the United States Fish and Wildlife Service.

## **B. EIR APPROACH**

### **1. Subsequent EIR**

The project site is within the city's recent Southwest Annexation Area, Annexation 109. The environmental impacts of Annexation 109, including residential development of the project site, were addressed in the Southwest Boundary Reorganization (Annexation 109) Environmental Impact Report, a program EIR prepared by Blayney-Dyett and certified by the City of Pittsburgh in 1987. The San Marco project proposal, a more detailed, site-specific 2,938-unit residential development plan and associated subdivision and rezoning application was submitted by the project proponent in mid-1991. The city has determined that the environmental consequences of this subsequent, more detailed project development plan should be addressed through preparation of a "Subsequent Environmental Impact Report" under the authority of Section 21166 of CEQA and Section 15162 of the CEQA Guidelines. These CEQA sections require that a Subsequent EIR (SEIR) be prepared where an EIR addressing the action may already have been prepared, but: (1) subsequent more detailed information on the proposed project may require important revisions to the program EIR, (2) the subsequent more detailed information indicates that the project may have one or

---

<sup>1</sup>Under CEQA Guidelines, the term "Responsible Agency" includes all public agencies, other than the Lead Agency, which have discretionary approval power over aspects of the project for which the Lead Agency has prepared an EIR.

more significant effects not discussed previously in the EIR, and (3) mitigation measures or alternatives which were not previously considered in the EIR may substantially lessen one or more significant effects on the environment.

Under CEQA Guidelines, a "Subsequent EIR" must receive the same circulation and public review as the previous EIR.

## 2. Project Phasing

For purposes of conservative, "worst case" environmental impact assessment, the analyses and findings in this EIR are based on the assumption that the basic objectives of the project will be fully achieved, and the project will reach full buildout and occupancy over a period of 15 years; i.e., all of the proposed 13 villages, including all 2,938 residential units and all associated roadway and other onsite and offsite infrastructure improvements, will be complete and fully occupied or operational by the year 2005.

If the actual project buildout period takes place over a period of time longer than 15 years, the adverse environmental impacts of the project will be more diffused; i.e., reduced in relative severity.

## **C. EIR SCOPE--SIGNIFICANT ISSUES AND CONCERNS**

As provided for in the state CEQA Guidelines, the scope of this EIR includes all environmental issues to be resolved and all areas of controversy known to the Lead Agency (the city), including those issues and concerns confirmed as possibly significant by the City of Pittsburg Community Development Department in its preparation of the June 19, 1991 Initial Study, and by other interested agencies and individuals in response to the city's Notice of Preparation. The areas of controversy and environmental issues to be resolved include:

1. **Land Use**, including project impacts on agricultural and open space values, compatibility with existing adjacent agricultural activities, compatibility with existing onsite electrical transmission lines and natural gas wells, and relationships to existing and planned urban development patterns in the city's west sector;
2. **Population and Housing**, including project impacts on local population and housing trends, relationships to local housing affordability goals, and effects on the local balance between housing and jobs;
3. **Transportation**, including the relationship of the project to the planned State Highway 4 reconstruction through the area and the planned West Pittsburg BART extension and station at Bailey Road; the effects of the project on the configuration of the local roadway



system serving west Pittsburg; and the operational and safety impacts of the vehicular traffic generated by the project as well as cumulative development in the area on Highway 4 and on other existing and planned local road system components (e.g., Willow Pass Road, Leland Road, Avila Road, Bailey Road, Evora Road, Port Chicago Highway, etc.);

4. **Geology and Soils**, including the implications of the existing topographic, slope, landslide, and seismic characteristics of the foothill site and the proposed preliminary project grading plan for the long-term stability and safety of project homes and roads;

5. **Drainage and Water Quality**, including project impacts on site drainage characteristics, and on downstream drainage conditions and operation; the reliability and adequacy of the proposed onsite detention basin approach; and potential temporary and long-term project impacts on downstream water quality;

6. **Visual Factors**, including the impacts of the proposed project site plan, grading plan, landscape plan, and architectural characteristics on the visual character of the project vicinity, including views towards the site from Highway 4 and other important west Pittsburg vantage points;

7. **Municipal Services**, including the effects of the additional 2,938 project units on the adequacy of local water, sewer, police, fire, public schools, parks and recreation, and library services;

8. **Vegetation and Wildlife**, including project effects on the site's existing vegetation and wildlife values, and in particular on any possible sensitive, rare, or endangered plant or animal species;

9. **Noise**, including the compatibility of the proposed residential development with projected future noise levels along the reconstructed State Highway 4 and the new BART extension; and the effects of project-related traffic increases on noise levels along local residential routes;

10. **Air Quality**, including the effects of the project cumulative vehicular traffic increases on local and regional air quality levels, and the related implications of anticipated new BAAQMD standards and mitigation criteria;

11. **Archaeology**, including the potential effects of project grading activities on possible onsite archaeological features; and

12. **Public Health and Safety** factors, including the potential health implications of the various onsite electrical transmission lines (electromagnetic field exposure, etc.) and the safety implications and remediation needs associated with existing onsite natural gas wells.

#### **D. SIGNIFICANCE OF IMPACTS**

This EIR describes potentially significant adverse project impacts and identifies corresponding mitigation measures. Where it is determined in this report that a certain impact cannot be mitigated to a level of insignificance, the EIR identifies that impact as "unavoidable." Section VII.B of the EIR, Unavoidable and Irreversible Adverse Effects, includes a summary list of all significant project impacts identified in this EIR as unavoidable. Impacts that are identified as possibly significant, but are not identified as "unavoidable" (i.e., not listed in section VII.B), have been determined to be capable of mitigation to a point of insignificance by implementation of the associated mitigation measure or measures identified in this EIR.

#### **E. REPORT ORGANIZATION AND CONTENT**

The information in this EIR is generally organized under the headings of the various significant environmental issues listed under section C above (land use, population and housing, transportation, geology and soils, drainage and water quality, visual factors, etc.). The report describes the following in Section IV for each impact category:

1. the existing environmental setting;
2. significant impacts anticipated with the proposed project; and
3. measures necessary to mitigate anticipated significant adverse impacts.

In addition, the report includes a chapter describing and evaluating project consistency with adopted **local and regional plans**; a chapter describing and evaluating various **alternatives to the proposed action**; a chapter summarizing the EIR information in terms of various **CEQA-required assessment considerations**, including project growth-inducing effects, unavoidable adverse effects, irreversible environmental changes, short-term versus long-term environmental productivity, and "effects found not to be significant"; and finally, a chapter outlining a **mitigation monitoring program** in keeping with State AB 3180.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
I. Introduction  
Page 8

## II. SUMMARY

---

## II. SUMMARY

---

This EIR chapter includes a summary description of the proposed actions, a summary list of areas of controversy and issues to be resolved, a summary identification of each significant impact and associated mitigation measures, and a summary evaluation of project alternatives.

*This summary should not be relied upon for a thorough understanding of the details of the project, individual impacts, and mitigation measures. Please refer to Chapter III for a complete description of the project, Chapter IV for a complete description of project impacts and associated mitigation measures, and Chapter VI for a complete evaluation of alternatives to the project.*

### A. PROPOSED PROJECT

Seecon Financial and Construction Company, Inc., and North State Development Company of Concord have requested a rezoning, planned unit development permit, and tentative subdivision map approval for a 639-acre site in the city of Pittsburgh to allow phased construction of the San Marco project, a master planned community including 2,938 residential units of mixed type in 13 "villages," a 36-acre community park/detention basin area, two community recreation sites of 3 and 5 acres, and three small village parks. The project is located in the Southwest Hills area of the city, an area of rolling foothills on the south side of State Route 4 at Willow Pass Road. The site is currently vacant rangeland. The site also contains two parallel PG&E electrical transmission lines (230 and 115 kV), a 69 kV federally-operated electrical transmission line, a number of natural gas wells, and a small ranch complex. The site is surrounded on three sides by other large agricultural properties which are also subject to anticipated future development.

The proposed 2,938 homes would include 1,321 single-family units, 1,575 multiple-family units, and 42 ranchettes. Project buildout is expected to occur in phases over a period of 10 to 15 years.

A concurrent planning program is now underway to improve the adjacent highway to six-lane freeway status, install new freeway interchanges at Willow Pass Road and Bailey Road, and extend a parallel BART line to a new West Pittsburgh Station at Bailey Road.

The San Marco project plan also includes construction of the project segments of two Pittsburg General Plan designated arterial routes--the westerly extension of Leland Road to connect with Avila Road, and the southerly extension of Willow Pass Road from State Route 4 to Bailey Road. Both of these project arterial roadway segments would "stub" at the project boundaries.

The hilly site includes three intermittent creeks and two intermittent stock ponds. Construction of the proposed development plan will require extensive grading, including the placement of fill over segments of the three creeks. Some proposed fills exceed 125 feet in depth.

The *Land Use Element* of the City of Pittsburg General Plan designates various portions of the site as *Rural Residential*, *Residential Estate*, *Residential Low Density*, *Residential Medium Density*, *Agricultural Preserve*, and *Park*. The applicant proposes no change in these general plan designations.

The site is currently zoned with the city's temporary *Study* district classification. The applicant has requested that the zoning be changed to *Planned Development District (P-D)* with an accompanying Preliminary Development Plan containing the various project components described above.

Other actions and approvals necessary to implement the project would include city subdivision approval (tentative and final maps), Delta Diablo Sanitation District approval of proposed sewer extensions to service the project, and other discretionary permits which may be required by the city and other responsible state and federal agencies.

## **B. ENVIRONMENTAL ISSUES**

As provided for in the CEQA statutes and guidelines, the environmental focus of this project EIR is limited to those areas of controversy known to the city (the Lead Agency), including those issues and concerns identified as potentially significant by the City of Pittsburg Community Development Department in its preliminary review (Initial Study) of the proposed project, and by other interested agencies and individuals in response to the city's Notice of Preparation.<sup>1</sup> As described earlier in the introduction of this EIR, these areas of concern include:

### **1. Land Use,**

---

<sup>1</sup>A copy of the Notice of Preparation and Initial Study for the San Marco project is included as Appendix A of this EIR.

2. Population and Housing,
3. Transportation,
4. Soils and Geology,
5. Drainage and Water Quality,
6. Visual Factors,
7. Vegetation and Wildlife,
8. Municipal Services,
9. Noise,
10. Air Quality,
11. Cultural Resources, and
12. Public Health and Safety (electrical transmission lines, natural gas wells, etc.).

#### **C. SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATIONS**

Each significant impact and associated mitigation measure identified in this EIR is summarized in the SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATIONS chart that follows. The summary chart has been organized to correspond with the more detailed impact and mitigation discussions in Chapter IV of this EIR. The chart is arranged in five columns: (1) significant adverse environmental impacts, (2) level of impact significance prior to implementation of recommended mitigation measures, (3) recommended impact mitigation measures, (4) entity responsible for implementing the mitigation measures, and (5) level of impact significance after implementation of these mitigation measures.

In those instances where more than one measure may be required to mitigate an impact to a less-than-significant level, a series of mitigation measures is listed. ***For a complete description of the environmental setting, impacts, and recommended mitigation measures associated with each particular impact category, please refer to Chapter IV.***

#### **D. SUMMARY OF PROJECT RELATIONSHIPS TO ADOPTED PLANS AND POLICIES**

Chapter V of this EIR outlines project relationships to pertinent policies and provisions of the adopted City of Pittsburgh General Plan (1988). As required by CEQA, chapter V also evaluates project consistency with several adopted regional plans, including the Association of Bay Area Government's San Francisco Bay Area Regional Plan (1980), the Bay Area Air Quality Management District's Bay Area Air Quality Plan (1979), and the San Francisco Regional Water Quality Control Board's Bay Area Water Quality Management Plan (1980).

## SUMMARY OF IMPACTS AND MITIGATIONS

| Impacts                                                                                                                                                                                                                                                                                                | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                       | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| <b>LAND USE</b>                                                                                                                                                                                                                                                                                        |                                                    |                                                                                                                                                                                                                                                                                                                           |                              |                                                 |
| The project would result in the <u>urban conversion of the largest of the five remaining unsubdivided properties in the city's Southwest Hills planning area, would result in a substantial westerly extension of urbanization, and would represent a significant loss of local open space values.</u> | S                                                  | This impact would be <u>unavoidable and unmitigable, unless the general plan development designations and corresponding project size and development area were substantially reduced and confined to the lower elevations of the site.</u>                                                                                | City                         | SU                                              |
| Construction of the project and associated freeway, arterial roadway, and infrastructure improvements would have <u>significant growth-inducing effects on the adjacent Alves, Seecon, DeBonneville, and Ridge Farm properties.</u>                                                                    | S                                                  | Project growth-inducing effects on the adjacent Alves, Seecon, DeBonneville, and Ridge Farm properties would be subject to similar individual rezoning, environmental impact documentation, and public review procedures to ensure that associated adverse impacts and related mitigation needs are adequately addressed. | City                         | LS                                              |
| Conversion of the project site from agricultural rangeland to urban use would not constitute a significant adverse impact because none of the site is classified as prime agricultural land, the project represents a small portion of the countywide rangeland inventory, and the project             | LS                                                 | No mitigation required.                                                                                                                                                                                                                                                                                                   | None                         | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact



| Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                   | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                           | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| would not contribute to a significant countywide cumulative decline in agricultural productivity.                                                                                                                                                                                                                                                                                                                                         |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |                                                 |
| X The project would extend suburban density residential development to an elevation <u>270 feet higher than the highest existing suburban development</u> , and would extend <u>"ranchette" lots up to an elevation approximately 500 feet higher than existing major subdivisions in the Pittsburg hills</u> . The visual impacts of this project aspect, which would be significant, are described herein under <i>VISUAL FACTORS</i> . | S                                                  | This impact would be unavoidable and unmitigable unless the general plan Land Use map and/or policies were changed to confine development to lower elevations of the project site.                                                                                                                                                                                                                                            | City                         | SU                                              |
| The quality and livability of the approximately 309 closest project homes to the onsite PG&E and USA electrical transmission lines would be substantially diminished by views of these lines and associated towers.                                                                                                                                                                                                                       | S                                                  | Strategic planting of screen vegetation should be incorporated into the project landscaping plan to filter or block views of the transmission lines and towers from affected private lots, project travel corridors, and other key onsite vantage points. Even with these measures, however, these impacts could not be reduced to less than significant levels, given the height and prominence of the existing tower lines. | Project                      | SU                                              |
| The proposed large lots located atop the southwest ridge area of the site do not assure adequate preservation of the <i>Open Space</i> area designated on the <u>City of Pittsburg General Plan Land Use Map</u> .                                                                                                                                                                                                                        | S                                                  | The approximately 95-acre <i>Open Space</i> area now shown on the project development plan as five large lots in Village N should be more effectively preserved as permanent undisturbed open space through use of a conservation easement or some similar legal instrument.                                                                                                                                                  | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                              | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
|                                                                                                                                                                                                                                                      |                                                    | This easement should cover at least 85 percent of each of these lots.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |                                                 |
| The project would involve culverting and filling of onsite creek channels, which would be inconsistent with <u>Pittsburg General Plan</u> provisions calling for preservation and enhancement of creek open space, habitat, and recreational values. | S                                                  | See Vegetation and Wildlife section for mitigation of this impact.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | --                           | --                                              |
| The project could have land use compatibility impact problems with existing or future grazing activity on the Alves property (until the Alves site is converted to similar residential use, as anticipated in the city's general plan).              | S                                                  | Land use compatibility impacts between project residential uses and existing or future grazing activity on the Alves property should be mitigated by implementation of the following measures: <ul style="list-style-type: none"> <li>■ Warning prospective buyers of potential nuisances from grazing and other adjacent agricultural activity.</li> <li>■ Implementation of strict project leash laws to keep project dogs away from livestock and equestrian activities on adjacent properties.</li> <li>■ Construction of dog-proof fencing between project yards and adjacent agricultural operations.</li> </ul> | Project                      | LS                                              |
| The introduction of approximately 13 project homes in Village D near existing kennel and planned "animal center" activities on the                                                                                                                   | S                                                  | The same mitigations listed for impacts to the Alves property should be implemented.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                       | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                  | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| adjacent DeBonneville property may also result in future nuisance complaints from the new homeowners.                                                                                                                                                                         |                                                    |                                                                                      |                              |                                                 |
| The introduction of two or three project homes in Village D near existing grazing, stable, paddock uses, truck storage, and other ranching activities on the adjacent Ridge Farms property could result in future nuisance complaints from the new homeowners.                | S                                                  | The same mitigations listed for impacts to the Alves property should be implemented. | Project                      | LS                                              |
| The introduction of approximately 27 lots in project Villages G and N next to existing grazing activity on the adjacent Seecon property could also result in future nuisance complaints from the new homeowners.                                                              | S                                                  | The same mitigation listed for impacts to the Alves property should be implemented.  | Project                      | LS                                              |
| The construction of the project adjacent to Highway 4 could result in impacts on project residents related to air quality and noise.                                                                                                                                          | S                                                  | See SEIR sections on Noise and Air Quality for recommended mitigation measures.      | --                           | --                                              |
| r The project would be located outside the<br>r "Explosive Safety Quantity Distance" (ESQD)<br>r areas established to indicate the minimum<br>r required distance between inhabited structures<br>r and weapons storage activities at the Concord<br>r Naval Weapons Station. | LS                                                 | No mitigation required.                                                              | --                           | --                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                                                | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                     | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| Successful development and buildout of the project, and completion of related highway interchange, arterial roadway extensions, and other infrastructure extensions, would substantially increase pressures for development of other surrounding southwest Pittsburg lands, including the recently annexed Alves site, the pending DeBonneville and Ridge Farm annexations, and eventually other lands | S                                                  | Any such precedent-following actions would be subject to similar individual general plan amendment, rezoning, environmental impact documentation, and public review procedures to ensure that associated impacts and related mitigation needs are adequately addressed. | City                         | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact



| Impacts | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|

in the vicinity, including the adjacent Seeno property to the south. With the exception of the Alves property, urban development of these lands would require city approval of general plan amendments.

#### POPULATION AND HOUSING

The project would result in the construction of 2,938 residential units, including 1,363 single-family units, 1,236 apartments, and 339 townhouses. These residential units would accommodate an estimated total population of 7,730. Assuming project completion by the year 2005, the 2,938 new housing units would account for approximately 49 percent of the ABAG-projected increase of 6,010 households in the Pittsburg area between 1990 and 2005 and almost four percent of the countywide increase of 77,100 households during the same 15-year period.

|    |                         |      |    |
|----|-------------------------|------|----|
| LS | No mitigation required. | None | LS |
|----|-------------------------|------|----|

Without the project, anticipated cumulative growth is expected to add approximately 3,489 residential units and approximately 8,025 persons to the city between 1990 and the year 2005, a 13 percent 1990-2005 increase. The project would increase this growth increment to a total of 6,427 new residential units and

|    |                         |      |    |
|----|-------------------------|------|----|
| LS | No mitigation required. | None | LS |
|----|-------------------------|------|----|

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures     | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------|------------------------------|-------------------------------------------------|
| 14,782 people, a 23 percent 1990-2005 increase.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                    |                         |                              |                                                 |
| Based on the anticipated project home price and rental ranges described in this SEIR, none of the 2,968 project homes would be affordable to households in the <i>very low</i> income range, roughly 25 to 30 percent would be affordable to households in the <i>low</i> income range, roughly 45 to 50 percent would be affordable to households in the <i>moderate</i> income category, and roughly 25 percent would be affordable to households in the <i>above moderate</i> income category. | LS                                                 | No mitigation required. | None                         | LS                                              |

## TRANSPORTATION

The project would be constructed in phases which would be dictated primarily by market forces. The SEIR traffic analysis is based on the conservative ("worst case") assumption that construction of the first 1,000 project units would be completed by 1998 ("Phase I"), the second 1,000 units by 2000 ("Phase II"), and the remaining 438 units by 2005 ("Phase III"). Local roadway improvements assumed to be completed before the end of each of these three project phases include:

**Phase I** (by 1998): Widening of Highway 4 from four to six lanes between Willow Pass Road-Concord and Bailey Road; associated reconstruction of the Willow Pass Road and Bailey Road interchanges, extension of BART to Bailey Road, extension of Leland Road west into the site, but not yet connecting with Avila Road, and extension of Willow Pass Road over Highway 4 through the site to "stub" at the southern project boundary.

**Phase II** (by the year 2000): Leland Road would be connected to Avila Road.

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|

**Phase III** (by the year 2005): No additional improvements.

The proposed project residential mix would be expected to generate approximately 9,550 daily two-way trips on an average weekday following occupancy of Phase I; 7,560 additional trips after Phase II; and 5,910 additional trips after Phase III; for a total of 23,020 average daily trips. Project traffic distribution would occur as shown in SEIR Table 17 (section IV.C.2). Specific "base case" and project traffic impacts are described below (the term "base case" refers to anticipated future roadway operational conditions at years 1998, 2000, and 2005, without the project).

**Base Case Traffic Impacts--Highway 4 and Ramps**

|                                                                                                                                                                                                                                                                                                                                                                                                                            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----|
| b-1<br>Base case traffic volumes without the project would result in significant operational impacts on <u>westbound</u> Highway 4 in the AM peak hour west of Willow Pass Road-Concord by 1998; westbound east of Bailey Road by 2005; and on the westbound on-ramp from southbound Willow Pass Road-Pittsburg by 1998. Similar impacts would occur <u>eastbound</u> during the PM peak hour east of Bailey Road by 1998. | S | By 1998, require fair-share contribution from all "base case" developments for an additional freeway lane in each direction on Highway 4 west of the Willow Pass Road-Concord interchange to the Port Chicago interchange, an additional freeway lane in each direction east of Bailey Road to Railroad Avenue or beyond, and a second southbound Willow Pass Road-Pittsburg to westbound Highway 4 on-ramp lane. A short additional auxiliary lane should be provided to the west of this on-ramp lane merge area with the freeway mainline. | All "base case" development | LS |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----|

**Base Case Traffic Impacts--Non-Freeway Road Segments**

|                                                                                                                                                                                                                                                         |   |                                                                                                                                                                                                                                   |                             |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----|
| b-2<br>Base case traffic volumes at local non-freeway midblock roadway segments <u>without the project</u> would result in significant operational impacts in the <u>AM peak hour</u> by the year 2005 on Bailey Road, south of Leland Road (borderline | S | By the year 2000, the city should require fair-share contributions from all benefitting "base case" developments to improve Bailey Road between Leland Road and the City of Concord (i.e., selected realignments to reduce curves | All "base case" development | LS |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----|

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact



| Impacts                                                                                                                                                                                                                                                                                                                                   | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                      | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| operating conditions), and on westbound Willow Pass Road-Pittsburg, east of Port Chicago Highway (borderline operating conditions). Similar impacts would occur during the <u>PM peak hour</u> on Bailey Road, south of Leland Road by the year 2000, and on Willow Pass Road-Concord (borderline operating conditions) by the year 2005. |                                                    | and grades, widening of travel lanes, the addition of paved shoulders, and ideally, the addition of two more travel lanes). By the year 2005, the city should require fair-share contributions from all benefitting "base case" developments for the widening of Willow Pass Road-Concord from two to four lanes from Avila Road through the U.S. Naval Weapons Station. |                              |                                                 |

*Base Case Traffic Impacts--Intersections*

Base case traffic volumes without the project would result in significant operational impacts in the AM and PM peak hours at the Willow Pass Road-Concord/Avila-Leland Road intersection by the year 2000 (i.e., unacceptable delays for left turns from Avila-Leland Road). Signal warrant criteria would be reached at the Willow Pass Road extension/Highway 4 eastbound ramps intersection by 1998, and at the Willow Pass Road-Concord/Avila-Leland Road intersection by 2000.

S

By the year 1998, the city should require fair-share contributions from all "base case" developments for the new signal that would be warranted at the Willow Pass extension/ Highway 4 eastbound off-ramp intersection. By the year 2000, the city should require similar fair-share contributions for a traffic signal at Avila-Leland/Willow Pass Road-Concord intersection, for left and right turn deceleration lanes on the Willow Pass Road-Concord intersection approaches, and for the widening that would be needed on the Avila-Leland intersection approaches to provide separate right and left turn lanes. By the year 2005, the city should require similar contributions for a traffic signal at the Avila-Leland Road/Willow Pass extension intersection.

All "base case" development

LS

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                               | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mitigation<br>Responsibility             | Potential<br>Significance<br>With<br>Mitigation |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------|
| <i>Project Traffic Impacts--Highway 4 and Ramps</i>                                                                                                                                                                                                                   |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                 |
| 6.4<br>Project traffic would create significant additional operational impacts on Highway 4 in the AM peak hour <u>westbound</u> from the Willow Pass Road extension-Pittsburg to Willow Pass Road-Concord, and westbound, west of Willow Pass Road-Concord, by 2005. | S                                                  | By 2005, the project should provide a 200-to-300 space park-and-ride lot (two to three acres) adjacent to or near the Willow Pass Road-Pittsburg/Highway 4 interchange. The applicant should also coordinate project internal street design with local transit agencies to provide bus stops throughout the development, and should provide TSM/TDM information to all project residents.                                                                                                                                                                           | Project                                  | LS                                              |
| r<br>r<br>r                                                                                                                                                                                                                                                           |                                                    | If the ongoing CCTA Highway 4 improvement project provides pavement width for only six lanes plus auxiliary lanes, the city should require a fair-share contribution from the project and all other benefitting developments towards the addition of one freeway lane in each direction (possibly an H.O.V. lane) from the Willow Pass Road-Pittsburg interchange to west of the Willow Pass Road-Concord interchange by 2005. If a mechanism is not established by the CCTA to collect such contributions, these impacts would be significant unmitigable impacts. | Project and all benefitting developments | LS                                              |
| r<br>r<br>r<br>r                                                                                                                                                                                                                                                      |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                 |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|

*Project Traffic Impacts--Non-Freeway Road Segments*

|                                                                                                                                                                                                                                                                                                                                         |   |                                                                                                                                                                                                                                                                                                                    |                                          |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----|
| B-5<br>r The applicant does not control access across<br>r the Alves property. Without this access, the<br>r project would result in significant adverse<br>r operational impacts to the local circulation<br>r system.                                                                                                                 | S | The applicant should construct access to the project through the Alves property. Without the access, the project should not proceed.                                                                                                                                                                               |                                          |    |
| B-6<br>Project traffic would create marginal operating conditions during the PM peak hour on Bailey Road south of Leland Road by 1998, and more than a five percent increase in traffic to a roadway with a pre-existing LOS E would occur by 2000. Project traffic would also create significant additional operational impacts during | S | The City should require fair-share contributions from the project and other benefitting developments for the widening and improvements needed along Bailey Road from Leland Road to the City of Concord by the year 2000. The City should require similar fair share contributions for the widening of Willow Pass | Project and all benefitting developments | LS |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact



| Impacts                                                                                                                                                                                                                                                                  | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                              | Mitigation<br>Responsibility                                              | Potential<br>Significance<br>With<br>Mitigation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------|
| the AM peak hour on Bailey Road, south of Leland Road by 2005. Significant operational impacts would also occur on Willow Pass Road-Concord, south of Avila Road by 2005.                                                                                                |                                                    | Road-Concord from two to four lanes south of Avila Road by 2005.                                                                                                                                                                                                                                                                                                                                                                 |                                                                           |                                                 |
| <i>Project Traffic Impacts--Intersections</i>                                                                                                                                                                                                                            |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                           |                                                 |
| B.7<br>Project traffic would significantly aggravate the pre-existing need for signals at the intersection of the Willow Pass Road extension/Highway 4 eastbound ramps intersection by 1998, and the of Willow Pass Road-Concord/Avila-Leland Road intersection by 2000. | S                                                  | #14<br>The project should provide a fair-share contribution towards the signalization of the Willow Pass Road-Pittsburg/Highway 4 eastbound ramps intersection by 1998, provide similar contributions towards the signalization and geometric improvements needed at the Avila-Leland/Willow Pass Road-Concord intersection by 2000, and provide a right turn lane on the eastbound Leland Road approach to Bailey Road by 2005. | Project and all benefitting development                                   | LS                                              |
| B.8<br>The project would also contribute to cumulative traffic impacts throughout the citywide roadway system beyond the specific intersection and roadway segments analyzed in this SEIR.                                                                               | S                                                  | #15<br>The project should be required to pay the Traffic Mitigation Fee being considered for adoption by the Pittsburg City Council in June of 1992 to offset citywide traffic impacts.                                                                                                                                                                                                                                          | City of Pittsburg, all citywide developments                              | LS                                              |
| <i>Regional Impacts</i>                                                                                                                                                                                                                                                  |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                           |                                                 |
| B.9<br>r The project would incrementally add to the pre-<br>r existing base case need for widening of<br>r Highway 4 to the east through the Antioch<br>r area.<br>r<br>r<br>r                                                                                           | S                                                  | The project should be required to pay a regional traffic impact fee which should be established by the Contra Costa Transportation Authority. If such a fee is not established prior to issuance of project building permits, these impacts would be unmitigable significant impacts.                                                                                                                                            | CCTA, City of Pittsburg, adjacent jurisdictions, all regional development | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                                                                 | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                               | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| <i>Project Onsite Impacts</i>                                                                                                                                                                                                                                                                                                                                                                                           |                                                    |                                                                                                                                                                                                                                                                   |                              |                                                 |
| B.10<br>The westerly portion of the project would have only one access road for use during an emergency until the connection of Leland Road to Avila Road is completed as anticipated in Phase II.                                                                                                                                                                                                                      | S                                                  | Provide an interim emergency access connection from the west end of Leland Road on the south end of Willow Pass Road to the existing local street system.                                                                                                         | Project                      | LS                                              |
| S.11<br>The project Village A connection to Avila-Leland Road is proposed too close to the Willow Pass extension/Leland Road intersection and would create safety problems related to conflicting vehicular movements between these two intersections.                                                                                                                                                                  | S                                                  | Redesign the project to eliminate the Village A street connection to Avila-Leland Road near the Willow Pass Road extension intersection.                                                                                                                          | Project                      | LS                                              |
| B.12<br>The intersection of Avila-Leland Road/Willow Pass Road extension would operate at LOS E by 2005 in the AM peak hour.                                                                                                                                                                                                                                                                                            | S                                                  | To mitigate onsite intersection impacts, signalize the Avila-Leland/Willow Pass Road extension intersection by the year 2000 and signalize the Avila-Leland Road intersections with Street B/Village C access and with the Village A and M access drives by 2005. | Project                      | LS                                              |
| B.13<br>During the PM Peak hour, the intersections of Avila-Leland Road/Willow Pass Road extension, Avila-Leland Road/Village A and M access, Avila-Leland Road/Village B-Park access, and Avila-Leland Road/B Street-Village C access would experience unacceptable levels of service by the year 2000. The Avila-Leland/Willow Pass Road extension intersection would also warrant a traffic signal by the year 2000. |                                                    |                                                                                                                                                                                                                                                                   |                              |                                                 |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|
|---------|----------------------------------------------------|---------------------|------------------------------|-------------------------------------------------|

## SOILS AND GEOLOGY

The proposed preliminary project grading plan involves extensive "mass grading" over most of the 639-acre, hilly site in order to realize the proposed development capacity and repair existing landslides. The applicant estimate that between 7.5 and nine million cubic yards of earth would be moved to accommodate the project. The plan is expected to involve cuts up to 120 feet deep and 180 feet high, and fills up to about 125 feet deep and 130 feet high. The maximum inclination of both cut-and-fill slopes would be 3:1.

|                                                                                                                                                                            |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----|
| Expansive soils on the site contain moderate to high shrink/swell potentials which, if not properly engineered for, could damage project homes, roads, and infrastructure. | S | Grading/foundation designs should be prepared for each lot based on a standard soils test performed by a qualified geotechnical professional on each lot after mass grading has been completed, and an associated report recommending appropriate lot-specific foundation design, soil preparation, and selective grading measures.<br><br>A drainage plan should be prepared by a registered civil engineer for each lot in compliance with the provisions listed in SEIR section IV.D.3.b(1) to avoid impacts of expansive earth materials due to improper surface drainage. | Project | LS |
| Soils on the site are also susceptible to severe stream, gully, and sheet erosion, particularly during project construction operations.                                    | S | A project erosion control plan should be prepared and implemented by the project civil engineer and a qualified geotechnical professional. The plan should include construction of "V"-lined ditches on all graded slopes, should designate all drainageways as                                                                                                                                                                                                                                                                                                                | Project | LS |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                           | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| Project hillsides are prone to slope stability problems such as landslide activity, slope creep, and debris flow. | S                                                  | <p>public storm easements, should incorporate ABAG-recommended erosion control measures, and should incorporate <i>best-management</i> construction practices.</p> <p>In order to mitigate the specific slope stability impacts identified in the SEIR, the following measures must be completed by a qualified geotechnical professional prior to subdivision approval:</p> <ul style="list-style-type: none"> <li>▪ Preparation of a <u>detailed</u> geologic map. This map should identify every instance of past landsliding, earthflows, slumps, debris flows, debris basins, erosional gullies, and every occurrence of colluvial swales, soil creep, rock falls, and adversely oriented bedding. Test borings and/or exploration pits should be used to evaluate all areas of unstable material.</li> <li>▪ A slope stability analysis should be completed for critical cut slopes, fill slopes, and natural slopes.</li> <li>▪ A <u>detailed</u> slope stabilization plan should be prepared. This plan should include the measures listed in section IV.D.3.e(1) of this SEIR.</li> </ul> | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact



| Impacts                                                                                                                                                                                                                  | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                           | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| Project homes, appurtenant structures, retaining walls, roadways, and public infrastructure could be damaged by reactivation of existing landslides on the site.                                                         | S                                                  | The slope stabilization plan described above should give particular attention to onsite landslide areas. Prior to subdivision approval, a detailed construction plan should be prepared, including detailed sections, limits of work, and grading specifications for all landslides, potential landslides, and off-site landslides.                                           | Project                      | LS                                              |
| Project homes, appurtenant structures, retaining walls, roadways, and public infrastructure could also be damaged by slope creep and debris flow.                                                                        | S                                                  | The slope stabilization plan should include specific recommendations, including setbacks from slopes susceptible to slope creep, to offset potential damage to project features.                                                                                                                                                                                              | Project                      | LS                                              |
| If project subsurface drainage improvements at cut and fill slopes are not properly maintained, they could cease to function as designed, causing slope stability impacts.                                               | S                                                  | See General Mitigations at the end of this section.                                                                                                                                                                                                                                                                                                                           | Project                      | LS                                              |
| The extensive and large amounts of fill proposed for the site, in combination with the number of compressible deposits on the site, make the project particularly subject to damage due to differential fill settlement. | S                                                  | To mitigate the potential effects of differential settlement: (1) a series of laboratory settlement analyses should be completed for soils on the site prior to subdivision approval; (2) all fill should be placed so as to minimize settlement; (3) subsurface drains should be placed under all fills; and (4) a fill settlement monitoring program should be implemented. | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                          | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| Damage to structures, as well as slope and stream bank failure, could occur within the project as a result of seismically-induced groundshaking. Groundshaking could also cause landslides, differential fill settlement, ground fissures, or liquefaction, effects which could also significantly damage project structures and infrastructure. | S                                                  | <p>Seismic-related hazards could be offset through completion of the following:</p> <ul style="list-style-type: none"> <li>▪ Prior to subdivision approval, an analysis by a qualified geotechnical professional of the site susceptibility to earthquake-induced landsliding, fill settlement, development of ground fissures, and liquefaction, and the preparation of detailed recommendations to address identified hazards through engineering solutions or the avoidance of hazardous areas. This analysis should be based on test borings and laboratory tests.</li> <li>▪ Prior to subdivision approval, an analysis of possible sympathetic displacement along the fault related features of the site, and the preparation of recommendations for appropriate setbacks from these features.</li> <li>▪ Construction of project buildings and foundations, underground utilities, and other improvements in compliance with all public agency requirements.</li> </ul> | Project                      | LS                                              |
| Project-grading (placement of fill, location of cuts) could affect existing onsite groundwater conditions (see Table 30, SEIR section IV.D.2), resulting in slope instability, differential fill settlement, seepage, and other geotechnical hazards. Also, project landscape irrigation could result in increased infiltration into the         | S                                                  | These groundwater-related geotechnical hazards could be offset by construction of a subsurface drainage system in all fill areas (especially all springs or streams to be covered), construction of trench drains across all onsite valleys in which fill is proposed to extend offsite, subdrainage measures as                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                  | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                               | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| groundwater system, resulting in similar geotechnical hazards.                                                                                                                                                                                           |                                                    | needed at utility trenches, design of a surface drainage system which will not create adverse impacts on the groundwater regime, and education of project homeowners regarding the hazards of over-irrigation of landscape areas. |                              |                                                 |
| The hauling of excess dirt from the site due to a possible grading cut-and-fill imbalance could result in heavy offsite truck traffic during the project construction period, and associated offsite and air quality impacts relating to dust particles. | S                                                  | Onsite grading should be balanced to the extent possible to reduce or eliminate necessary offsite hauling of dirt.                                                                                                                | Project                      | LS                                              |

The SEIR also makes several general recommendations to facilitate effective mitigation of all identified impacts. These recommendations include: (1) the preparation of a detailed construction phase geologic map to verify that geologic conditions are as expected; (2) completion of progress and completion reports with a geologic mapping of all cut-and-fill pads and slopes, and also showing the installed location of subdrainages and cleanouts; and (3) the implementation of ongoing maintenance and repair programs for all geotechnical-related mitigation elements of the project, funded by a maintenance assessment district.

#### **DRAINAGE AND WATER QUALITY**

|                                                                                                                                                                                                                                                                                                |    |                                       |      |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------|------|----|
| The project proponents have designed a drainage system which includes detention facilities designed to limit offsite drainage runoff peak runoff to levels stipulated by the Contra Costa County Flood Control and Water District. The design of the system has been approved by the CCCFCWCD. | LS | No additional mitigation is required. | None | LS |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------|------|----|

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                         | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                         | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| Although the total volume of runoff from the site would increase, the reduction in peak discharge rates created by the proposed drainage system, and the existing capacity of the downstream drainage system, would be expected to prevent the project from creating significant downstream drainage facility impacts due to increased volumes. | LS                                                 | Prior to Final Map Approval, a hydrology report describing the project drainage system design details must be submitted to all affected agencies. The report must present a complete hydraulic analysis of discharge from the project beneath Highway 4, and the capacity of the proposed retention basins. | Project                      | LS                                              |
| As explained herein under Soils and Geology, the project could cause significant erosion and related impacts due to steep slopes, the susceptibility of site soils to erosion, and the large quantity of grading proposed.                                                                                                                      | S                                                  | The project grading plan should include an approved drainage and erosion control plan and an associated ongoing inspection program, as described in SEIR sections IV.D.3 (Soils and Geology) and IV.E.3.b (Drainage and Water Quality).                                                                     | Project                      | LS                                              |
| The conversion of the site from grassland to suburban type development would increase the amount of non-point urban pollutants flowing from the site into Shore Acres Creek and eventually into Suisun Bay.                                                                                                                                     | S                                                  | In anticipation of the NPDES stormwater discharge permit requirements to be implemented in the near future, the project should include provisions for street cleaning, oil and grease separators for large parking areas, infiltration areas, and trash racks.                                              | Project                      | LS                                              |
| <b>VISUAL</b>                                                                                                                                                                                                                                                                                                                                   |                                                    |                                                                                                                                                                                                                                                                                                             |                              |                                                 |
| The proposed conversion of hillside rangeland to urban use would be consistent with the <u>Pittsburg General Plan Land Use Map</u> , but                                                                                                                                                                                                        | S                                                  | The visual impact associated with the proposed change in land use could not be mitigated to levels considered less than significant.                                                                                                                                                                        | Project                      | SU                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                              | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| would represent a significant adverse visual impact on the rural, open space character of the distinctive Southwest Hills landscape. |                                                    | <p>However, the following measures would substantially reduce identified visual impacts:</p> <p>(1) Require that all project construction occur at elevations below the major ridgeline portion of the site (i.e., below approximately the 750-foot contour);</p> <p>(2) Incorporate appropriate controls on architecture, grading, introduced landscaping, future tree removal, ongoing landscape maintenance, and building materials and colors (including roofing) in the final project design (CC&amp;Rs, etc.);</p> <p>(3) Incorporate architectural design standards in the project final design to ensure against visually conspicuous residential structures, particularly for possible custom homes in Village N;</p> <p>(4) Incorporate provisions and controls in the project final design related to common and private landscaping as described in SEIR section IV.F.2.a(4); and</p> <p>(5) Incorporate provisions and controls in the final project design to reduce the effects of light and glare, as described in SEIR section IV.F.3.a(5).</p> |                              |                                                 |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                           | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| The location of residential uses and other features in proximity to the two parallel PG&E electrical transmission lines and associated towers would result in adverse visual impacts for residents and users of those project components closest to the lines.                                                                    | S                                                  | Identified visual impacts associated with the PG&E electrical transmission lines and towers could be reduced, although not to less than significant levels, by the strategic location of trees and other landscaping.                                                                                                                                                                                                                                                                                                                                          | Project                      | SU                                              |
| The generally consistent building setbacks, home types, and building heights, in combination with the garage doors of similar design, narrow residential streets, limited front yard setbacks, and large percentage of two story homes, could result in visual monotony and an internal sense of excessive density and enclosure. | S                                                  | The final project design should include more variation in unit design, the inclusion of more single-story elements in two-story homes, the introduction of more single-story homes at selected locations along each street, and the introduction of unit designs which do not emphasize the garage door in the front elevation.                                                                                                                                                                                                                                | Project                      | LS                                              |
| The project would significantly change the character of the west "gateway" to the Pittsburgh community as viewed from eastbound traffic on Highway 4 (see Figure 38 in SEIR section IV.F.2), and would also dramatically change the view of the site for westbound traffic on Highway 4 (see Figure 39).                          | S                                                  | Implementation of mitigation measures described in SEIR section IV.F.3 relating to: (1) increased tree planting; (2) implementation of an effective landscaping plan for Villages A, B, C, and M; (3) the use of subdued building materials and colors (including roofing); and (4) provision of dense landscaping in open space areas in Villages B, C, and M, would substantially reduce project adverse visual impacts on views from Highway 4, although not to less than significant levels. Preservation of the southern portion of Shore Acres Creek and | Project                      | SU                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                             | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                    | incorporation of the creek into the project design would also reduce visual impacts.                                                                                                                                                                                                                                            |                              |                                                 |
| Project homes in Villages L, J, and M would be most visible from viewpoints in the Sea Breeze and Mota Ranch subdivisions. Project impacts on southerly views from these two subdivisions would be significant due to the close proximity, the large portion of the site visible from these locations, and the degree of contrast between the intensive new project suburban landscape and the distinctive existing hillside landscape (see Figure 40 in section IV.F.2). | S                                                  | Implementation of all measures listed above and below would substantially reduce impacts on views from these locations, although not to less than significant levels. The preservation of the general plan designated "major ridge" and <i>Open Space</i> area of the site would also be particularly effective.                | Project                      | SU                                              |
| Views of the project from the Shore Acres community would be limited by intervening urban development and landscaping. However, loss of the visual relief currently provided to this community by the project site ridgeline backdrop to the south would be considered a significant adverse visual impact.                                                                                                                                                               | S                                                  | Implementation of all measures listed above and below would substantially reduce project impacts on views from locations in the Shore Acres community, although not to less than significant levels. The preservation of the general plan designated "major ridge" and <i>Open Space</i> areas would be particularly important. | Project                      | SU                                              |
| Project visibility from the unincorporated West Pittsburg community would be limited primarily to vantage points along Willow Pass Road and along those diagonal, northeast-southwest oriented residential streets north of Willow Pass Road which are in line with the project site. Loss of the visual relief currently provided by                                                                                                                                     | S                                                  | Implementation of all measures listed above and below would substantially reduce impacts on views from West Pittsburg vantage points, although not to less than significant levels. The preservation of the general plan designated "major ridge" and <i>Open Space</i> areas would be particularly important.                  | Project                      | SU                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                        | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| the ridgeline backdrop of the project site would be considered a significant adverse visual impact.                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |                                                 |
| Views of the project site from Evora Road (photograph 1 in SEIR section IV.F.1) and Avila Road would also undergo a dramatic change. The amount of traffic on Evora Road, the extent of views of the site from this route, and the distinctly rural existing character of the area would make the project impacts to these views particularly significant. Due to the relatively small amount of traffic on Avila Road, project impacts on Avila Road views would not be considered significant.                    | S                                                  | Mitigation relating to use of subdued building materials and colors, and common landscaping, would be effective in substantially reducing project impacts on views from Evora Road and Avila Road-Leland Avenue. Mitigation relating to increased overall landscaping, landscaping in Villages A, B, and C; and use of subdued roofing materials would be particularly important for reducing impacts on views from Evora Road.                            | Project                      | SU                                              |
| The development of the Oak Hills South subdivision and the Alves property, in combination with the project, would represent a major westerly extension of Pittsburg urbanization, a significant reduction in the existing hillside landscape, a significant loss of open space, and a corresponding significant cumulative visual impact. The potential future conversion of the adjacent DeBonneville, Ridge Farm, and Seecon properties to urban use would further increase the cumulative adverse visual impact. | S                                                  | Each additional development in the project vicinity is currently undergoing or will be subject to its own environmental review. The visual impacts and mitigation needs related to each of these projects should be addressed in each project review. Nevertheless, the cumulative adverse visual impacts of these development expectations, although substantially reducible through good design, could not be mitigated to less than significant levels. | City                         | SU                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact



| Impacts                                                                                                                                                                                                                                                                                                                                                                                   | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                        | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| The development plan includes five 20-acre+ lots in the ridgeline area in the upper southwest portion of the project site which is designated by the general plan as <i>Open Space</i> . Inadequate control of the development and use of these lots would be in conflict with the intent of this general plan land use designation and would create a significant adverse visual impact. | S                                                  | Any private ownership of the designated <i>Open Space</i> area should be subject to permanent prohibition on future development or visual impacts on at least 85 percent of the ownership through application of a conservation easement or some similar legal instrument. | Project                      | LS                                              |
| The project site plan may not be consistent with the city general plan policy to retain "major ridgelines" as open space. Project homes are proposed in an area of the southwest corner of the site designed by the <u>Pittsburg General Plan</u> as a "major ridgeline."                                                                                                                 | S                                                  | The layout of Neighborhood N should be revised as warranted to achieve project consistency with the "major ridgeline" and <i>Open Space</i> designations of the city general plan.                                                                                         | Project                      | LS                                              |
| <b>VEGETATION AND WILDLIFE</b>                                                                                                                                                                                                                                                                                                                                                            |                                                    |                                                                                                                                                                                                                                                                            |                              |                                                 |
| The project would involve removal of most of the site's existing vegetation, including over 500 acres of common annual grassland. The direct loss of this grassland vegetation would not be biologically significant, but would contribute to a significant regional cumulative loss of open wildlife range.                                                                              | S                                                  | The project contribution to these regional impacts could be reduced, but not to less than significant levels, through appropriate revegetation and landscaping of the site with emphasis on native plants, and restoration of site riparian and wetland areas.             | Project                      | SU                                              |
| No sensitive plant species would be affected by the project.                                                                                                                                                                                                                                                                                                                              | LS                                                 | No mitigation is required.                                                                                                                                                                                                                                                 | None                         | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                       | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| No significant impacts to common or sensitive wildlife species have been identified.                                                                                                                                          | LS                                                 | No mitigation is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | None                         | LS                                              |
| The project would result in the loss of 0.75 acre of riparian thicket along Shore Acres Creek, and 3.5 acres of jurisdictional wetlands.                                                                                      | S                                                  | <del>The project should be redesigned to preserve the identified corridor of riparian and other vegetation along the northern section of Shore Acres Creek, and the riparian herbaceous meadow in the northwest corner of the site. Alternately, these sensitive habitats should be re-created elsewhere on the site (i.e., in a designated park or open space area) to the satisfaction of the US Army Corps of Engineers and the State Department of Fish and Game.</del><br><br>The wet meadow to be displaced by the eastbound offramp of the new freeway interchange should be re-created elsewhere on the site (i.e., in a designated park or open space area), to the satisfaction of the US Army Corps of Engineers. | Project                      | LS                                              |
| These stream and wetland fill aspects of the project would require a Section 404 permit from the US Army Corps of Engineers (COE) and would require a Streambed Alteration permit from the Department of Fish and Game (DFG). | S                                                  | As a condition of project approval, the applicant should be required to submit to the city written documentation showing that all COE and DFG requirements have been met with regard to Section 404 and the Streambed Alteration permitting process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                      | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| <b>MUNICIPAL SERVICES</b>                                                                                                                                                                                                                                                                                    |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                 |
| <i>Schools</i>                                                                                                                                                                                                                                                                                               |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                 |
| The project would generate an estimated 423 additional elementary school, 173 middle school, and 202 high school students. This additional enrollment would create significant impacts on the capacity of these Mount Diablo Unified School District elementary and middle schools serving the project area. | S                                                  | School enrollment impacts would be partially mitigated by the existing school impact fees. The project should also participate in a future added capital facilities program which would include (in addition to the payment of existing fees) payment of any additional impact fees established by the MDUSD under current state guidelines, and establishment of a project Mello-Roos District to fund the project's fair share of necessary cumulative school improvements. Project participation in this mitigation program could be reduced in exchange for financing or construction of a new elementary school on the project site. | Project, City, MDUSD         | LS                                              |
| <i>Water</i>                                                                                                                                                                                                                                                                                                 |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                 |
| The project would require construction of the water distribution system planned for the site by the city's <u>Water Master Plan Update</u> .                                                                                                                                                                 | S                                                  | The project would be responsible for all water distribution system improvements required to serve the project, and should also constitute a project fair share toward the cost of recent water treatment plant expansion and raw water storage facilities.                                                                                                                                                                                                                                                                                                                                                                                | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                             | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mitigation<br>Responsibility   | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------|
| <i>Sewer</i>                                                                                                                                                                                                                                                                        |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                |                                                 |
| The project would require the construction of the planned sewer collection system from the project to the existing West Pittsburg interceptor, as anticipated by the Delta Diablo Sanitation District (DDSD). The DDSD has established a development fee to fund this construction. | S                                                  | The project would be required to pay the sewer development fees for DDSD Zone 1. Applicant completion of a sewer capacity study to determine the size of the project sewer extension lines and points of connection to the DDSD main facilities would also be required.                                                                                                                                                                                      | Project                        | LS                                              |
| <i>Police Service</i>                                                                                                                                                                                                                                                               |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                |                                                 |
| The project would be subject to longer than typical emergency response times and would generate a need for ten additional sworn police officers and five non-sworn personnel at project buildout.                                                                                   | S                                                  | A new, separate, fully staffed, southwest area beat should be established to meet the demands of the project and other cumulative growth in the city's southwest area. The police department also recommends that the project provide (1) adequate, well lit, accessible, and safe parking lots for proposed multi-family buildings, (2) streets which meet city standards, and (3) parks which do not abut side and/or rear yards of residential dwellings. | City                           | LS                                              |
| <i>Fire Protection Service</i>                                                                                                                                                                                                                                                      |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                |                                                 |
| The project would significantly increase the population located outside the existing range of adequate Riverview Fire Protection District (RFPD) emergency response time. The substantial new population generated by the                                                           | S                                                  | A new fire station should be constructed at a location which can meet the RFPD response time standard. The project should provide its fair share of those local fire protection capital improvement and operating expenses not                                                                                                                                                                                                                               | RFPD,<br>Project fair<br>share | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                               | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| <p>project would also create the demand for a new fire station (and associated equipment) in closer proximity to the site, and the need to fund ongoing operation of that station. Payment of the established Fire Facilities Fee for capital improvements and the Annual Benefit Assessment Fee for annual operations would only partially fund these necessary increases in capital facilities and ongoing operations require by the project.</p> <p><i>Parks and Recreation</i></p> <p>To meet city per-capita park standards, the project would need to include approximately 15.5 total acres of community park and 23 total acres of neighborhood parks. The proposed combination of one 36-acre community park, two "community recreation areas" totalling eight acres, and three one-acre village parks would meet the total acreage park needs of project residents and would provide adequate park facilities within walking distance (i.e., one-half mile) from all project lots, provided that the various park facilities are fully improved and completed in a sequence that adequately corresponds to project population needs.</p> |                                                    | <p>covered by existing fees. The project should also incorporate the additional development design measures recommended by the RFPD which are listed in SEIR section IV.H.5.c(3).</p>                                                                                                                                             |                              |                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | LS                                                 | <p>The project must complete proposed park and recreation facilities in a sequence that relates adequately to the needs of project residential phasing; i.e., at least one park facility which is equivalent to a neighborhood park (5 acres or greater in size) should be constructed with the first three project villages.</p> | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                           | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| <i>Library Services</i>                                                                                                                                                                                                                                                                                           |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                                                 |
| The project would increase the total population served by the Pittsburg and Concord branches of the Contra Costa County Library system by four and one-half percent. This population increase would reduce the already inadequate library space per capita and books per capita ratios at both of these branches. | S                                                  | The project should contribute additional library facilities equal to the need generated by the project. Based on nationally accepted per-capita standards, this goal would require the addition of approximately 3,865 square feet of library space, and the addition of 15,460 volumes of books to the local branches of the county library system. The project impact on library space and volumes per capita ratios could also be offset by adequate provision of a fully-equipped bookmobile.                                                                 | Project                      | LS                                              |
| <i>NOISE</i>                                                                                                                                                                                                                                                                                                      |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                                                 |
| Noise levels outside of proposed project homes closest to Highway 4, Willow Pass Road, and West Leland Road would exceed the normally acceptable exterior $L_{dn}$ standard of 60 dBA for residential development and the interior standard of 45 dB $L_{dn}$ when windows are open.                              | S                                                  | To mitigate exterior noise level impacts, an eight-foot high landscaped berm, or an 11-foot sound wall, or some combination of the two, should be constructed along Highway 4; a seven-foot sound wall should be constructed on both sides of the Willow Pass Road extension (or the project could be redesigned to allow room for a noise berm); and individual decks and patios on those project homes adjacent to Leland Road should be constructed with fences adequately designed to mitigate local noise impacts to each individual affected dwelling unit. | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                           | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                     | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
|                                                                                                                                                                                                   |                                                    | First floor interior noise levels would be mitigated by those measures described above for exterior noise levels. Second story interior spaces exposed to 60 dB exterior noise levels should be provided with mechanical ventilation so that windows can be closed. In some cases, sound rated glazing may be required. |                              |                                                 |
| No significant offsite noise impacts related to project-generated traffic have been identified.                                                                                                   | LS                                                 | No mitigation is required.                                                                                                                                                                                                                                                                                              | None                         | LS                                              |
| No significant construction period noise impacts on offsite land uses have been identified.                                                                                                       | LS                                                 | No mitigation is required.                                                                                                                                                                                                                                                                                              | None                         | LS                                              |
| Because the development would be phased, construction noise from later phases would impact project homes constructed in earlier phases.                                                           | S                                                  | To reduce identified impacts, project construction should be limited to weekdays between 8:00 AM and 5:00 PM. All equipment used in the project should be muffled and maintained.                                                                                                                                       | Project                      | SU                                              |
| <b>AIR QUALITY</b>                                                                                                                                                                                |                                                    |                                                                                                                                                                                                                                                                                                                         |                              |                                                 |
| Construction of the project would generate significant quantities of airborne particulate matter (PM-10) which could adversely affect existing or future residential areas near the project site. | S                                                  | Construction period air quality impacts should be reduced through implementation of the construction practices described in SEIR section IV.J.3(a).                                                                                                                                                                     | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                            | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| Project generated emissions of carbon monoxide would not result in local concentrations above state and federal standards.                                                                                                                                                         | LS                                                 | No mitigation is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                       | None                         | LS                                              |
| <i>Need<br/>Carefully<br/>Consider</i><br>The project would result in emissions of regional pollutants (i.e., pollutants which affect the entire San Francisco air basin) exceeding 150 lbs. per day for two precursors of ozone (reactive organic gases, and oxides of nitrogen). | S                                                  | Project impacts on regional air quality could be reduced, but not to less than significant levels, by locating one or more neighborhood commercial centers within the project; by provision of expanded pedestrian trail, bicycle and transit facilities within the project to encourage alternative transportation options; and by restricting the number of fireplaces and woodstoves per household, and/or by requiring use of EPA-certified woodstoves or fireplace inserts. | Project                      | SU                                              |
| <b>CULTURAL RESOURCES</b>                                                                                                                                                                                                                                                          |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |                                                 |
| Project and grading could damage prehistoric or historic resources located around the Rogers Ranch complex.                                                                                                                                                                        | S                                                  | An archaeologist (familiar with the history of the site) should be present to monitor site clearing and grading to identify and remove any significant in this area and 19th century artifacts discovered in this process. All known and discovered historic resources should be catalogued and described in a summary archaeological report which would constitute preservation of the site's cultural resources in written form.                                               | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact



| Impacts                                                                                                                                                                                                        | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| Project grading and construction could also damage prehistoric and/or historic resources at the Highway 4/Isolate 1 location.                                                                                  | S                                                  | This location should be mechanically tested under the supervision of a qualified archaeologist for any evidence of buried prehistoric deposits <u>before project grading and construction</u> begin. If any resources are discovered, construction should be halted and further evaluation through hand excavation should occur to assess the significance of the finds and to formulate necessary further mitigation measures.                                           | Project                      | LS                                              |
| Project grading and construction could damage prehistoric and historic resources at the Alvernaz Ranch Complex location.                                                                                       | S                                                  | Historic research and an architectural evaluation for this location, plus backhoe testing, should be completed by qualified cultural resource professionals before any grading or construction begins. The results of the research should be preserved in written form. In addition, if any resources are discovered during the backhoe testing, a specific archaeological mitigation program should be formulated for this location depending on the nature of the find. | Project                      | LS                                              |
| Project grading and construction could also damage prehistoric and historic resources at the identified possible barn/structure location along the minor drainage channel in the northeast corner of the site. | S                                                  | The mitigations described above for the Alvernaz Ranch Complex location should also be implemented for this location.                                                                                                                                                                                                                                                                                                                                                     | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| <b>PUBLIC HEALTH AND SAFETY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                 |
| <i>Electrical Transmission and Distribution Line Impacts</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                 |
| To date, there is no conclusive evidence regarding the possible health risks from power line EMF exposure. However, there is the potential that project residents could be exposed to power line EMFs that could adversely affect their health. There are approximately 73 lots or units proposed within 150 feet of the edge of the 230 kV PG&E transmission line easement and approximately 77 units or lots located within 100 feet of the PG&E 115 kv line easement. Future occupants of these units could be exposed to potential health risks related to prolonged EMF exposure. | S                                                  | <p>Although no specific setback or other criteria exists beyond conventional PG&amp;E easement boundaries, the following measures are suggested in this SEIR, based primarily on current state standards for school facilities:</p> <p><i>Setbacks.</i> The applicant should endeavor to redesign the project such that proposed residential lots should be located at least 150 feet from the edge of the 87.5-foot 230 kV transmission line easement and 100 feet from the edge of the 50-foot 115 kV transmission line easement. This measure would require the relocation of up to an estimated 150 proposed residential lots and units.</p> <p><i>Disclosure.</i> Prospective project residents of all project homes within 200 feet of the 230 kV line, 150 feet of the 115 kV line, and 100 feet of the 69 kV line <u>easement edges</u> should be notified in writing by the applicant of the potential EMF health risks associated with such lines. This could be achieved by requiring the project proponent to include such disclosures in</p> | Project                      | Unknown                                         |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                               | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                       |                                                    | the sales and rental materials to be signed by future project residents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |                                                 |
| <i>Natural Gas Well Hazard Impacts</i>                                                                                                                                                                                                                                                                                |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |                                                 |
| The applicant plans to abandon the existing gas wells as the project is developed. Unless these gas wells are abandoned to current Department of Oil and Gas (DOG) standards specified in Section 1723 of Title 14 of the California Code of Regulations, future residents could be subject to the risk of explosion. | S                                                  | <p>The following two mitigation measures should be implemented to reduce natural gas well hazard impacts to a less than significant level:</p> <p><i>Remediation.</i> Pursuant to Section 3208.1 of the Public Resources Code, the applicant would be required to contact DOG's Woodland district office to determine whether wells have been abandoned to current abandonment standards (as required in Section 1723 of Title 14 of the California Code of Regulations), and whether additional remedial work on a particular well would be necessary.</p> <p><i>Avoid Abandoned Wells.</i> Revise the site plan to avoid construction of residential units over the wells. If avoidance is not possible, a State Division of Oil and Gas (DOG)-approved vent systems should be installed to collect and disperse any gas vapors that may be emitted from the wells.</p> | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                      | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                           | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| <i>Natural Gas Well Access Impacts</i>                                                                                                                                                                                                       |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |                                                 |
| Early phases of development could block access to gas wells located in portions of the site that would be developed in latter phases of the project, a potentially significant impact assuming that there is additional gas to be extracted. | S                                                  | Adequate access to the active well sites should be maintained. Access should be wide enough to allow large mobile rigs to access the active well sites.                                                                                                                                                                                                                                                                                                       | Project                      | LS                                              |
| <i>Natural Gas Well Noise Impacts</i>                                                                                                                                                                                                        |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |                                                 |
| Noise associated with gas well compressors operating near earlier phases of development could disturb project residents. This could result in significant noise impacts prior to project build-out.                                          | S                                                  | Noise from compressors used on gas wells that could adversely affect project residents should be reduced by implementing the following measures:<br><br><i>Limit Hours of Operation.</i> Limit noise-generating pumping activities near project residences to daytime, weekday (non-holiday) hours (8:00 AM to 5:00 PM).<br><br><i>Shield Equipment.</i> Shield stationary noise-generating equipment with plywood barriers in order to reduce noise impacts. | Project                      | LS                                              |
| <i>Natural Gas Pipeline Impacts</i>                                                                                                                                                                                                          |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |                                                 |
| PG&E has a ten-foot natural gas pipeline easement at the southwestern corner of the site. Ranchette Lot 1268 proposed in Village                                                                                                             | S                                                  | Ranchette Lot 1268 in Village N at the southwestern corner of the site should include the necessary building setback and other                                                                                                                                                                                                                                                                                                                                | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

| Impacts                                                                                                                                                                                                                                                                                                                                                                     | Potential<br>Significance<br>Without<br>Mitigation | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mitigation<br>Responsibility | Potential<br>Significance<br>With<br>Mitigation |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------|
| N in the southwestern portion of the site would encroach into this pipeline easement.                                                                                                                                                                                                                                                                                       |                                                    | limitations necessary to avoid encroachment into PG&E's gas pipeline easement.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                 |
| <i>Fuel Storage Tank Impacts</i>                                                                                                                                                                                                                                                                                                                                            |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |                                                 |
| A small fuel storage tank is located near one of the existing natural gas wells in the northern portion of the site. If fuel spills or leaks have occurred and soil around the tank is contaminated, construction workers could be exposed to contamination during project site preparation work and future residents could be exposed to contamination over the long-term. | S                                                  | The fuel storage tank should be removed, the soils around the tank should be tested for contamination and, if necessary, the soil cleaned to ensure that it is devoid of any contamination from the tank. If contaminated soils are discovered, a remediation plan should be submitted to and approved by the Toxic Substances Control Division of the California Environmental Protection Agency (Cal-EPA). Implementation of an approved remediation plan would be expected to reduce impacts to a less than significant level. | Project                      | LS                                              |

S = Significant  
LS = Less than significant  
SU = Significant unavoidable impact

## E. SUMMARY OF ALTERNATIVES

Chapter VI of this EIR examines the comparative merits of a number of alternatives to the proposed action, including: (1) the CEQA-required ***no project alternative***, which assumes continuation of the present use of the site; (2) an ***alternative residential breakdown and layout*** that also includes a total of 2,938 units, but with a change in unit type breakdown and layout to accommodate a broader housing market, including more emphasis on upscale, move-up, "executive" housing and larger lot development in the upland areas, with corresponding increases in residential density in the lower areas near the freeway; (3) a ***mitigated residential alternative*** that would involve development of the site with a 2,938-unit residential scheme similar in housing type breakdown to the proposed project, but with modifications to the residential layout, circulation system design, and associated grading plan to reduce identified adverse environmental impacts; and (4) a ***reduced-intensity alternative*** that includes an overall reduction in the number of project units by 50 percent as a means of reducing project land use, transportation, geotechnical, visual, biotic, municipal service, noise, air quality, and miscellaneous hazard impacts.

In response to CEQA guideline provisions calling for identification of the environmentally superior alternative, the comparative environmental impact ratings of the various project alternatives evaluated in Chapter VI are listed below. *Please note that only "environmental" factors were considered in this ranking. Other considerations, such as local and regional housing needs, economic viability, and landowner intentions were not considered.*

***Highest Environmental Ranking***  
***(most environmentally desirable)***

***No Project Alternative***

***Reduced Intensity Residential Alternative***

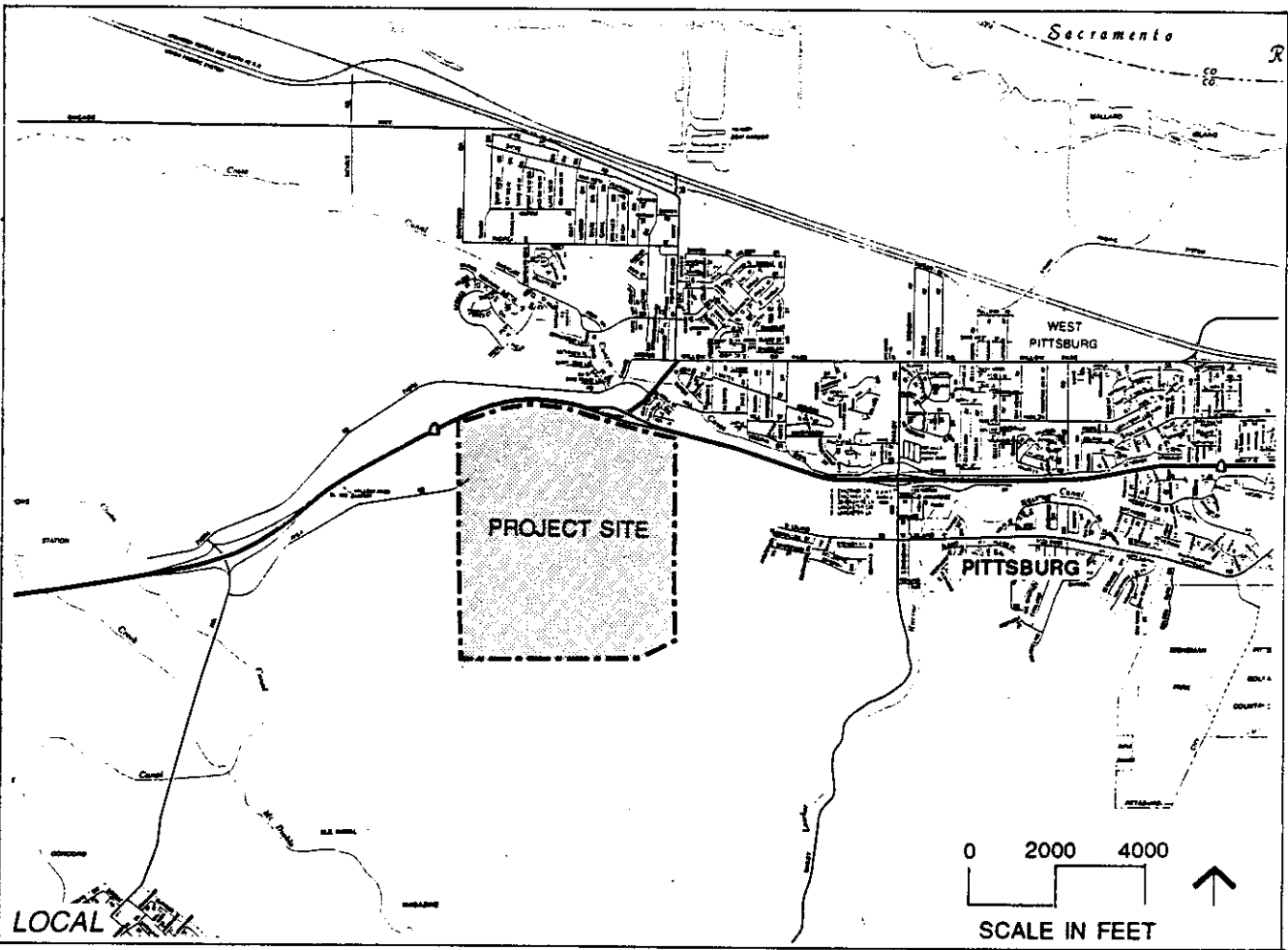
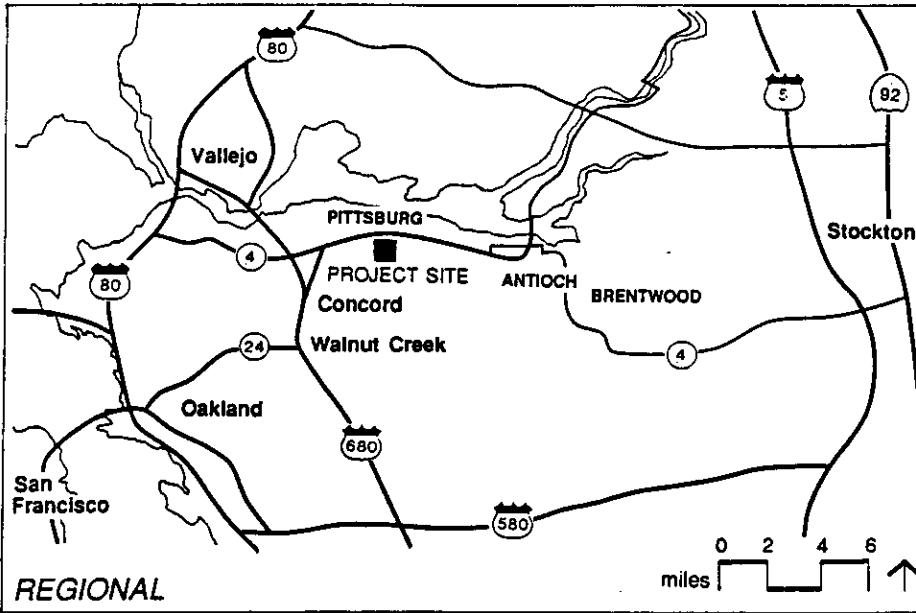
***Alternative Residential Breakdown and Layout***

***Mitigated Residential Alternative***

***Lowest Environmental Ranking***  
***(least environmentally desirable)***

***Proposed Project***

### **III. PROJECT DESCRIPTION**



Basic map reproduced by permission of the California State Automobile Association, copyright owner.

**Figure 1**  
**LOCAL AND REGIONAL SETTING**

San Marco Project City of Pittsburg



---

### III. PROJECT DESCRIPTION

---

This chapter describes the proposed actions or "project" addressed by this EIR. The project description is based on materials submitted by the applicant to the city as part of the project application and on subsequent communications between the EIR authors and the applicant. The description has been detailed to the extent needed for evaluation and review of environmental impacts. As called for by state CEQA Guidelines, the description includes: (a) the location and boundaries of the project, (b) a statement of the basic objectives sought by the project, (c) a description of the project's physical and technical characteristics (i.e., lot and circulation layout, external access, building design, parking, grading, storm drainage, water, sewer, landscaping, etc.); (d) the various permits and jurisdictional approvals required to allow the project; and (e) the intended uses of this EIR.

#### A. EXISTING SETTING

##### 1. Regional Location

As illustrated in Figure 1, the project is located in the southwest portion of the City of Pittsburg in central Contra Costa County, approximately 10 driving miles east of the City of Martinez. State Highway 4 provides regional and local access to the site. The City of Concord is also located to the southwest, and the City of Antioch is located to the east on Highway 4.

##### 2. Local Setting

As illustrated in Figure 2, the site is immediately south of the Willow Pass Road interchange on Highway 4 near the westernmost edge of the Pittsburg city limits. The site is approximately four driving miles west of downtown Pittsburg. Across Highway 4 to the north are the unincorporated residential communities of Shore Acres and West Pittsburg, both of which are within the City of Pittsburg's general plan planning area and LAFCO<sup>1</sup>-designated Sphere of Influence.<sup>2</sup> The portions of these communities nearest the project site

---

<sup>1</sup>LAFCO = Contra Costa County Local Agency Formation Commission

<sup>2</sup>A city's Sphere of Influence is defined in state law as the area which is expected to ultimately be annexed and served by the city.

contain primarily single-family residential subdivisions ranging in age from approximately two to 40 years, as well as several mobile home parks.

The project vicinity on the south side of Highway 4 is primarily undeveloped hillside rangeland with a few scattered rural residential and accessory ranch structures. As shown on Figure 2, the project lies approximately 1.5 miles south of Suisun Bay. The site is part of the range of foothills that rises above the Suisun Bay lowlands. The property ranges in elevation from approximately 150.5 to 867.0 feet above the Bay. The surrounding hill range reaches elevations of approximately 860 feet immediately south of the project site and 1,460 feet at one peak further to the southwest.

As shown on Figure 2, substantial urbanization has recently occurred within southwest Pittsburg along the lower portions of the foothills to the east of the project site (e.g., community commercial development along Bailey Road and the 442-unit, 87-acre Oak Hills residential subdivision. Additional urbanization in these areas is anticipated in the near future (e.g., the pending 477-unit, 211-acre Oak Hills South subdivision, and anticipated residential development of the adjacent 293-acre Alves property).

West of the project is the approximately 25-acre DeBonneville property, a rolling grassland equestrian ranch containing rural residences and other outbuildings; the 101-acre Ridge Farms property containing a variety of equestrian, trucking, construction yard, and other rural uses; and the U.S. Navy's Concord Naval Weapons Station. The hills above and to the south of the project site contain large holdings of rangeland, including the adjacent 442-acre Seecon property. The open lands south of the project site also include federally-controlled areas which are part of the weapons station.

### 3. General Site Characteristics

Existing conditions on the project site itself are illustrated on Figures 3 and 4. The 639-acre site currently consists of hilly grassland used primarily for cattle grazing. Approximately 370 acres of the project site are currently under a Williamson Act Agricultural Preserve contract which is scheduled to expire in 1997.<sup>1</sup> Other uses on the site include a

---

<sup>1</sup>A 200-acre figure for onsite Williamson Act contract land is cited in a letter from Stephen E. Oliva, Environmental Program Coordinator, Department of Conservation, to Randy Jerome, Senior Planner, City of Pittsburgh, August 21, 1991. However, examination of actual parcel lines by the EIR authors indicates that the contract area (the previous Culbertson ownership) is actually approximately 370 acres. As explained in more detail in the Land Use section of this EIR (IV.A.1), this portion of the property was granted Agricultural Preserve status by the county in 1970 under the provisions of the state Williamson Act. Since then, the current landowner has requested withdrawal of this portion of the site from Agricultural Preserve status. The 10-year cancellation period ends in February of 1997 according to information from the County Assessor. (See Figure 11 in the Land Use section of this EIR.)



**Photo 1.** View southeast towards the site from Evora Road.

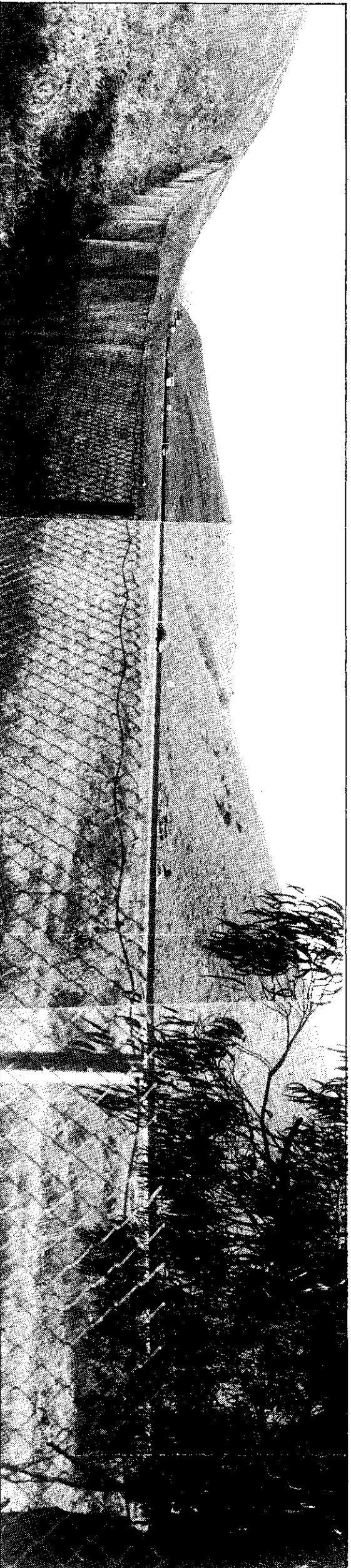


**Photo 2.** View east towards the site from the north side of Highway 4.

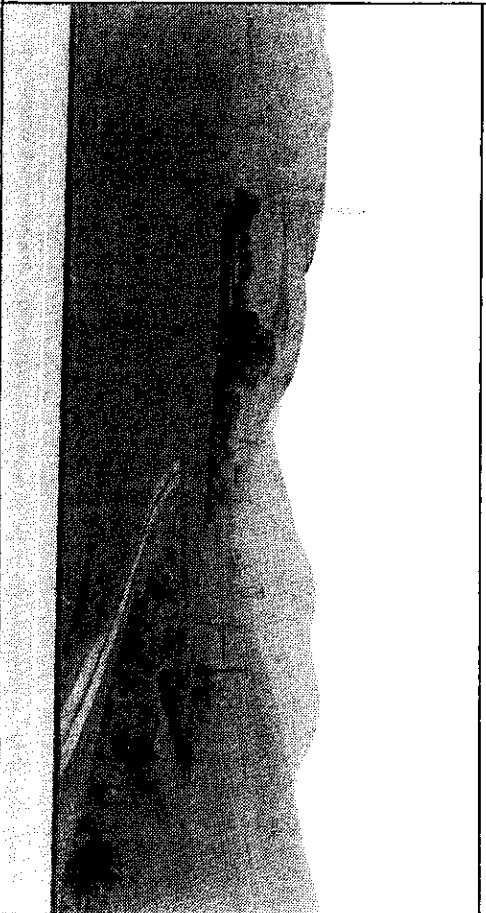


**Photo 3.** View south into the site from Highway 4, showing the Alvernaz Ranch complex and associated vegetation along lower reach of Shore Acres Creek, and the PG&E transmission lines in the background.

small ranch complex (the Alvernaz Ranch) and associated residential and farm structures, and three active natural gas well sites. These existing uses and the site's potential for agricultural production are further described in the Land Use chapter of this EIR (section IV.A.1).

As shown on Figure 4, the site topography includes rolling foothill slopes and terraces dominated by three drainage courses that generally trend northerly between intervening hills and ridges. The largest of these drainage courses is Shore Acres Creek, a stream which extends from the hills above the site down to Suisun Bay. Onsite downstream segments of this stream are considered to be perennial; onsite upstream segments are intermittent. There are also two existing stock ponds on the property--one on Shore Acres Creek and one on one of its tributaries. A more detailed description of the site's drainage characteristics is included in section IV.E of this EIR (Drainage and Water Quality).

Existing elevations range from 150.5 feet near the northeast corner of the site to 867.0 feet near the top of a ridge in the southwest quarter of the site. Slopes range from less than five percent in the lower flat portions of the site and on some of the existing terraces to as steep as 60 percent along some of the upper ridges. Some bedrock outcrops on the site contain slopes which are almost vertical. A more detailed description of the site's topographic, geologic, and soil conditions is included in section IV.D of this EIR (Geology and Soils).

Site vegetation is almost exclusively grassland, with some riparian vegetation along lower segments of the drainage channels, most extensively along Shore Acres Creek. Some introduced trees and shrubbery occurs around the existing farm complex. A detailed description of the site's existing vegetation and wildlife resources is included in section IV.G of this EIR (Vegetation and Wildlife).

There are also several utility easements which traverse the property, as shown on Figure 4. Pacific Gas & Electric (PG&E) holds a 137.5-foot wide transmission line easement running in a northwest-southeast direction across the site. This PG&E easement contains two parallel electrical transmission tower lines--a 230 kilovolt (kV) line and a 115 kV line. The 230 kV line is strung on approximately 400-foot high steel truss towers spaced at approximately 1,800-foot intervals. The 115 kV line is strung on approximately 200-foot high steel truss towers spaced at approximately the same intervals (the Land Use section of this EIR includes a ground level photograph of these two parallel tower lines). PG&E also holds a small natural gas line easement in the southwest corner of the site.

In addition, the United States of America (USA) holds a 50-foot electrical transmission line easement running in a southwest-northeast direction through the center of the site, as also shown on Figure 4. This easement contains a 69 kV transmission line strung on 100-to-200-foot high wooden "H-beam" poles (see photo in Land Use chapter). Pacific Telephone



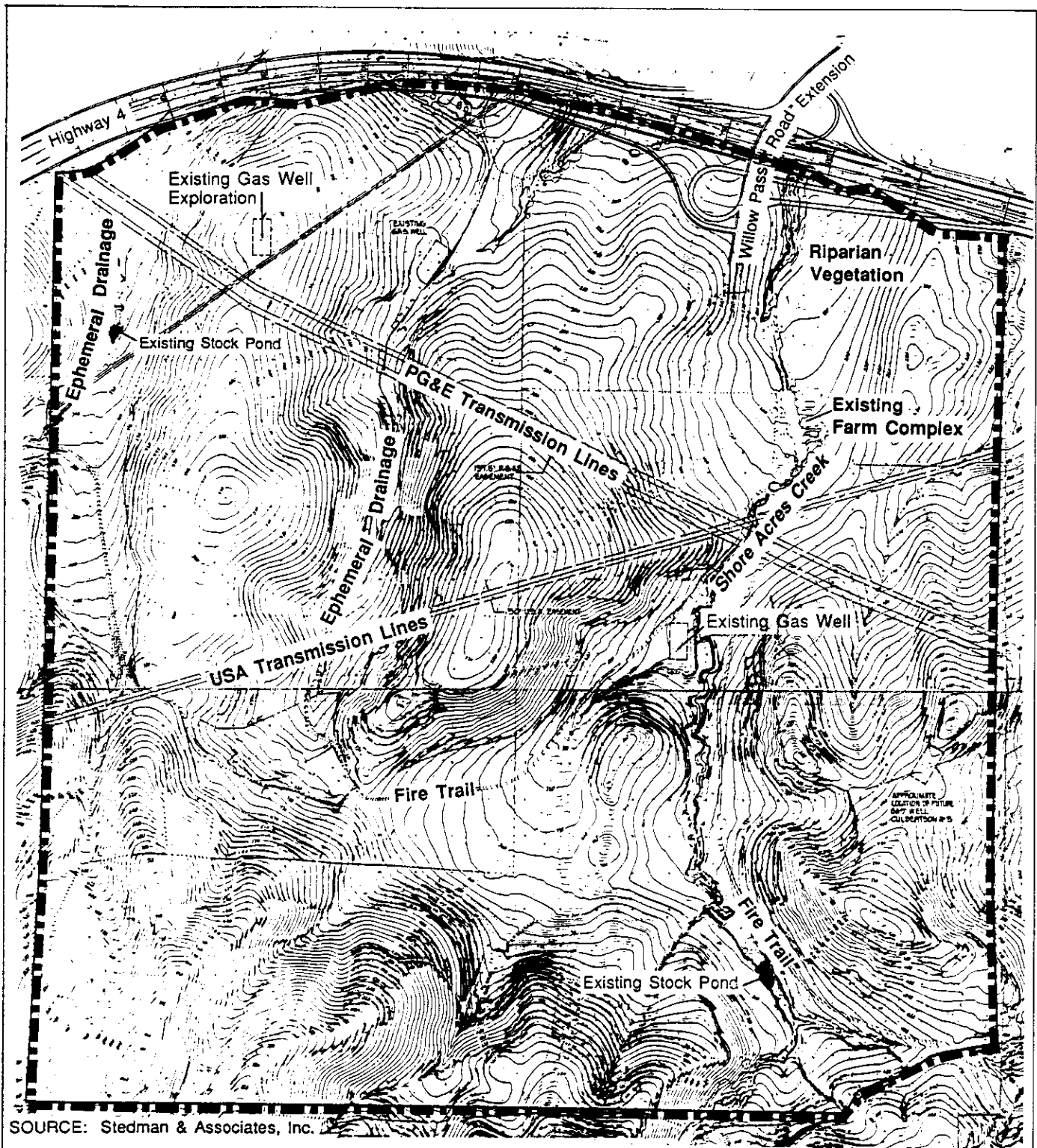
Figure 3

**EXISTING SITE FEATURES  
(AERIAL PHOTOGRAPH)**

SCALE IN FEET  
0 300 600 900



San Marco Project City of Pittsburgh



#### LEGEND

■ ■ ■ PROJECT SITE BOUNDARY

SCALE IN FEET

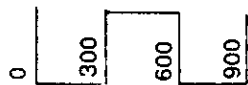


Figure 4  
**EXISTING SITE FEATURES  
(TOPOGRAPHIC MAP)**

San Marco Project City of Pittsburg

and Telegraph (PT&T) holds a 20-foot wide easement which crosses the northwest portion of the site in a northeast-southwest direction.

These various electrical, natural gas, and telephone easements and their impact implications are discussed in greater detail in sections IV.A (Land Use) and IV.L (Public Health and Safety) of this EIR.

## **B. BASIC PROJECT OBJECTIVES**

The basic objectives of development plan formulated by the project proponent, the Seecon Financial & Construction Company, Inc. and North State Development Company, are to create and construct a residential subdivision of production homes which responds to anticipated market demands for reasonably priced single-family detached and attached homes in a high-amenity hillside setting overlooking Suisun Bay, with convenient proximity to the planned new West Pittsburgh BART station and planned Highway 4 improvements, and with good access to local community services.

## **C. PROPOSED PHYSICAL CHARACTERISTICS**

### 1. Overall Development Concept

The proposed project development plan is shown on Figure 5.<sup>1</sup> The preliminary subdivision layout consists of 1,363 single-family detached homes and 1,575 multi-family residential units in 13 "villages" (A through H, and J through N). The project would also include one 36-acre community park; two community recreation sites of approximately three and five acres, respectively; three smaller village parks (i.e., less than one acre each), and a pedestrian trail system. In addition, approximately 95 acres of the steepest and highest ridges in the southern portion of the property would be designated as permanent open space, as generally called for by the Pittsburg General Plan Land Use Map.

Eight of the 13 villages--D through H and J through L--would contain suburban density single-family-detached homes on lots ranging in size from 4,050 square feet (0.09 acre) to 41,900 square feet (0.96 acre). Two of the 13 villages--A and N--would contain large lot or "ranchette" residential parcels ranging in size from 6,000 square feet (0.14 acre) up to approximately 23 acres. Three of the 13 villages--B, C, and M--would contain attached, multi-family homes in both townhome and apartment building forms.

---

<sup>1</sup>Figure 5 is a photo-reduced composite prepared by Wagstaff and Associates which combines two development plan exhibits prepared by the project proponent's architects and civil engineers--one for Villages A, B, C, and M, and one for Villages D through H, J through L, and N.



Nine of the single-family-detached villages would be located in the upland areas of the site above and south of the two parallel PG&E electrical transmission lines. One of the single-family-detached villages, Village A, would be located north of the transmission lines at the northeast corner of the site (bounded by Highway 4, and the proposed extensions of Willow Pass Road and Leland Road). The three multiple-family villages would also be located in the lower, northern portion of the site between the PG&E transmission lines and the freeway.

Gross densities in the various single-family-detached villages would range between 3.1 and 5.5 units per acre for nine of the single-family villages, and 0.4 units per acre for the one "ranchette" neighborhood (N) at the upper, southwest corner of the site. Gross densities for the multi-family villages would range from 5.3 units per acre for the one "townhome" neighborhood (village C) to 16.1 and 16.9 units per acre for the two "apartment" neighborhoods (villages B and M).

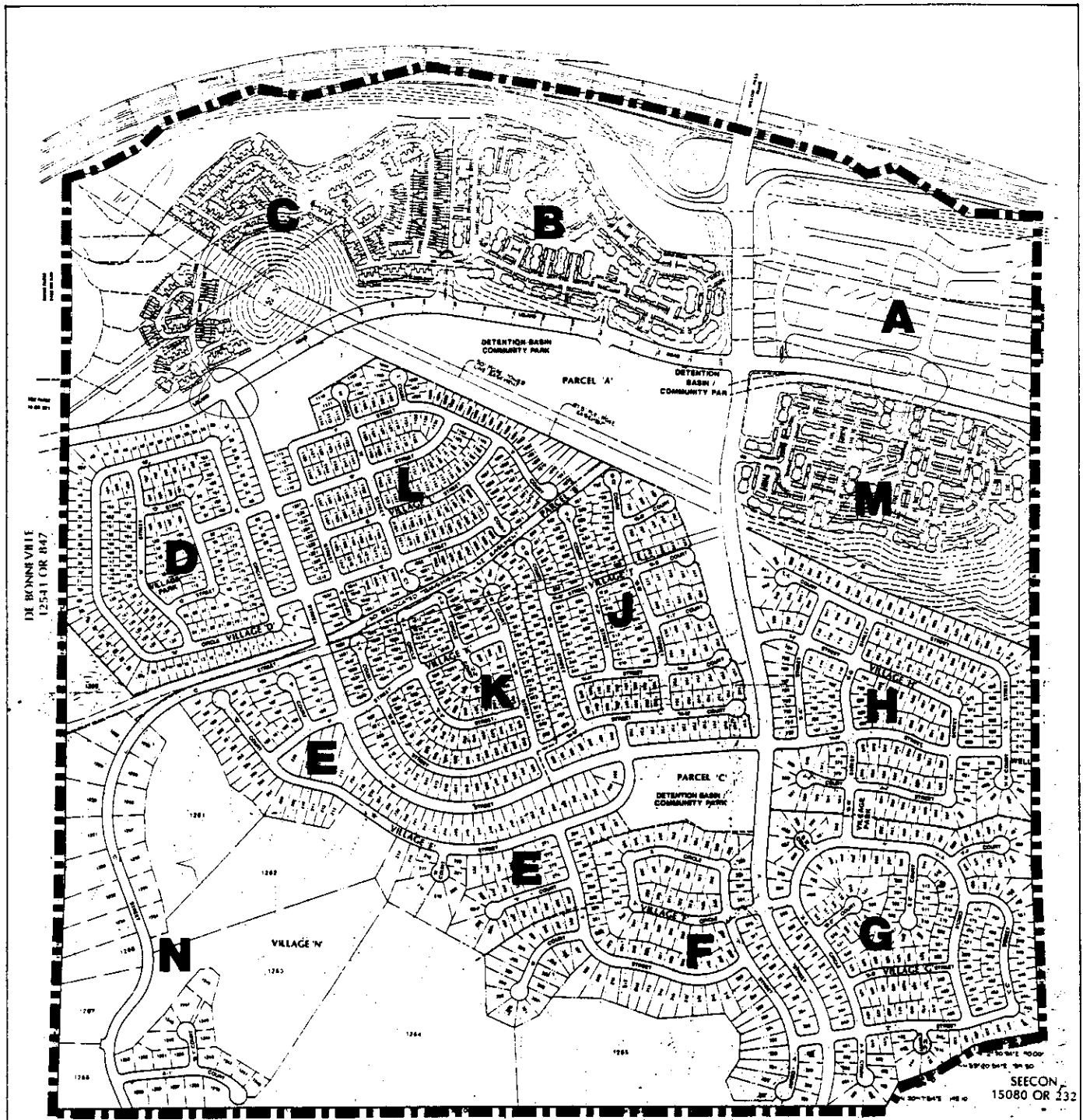
## 2. Vehicular Access and Internal Circulation

The 13 Villages would be served by an internal road system of arterial, collector, and local streets, with its own direct connections to Highway 4, Willow Pass Road, and Leland Road.

a. External Access. Caltrans-planned improvements to Highway 4 along the site frontage include reconstruction of the Highway 4/Willow Pass Road interchange to provide improved freeway access to the West Pittsburg and Shore Acres communities and to southwest Pittsburg via a new southerly extension of Willow Pass into and, ultimately, beyond the project site. The project segment of the Willow Pass Road arterial extension would be "stubbed" at the southern boundary of the project so that the route could eventually be extended through lands south of the San Marco site to connect with Bailey Road (see Figure 1).

Arterial access to the project would also be provided via eventual extension of West Leland Road from its current terminus east through the Alves property and the project site to connect with Avila Road which currently runs from Willow Pass Road in Concord to a dead end at the project's western boundary (see Figure 2). The project segment of the Leland Road extension would extend from the current terminus of Avila Road at the western boundary of the project through the site to a "stub" at the east boundary of the property. The applicant anticipates that the other segment necessary to complete the interconnection with the current terminus of West Leland Road would be completed as part of the





SOURCE: Stedman & Associates, Inc.

Figure 5  
**DEVELOPMENT PLAN**

San Marco Project City of Pittsburgh

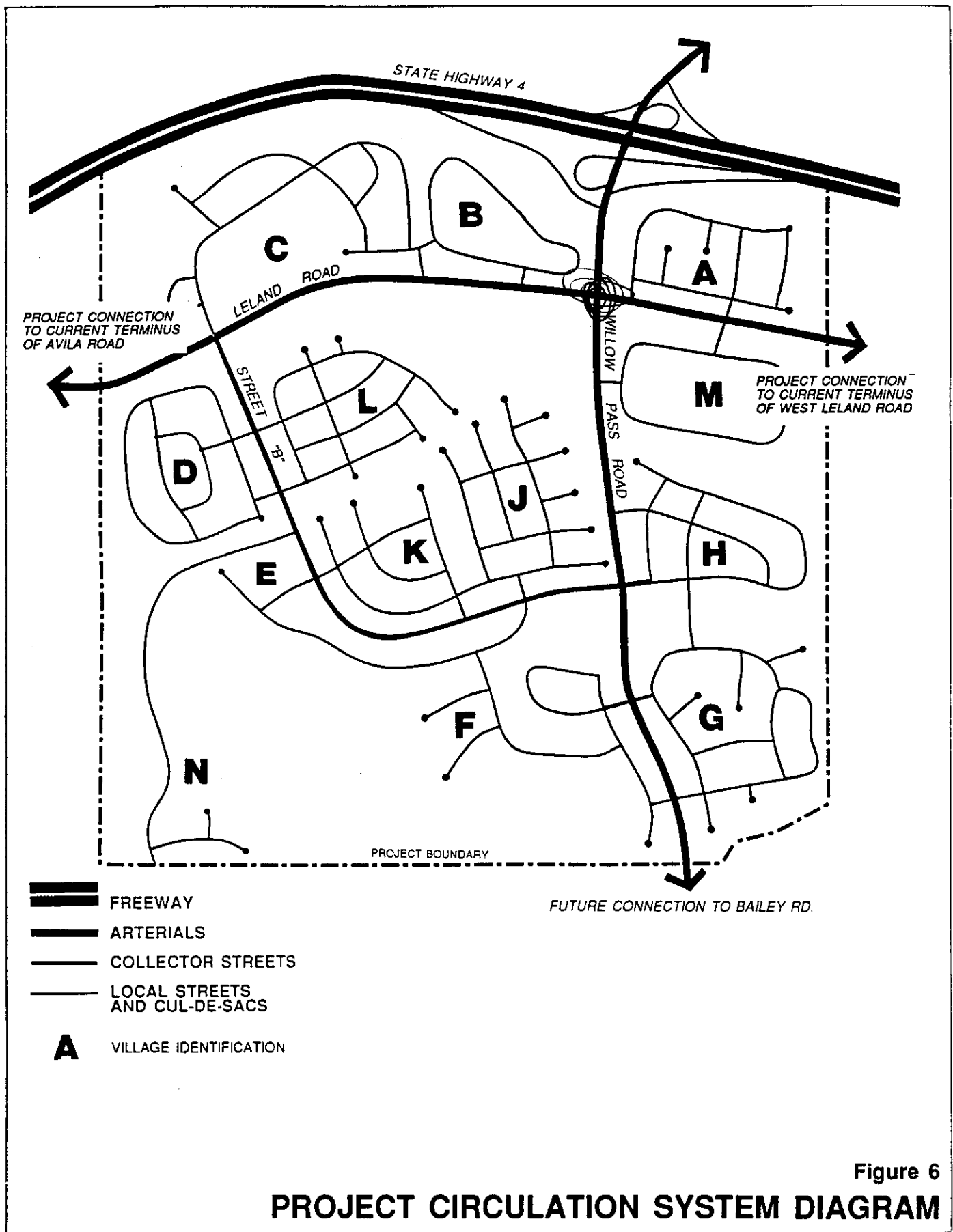


Figure 6

# PROJECT CIRCULATION SYSTEM DIAGRAM

San Marco Project City of Pittsburg

r anticipated future development of the adjacent Alves property. This connection has not  
r been included in the project description because the applicant currently has no control over  
r the Alves property. Nevertheless, City staff has indicated that this interconnection must be  
completed prior to occupancy of the San Marco project.<sup>1</sup>

**b. Onsite Roadway Layout.** The proposed internal project roadway system is diagrammed on Figure 6. Associated roadway cross-sections are shown on Figure 7. The system would contain the two arterial extensions (i.e., the extensions of Willow Pass Road and West Leland Road), an additional collector loop ("Street B"), and a secondary network of internal local streets, cul-de-sacs, and driveways. Street "B" would function as a collector road through the center of the site interconnecting Willow Pass Road and Leland Road.

Each of the 13 villages would be served by its own neighborhood loop street system connecting directly to one of the two arterials and/or to the Street "B" collector. Villages A, B, and C would be served by a neighborhood loop street system connecting to Leland Road. Village M would be served by an internal loop system connecting with Leland and Willow Pass roads. Villages H and G would be served by a loop system connecting to Willow Pass Road. Villages D, L, K, J, and N would be served by loop systems connecting to collector street "B." The various internal loop road systems serving each village would be comprised of a network of curvilinear neighborhood streets and cul-de-sacs.

The internal roadway system would include one arterial-arterial intersection (Willow Pass Road/Leland Road), two collector-arterial intersections (Street "B"/Willow Pass and Street "B"/Leland), and eight local street-arterial intersections (four along Leland Road and four along Willow Pass Road).

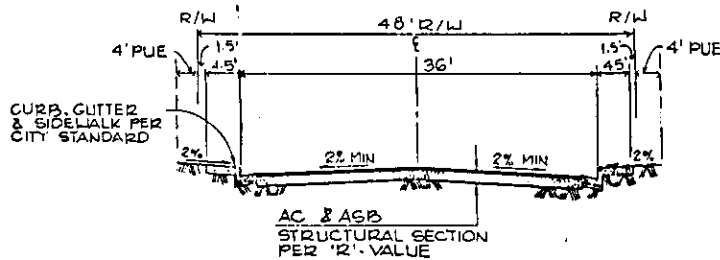
#### 4. Proposed Villages and Lot Layouts

The proposed layout of the 13 residential villages is shown on Figures 5 and 6. Table 2 provides a breakdown of the anticipated residential characteristics of each village.

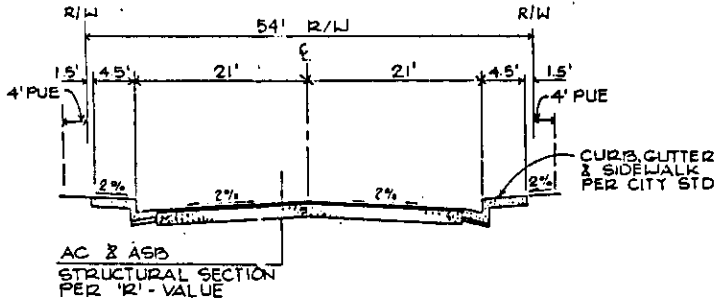
**a. Single-Family Villages.** As described earlier, ten of the project's 13 villages would contain single-family-detached homes (villages A, D, E, F, G, H, J, K, and N). Eight of these ten single-family-detached villages would be developed at "suburban densities" ranging from 3.2 to 5.5 units per acre (gross). These eight suburban density villages (i.e., D, E, F, G, H, J, K, L) would be located in the upper central and eastern portions of the site away from the freeway. The number of residential lots in these eight upland suburban density villages would range from 110 to 179 each. Lot sizes would range from 4,050 to 41,900 square feet (0.09 to 0.96 acres). The eight villages would be laid out in hillside tiers

---

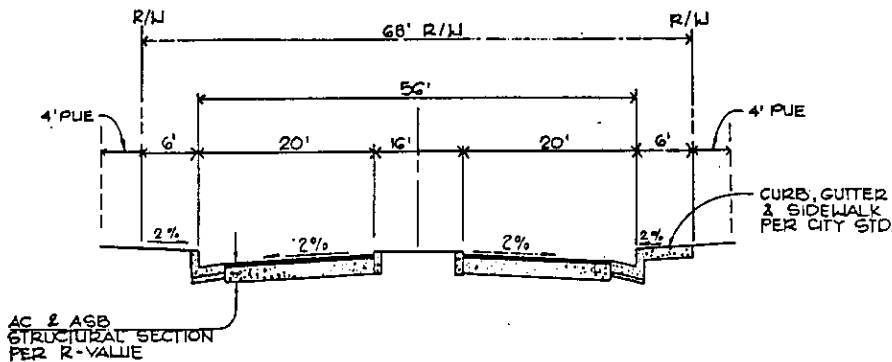
<sup>1</sup>May 6, 1992 memorandum from Alfredo Hurtado, Assistant Civil Engineer, to Nasser Shirazi, Assistant City Engineer, City of Pittsburgh.



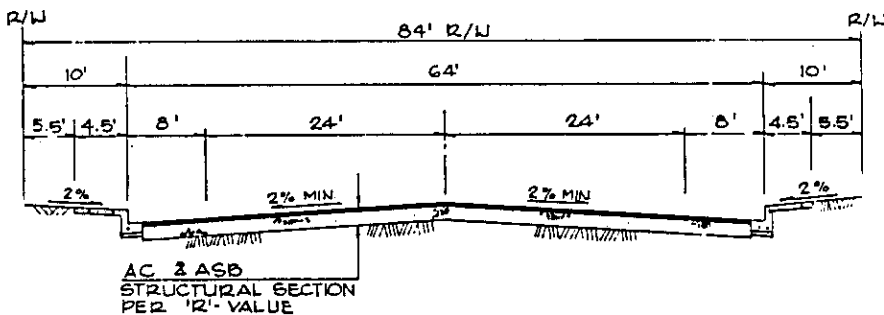
**LOCAL STREET  
(48' RIGHT OF WAY)**



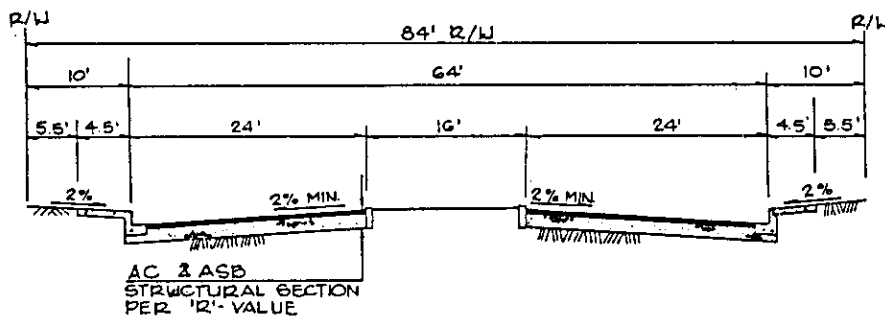
**LOCAL STREET  
(54' RIGHT OF WAY)**



**STREET "B" COLLECTOR  
(68' RIGHT OF WAY)**



**ARTERIAL:  
LELAND ROAD  
(84' RIGHT-OF-WAY)**



**ARTERIAL:  
WILLOW PASS ROAD  
(84' RIGHT-OF-WAY)**

SOURCE: Stedman Associates, Inc.

Figure 7

## PROPOSED ROAD IMPROVEMENT CROSS SECTIONS

San Marco Project City of Pittsburg

Table 2  
CHARACTERISTICS OF PROJECT VILLAGES

| <u>Land Use</u>                        | <u>Lot Number</u> | <u>Acres<br/>(Gross)</u> | <u>Number<br/>of Units</u> | <u>Percent<br/>of Land</u> | <u>DUI/AC</u> | <u>Average<br/>Lot Size</u> | <u>Minimum<br/>Lot Size</u> | <u>Maximum<br/>Lot Size</u> |
|----------------------------------------|-------------------|--------------------------|----------------------------|----------------------------|---------------|-----------------------------|-----------------------------|-----------------------------|
| <i>Suburban Density Single-Family:</i> |                   |                          |                            |                            |               |                             |                             |                             |
| Village "D"                            | 1-179             | 35                       | 179                        | 5.5                        | 5.1           | 6,400 SF                    | 4,050 SF                    | 15,812 SF                   |
| Village "E"                            | 180-290           | 35                       | 111                        | 5.5                        | 3.2           | 11,200 SF                   | 5,500 SF                    | 35,752 SF                   |
| Village "F"                            | 291-400           | 34                       | 110                        | 5.3                        | 3.2           | 11,100 SF                   | 6,000 SF                    | 41,900 SF                   |
| Village "G"                            | 401-562           | 42                       | 162                        | 6.6                        | 3.9           | 8,700 SF                    | 6,000 SF                    | 19,090 SF                   |
| Village "H"                            | 563-732           | 42                       | 170                        | 6.6                        | 4.0           | 8,210 SF                    | 5,500 SF                    | 24,806 SF                   |
| Village "J"                            | 733-902           | 32                       | 170                        | 5.0                        | 5.3           | 6,190 SF                    | 4,500 SF                    | 9,650 SF                    |
| Village "K"                            | 903-1036          | 25                       | 134                        | 3.9                        | 5.4           | 6,086 SF                    | 4,500 SF                    | 10,830 SF                   |
| Village "L"                            | 1037-1227         | 35                       | 191                        | 5.5                        | 5.5           | 5,770 SF                    | 4,500 SF                    | 15,620 SF                   |
| <i>Large-Lot Single Family:</i>        |                   |                          |                            |                            |               |                             |                             |                             |
| Village "A"                            | --                | 30                       | 94                         | 4.7                        | 3.1           | 11,000 SF                   | 6,400 SF                    | 13,600 SF                   |
| Village "N"<br>(Ranchettes)            | 1228-1269         | 105                      | 42                         | 16.4                       | 0.4           | 107,300 SF                  | 10,000 SF                   | 1,014,948 SF                |
| <i>Multi-Family:</i>                   |                   |                          |                            |                            |               |                             |                             |                             |
| Village "C" <sup>1</sup>               | --                | 64                       | 339                        | 10                         | 5.3           | --                          | --                          | --                          |
| Village "B" <sup>2</sup>               | --                | 34                       | 576                        | 5.3                        | 16.9          | --                          | --                          | --                          |
| Village "M" <sup>3</sup>               | --                | 41                       | 660                        | 6.4                        | 16.1          | --                          | --                          | --                          |
| <i>Common Features:</i>                |                   |                          |                            |                            |               |                             |                             |                             |
| Detention Basin/<br>Community Park     | "A"               | 36                       | --                         | 5.6                        | --            | --                          | --                          | --                          |
| Other <sup>4</sup>                     | --                | 49                       | --                         | 7.7                        | --            | --                          | --                          | --                          |
| TOTALS                                 |                   | 639                      | 2,938                      | 100.0                      | 4.6           |                             |                             |                             |

SOURCE: Wagstaff and Associates, Stedman & Associates, Inc., Jerry Loving Architects, Inc.

<sup>1</sup> Townhomes

<sup>2</sup> Apartments

<sup>3</sup> Apartments built to townhome standards

<sup>4</sup> "Other" includes internal rights of way, and small parks/recreation facilities

on curvilinear streets and cul-de-sacs which would be constructed following "mass" grading of the site. All of these suburban density single-family lots would have 20-foot minimum setbacks from the sidewalk, five-foot minimum side-yards, and 15-foot minimum rear yards.

The remaining two of the ten single-family-detached villages, villages A and N, would be distinguished from the other eight by location and lot size. Village A would be located in the northeast corner of the site adjacent to Highway 4, and would be the only village located below Leland Road containing single-family-detached homes. As shown on Figure 5 and Table 2, Village A would contain 94 units with a gross density of 3.1 units per acre and an average lot size of approximately 11,000 square feet (0.25 acres). Village N would be a "ranchette" neighborhood located in the southwest corner of the site near the highest elevation. This village would contain 42 lots averaging 107,300 square feet in size (approximately 2.5 acres), and would contain four lots (1261, 1262, 1263, and 1265) which would be roughly 20 acres in size.

b. Multi-Family Villages. The three project multi-family villages (villages B, C, and M) are all located in the lower portion of the site north of the PG&E transmission lines. Village B would contain 576 units in an array of approximately 36 two-story apartment structures. The gross density of the 34-acre village would be approximately 17 units per acre. Similarly, Village M would contain 660 units in approximately 33 two-story apartment structures, with a gross density of approximately 16 units per acre for the 41-acre area. Village C would include 339 two-story townhouse units in 60 structures on 64 acres, resulting in a village density of approximately 5 units per acre.

#### 5. Anticipated Home Design Characteristics

All project homes, except as described below, would be designed and constructed by Northstate Development and Seecon Financial and Construction, Inc.

a. Detached Single-Family Homes. Proposed preliminary design characteristics for the suburban density single-family components of the project are described in Table 3 and conceptually illustrated on Figure 8. The applicants have proposed 20 different residential designs ranging in floor area from 1,063 to 2,700 square feet. Each of the nine suburban density single-family villages would include a mix of four of these 20 designs, as shown in Table 3. The various proposed single-family home designs would contain three to four bedrooms, two to three baths, two-to-three-car garages, and one-to-two stories.

No proposed home designs have been submitted for the large-lot villages M or N. These villages will be developed with custom and semi-custom homes.

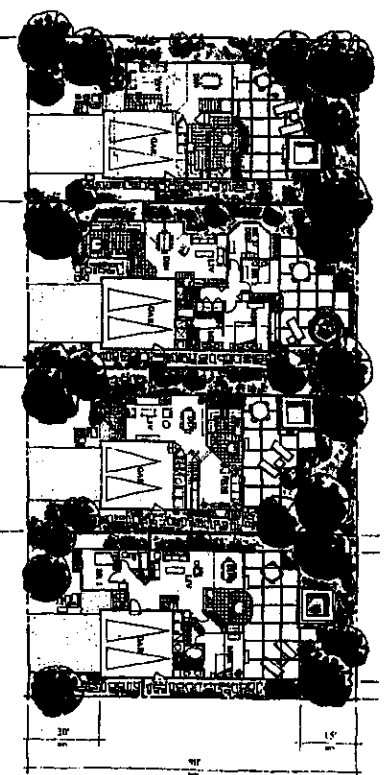
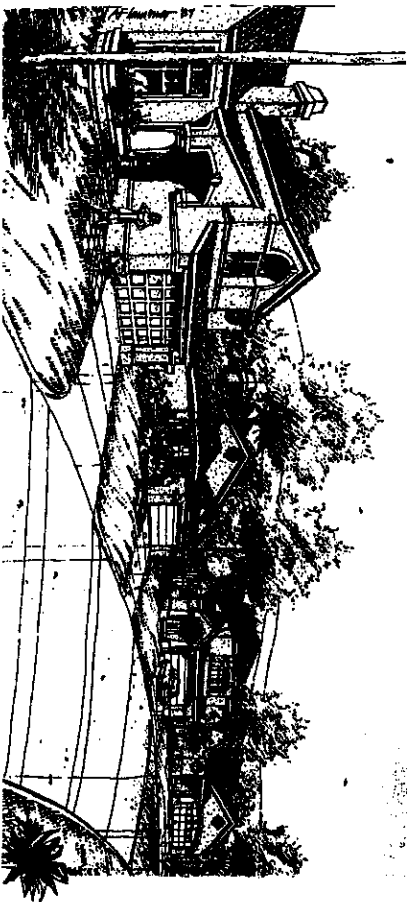
b. Attached Multi-Family Structures. Proposed preliminary designs for the multifamily components of the project are illustrated on Figure 9, including the townhome designs for Village C and the apartment building designs for villages B and M. The applicants have

Table 3  
PROPOSED SINGLE-FAMILY HOME CHARACTERISTICS

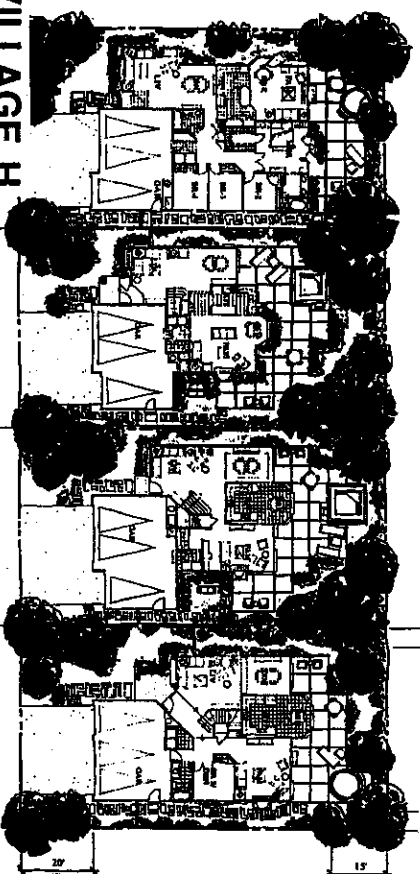
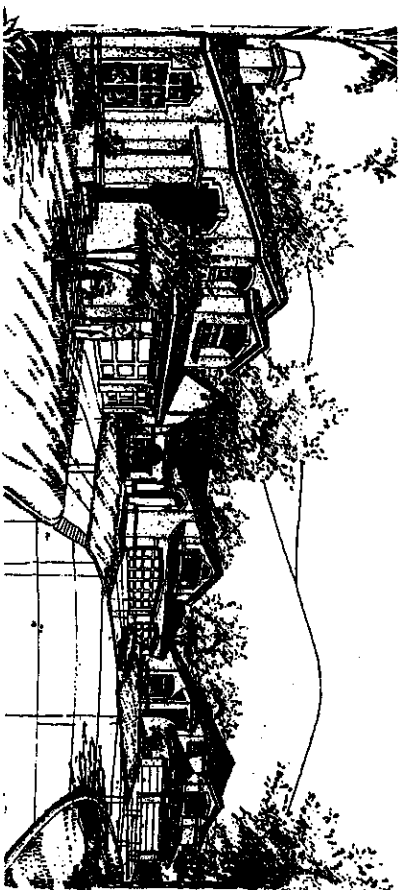
| Village<br>(See Figures<br>5 and 6) | Residential<br>Plan <sup>1</sup><br>(See Fig. 8) | Lot Size   |             | Number of<br>Bedrooms | Number of<br>Garaged<br>Spaces | Number of<br>Stories |
|-------------------------------------|--------------------------------------------------|------------|-------------|-----------------------|--------------------------------|----------------------|
|                                     |                                                  | Dimensions | Square Feet |                       |                                |                      |
| D                                   | 1063                                             | 45' x 90'  | 4,050       | 2                     | 2                              | 1                    |
|                                     | 1163                                             | 45' x 90'  | 4,050       | 3                     | 2                              | 1                    |
|                                     | 1404                                             | 45' x 90'  | 4,050       | 3                     | 2                              | 2                    |
|                                     | 1536                                             | 45' x 90'  | 4,050       | 3                     | 2                              | 2                    |
| E, H                                | 1700                                             | 55' x 100' | 5,500       | 4                     | 3                              | 1                    |
|                                     | 1900                                             | 55' x 100' | 5,500       | 4                     | 3                              | 2                    |
|                                     | 2200                                             | 55' x 100' | 5,500       | 4                     | 3                              | 2                    |
|                                     | 2445                                             | 55' x 100' | 5,500       | 5                     | 3                              | 2                    |
| F, G                                | 1850                                             | 60' x 100' | 6,000       | 4                     | 3                              | 1                    |
|                                     | 2100                                             | 60' x 100' | 6,000       | 4                     | 3                              | 2                    |
|                                     | 2350                                             | 60' x 100' | 6,000       | 4                     | 3                              | 2                    |
|                                     | 2700                                             | 60' x 100' | 6,000       | 5                     | 3                              | 2                    |
| J, K                                | 1450                                             | 50' x 90'  | 4,500       | 3                     | 2                              | 1                    |
|                                     | 1650                                             | 50' x 90'  | 4,500       | 4                     | 2                              | 2                    |
|                                     | 1900                                             | 50' x 90'  | 4,500       | 4                     | 2                              | 2                    |
|                                     | 2300                                             | 50' x 90'  | 4,500       | 4                     | 2                              | 2                    |
| L                                   | 1592                                             | 45' x 100' | 4,500       | 3                     | 2                              | 1                    |
|                                     | 1699                                             | 45' x 100' | 4,500       | 3                     | 2                              | 2                    |
|                                     | 1942                                             | 45' x 100' | 4,500       | 4                     | 2                              | 2                    |
|                                     | 2067                                             | 45' x 100' | 4,500       | 4                     | 2                              | 2                    |

SOURCE: Derived by Wagstaff and Associates from project description material provided by applicant.

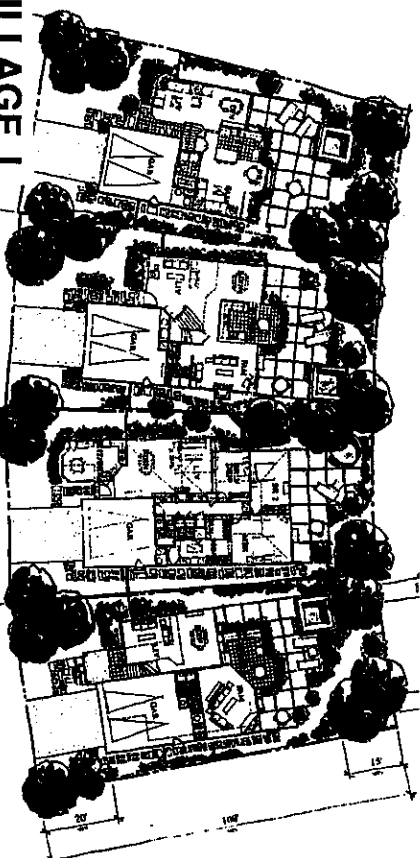
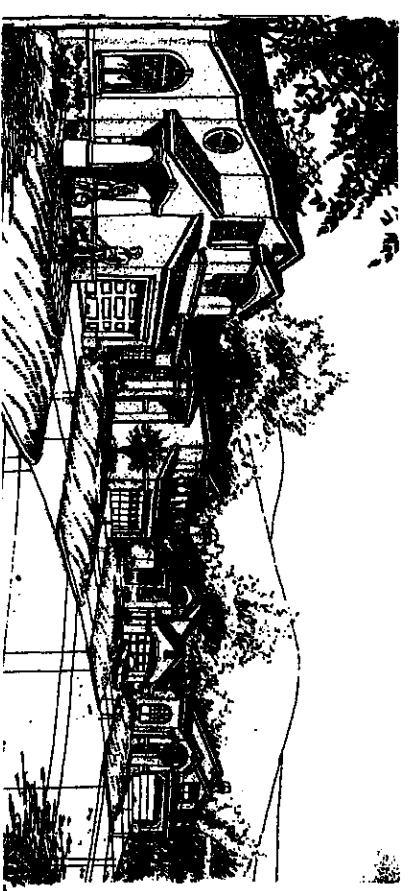
<sup>1</sup> Residential plan numbers correspond to approximate square footages of floor area.



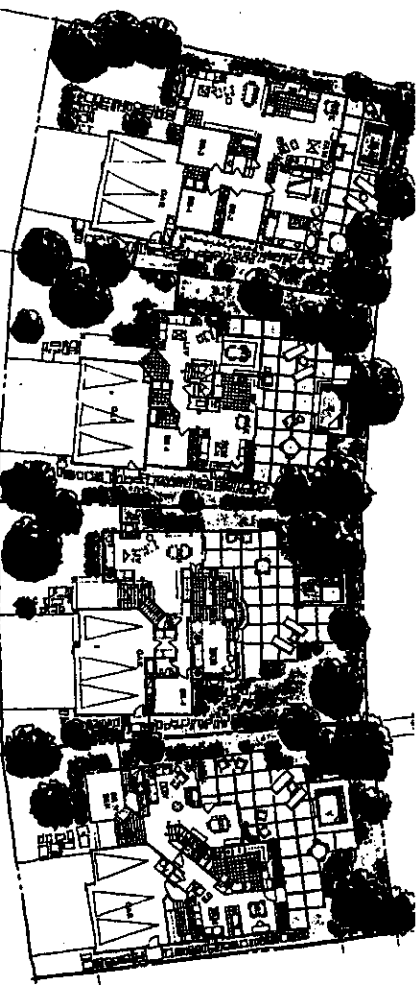
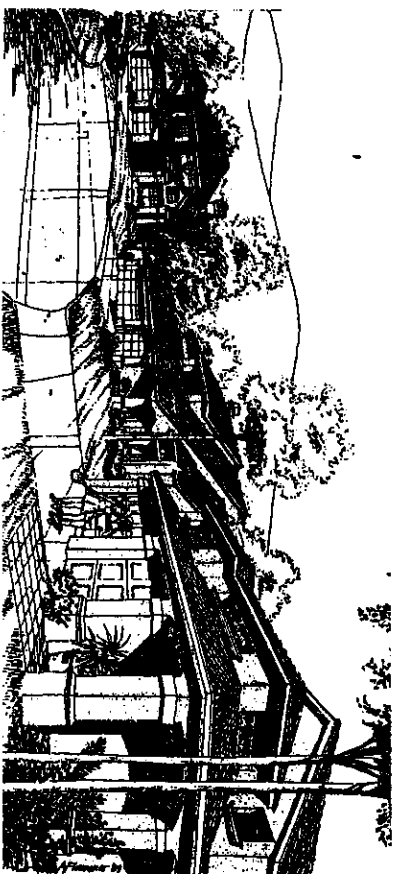
VILLAGE D



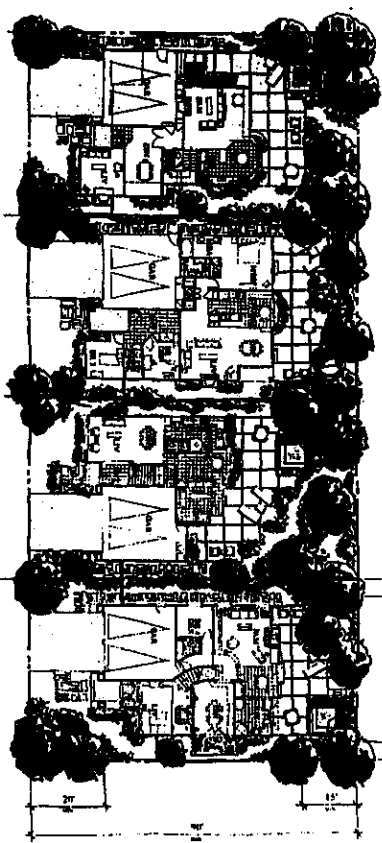
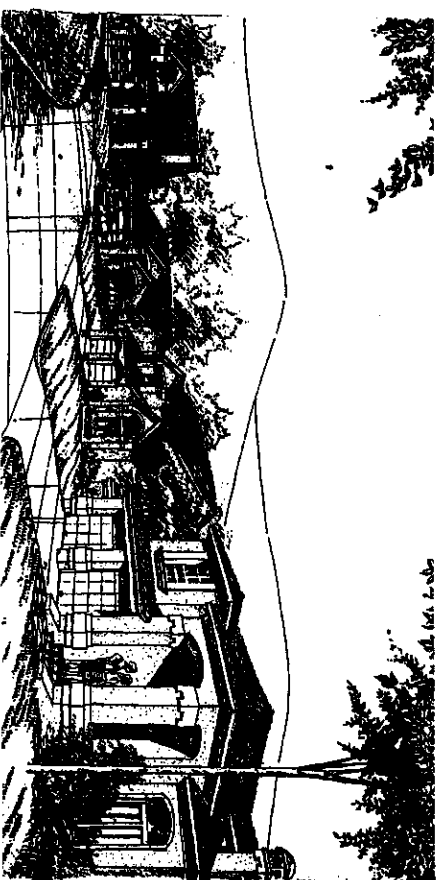
VILLAGE H



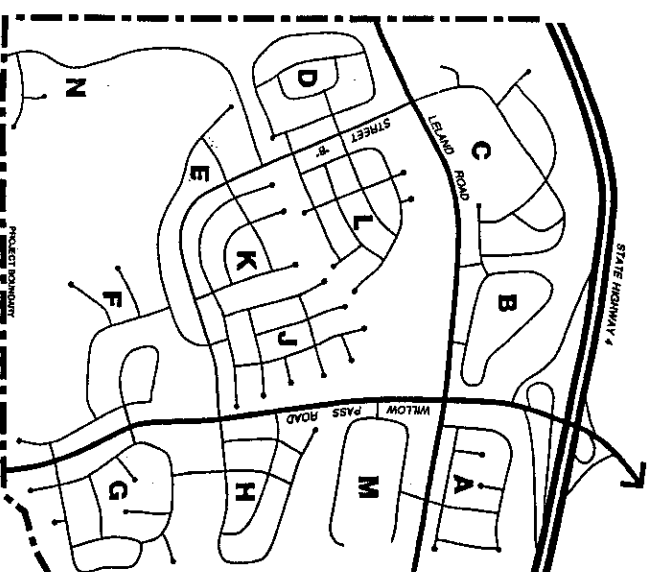
VILLAGE L



VILLAGE F,G



VILLAGE J, K



**PROJECT HOME SCHEMES  
SINGLE FAMILY**

Figure 8



indicated that the design concepts for these three villages remain highly preliminary and conceptual at this time.

Village C would consist of approximately 339 townhouses in approximately 60 two-story buildings of similar design containing four to six units each. The 339 townhouses would include approximately 218 two-bedroom units and 121 three-bedroom units.

Village B would consist of 576 apartments in approximately 36 two-story buildings of similar design containing approximately 16 units each. The buildings in Village B would contain approximately 208 one-bedroom units and 368 two-bedroom units. Village M would consist of 660 apartments "built to townhome standards" in approximately 33 two-story buildings of similar design containing 20 units each. The buildings in Village M would contain approximately 264 one-bedroom and 396 two-bedroom units.

#### 6. Common Recreation, Open Space and Landscaping Provisions

Project common recreation, open space, and landscaping elements are illustrated on Figure 10. The project would include a community park, two "community recreation" areas, three village parks, a parcourse, and a pedestrian trail system. The community park and recreation areas would also serve as detention basins during rainy periods. The applicant proposes to dedicate all of the project park facilities to the city. Maintenance of these facilities could be a city responsibility, perhaps via a Landscaping and Lighting District.

a. Community Park. A 36-acre sloping community park is proposed for the southwest corner of the intersection of Willow Pass Road and Leland Road, with frontage on Leland Road between Street "B" and Willow Pass, and frontage on Willow Pass Road between Leland and Street "B." The proposed community park facility would consist of passive recreation areas, an informal amphitheater, a gazebo/bandstand, and a portion of the project's pedestrian trail system. The park trail system would connect to a proposed pedestrian trail along the PG&E transmission line easement, which is also proposed to be landscaped.

b. Community Recreation Areas. Two community recreation areas are proposed. One approximately three-acre facility is shown at the southeast corner of the Leland Road/Street "B" intersection, contiguous to the western edge of the 36-acre community park. This facility would include a soccer field, tennis courts (approximately five), lawn area, and parking. The second facility, at approximately five acres in size, would be located near the center of the site at the southwest corner of the Street "B"/Willow Pass Road intersection. This facility would include a large, open play area, softball field, and parking. Three smaller village-oriented parks, about one acre each, are shown located in villages D, E, and H. These parks would include tot lots and bocce ball courts.

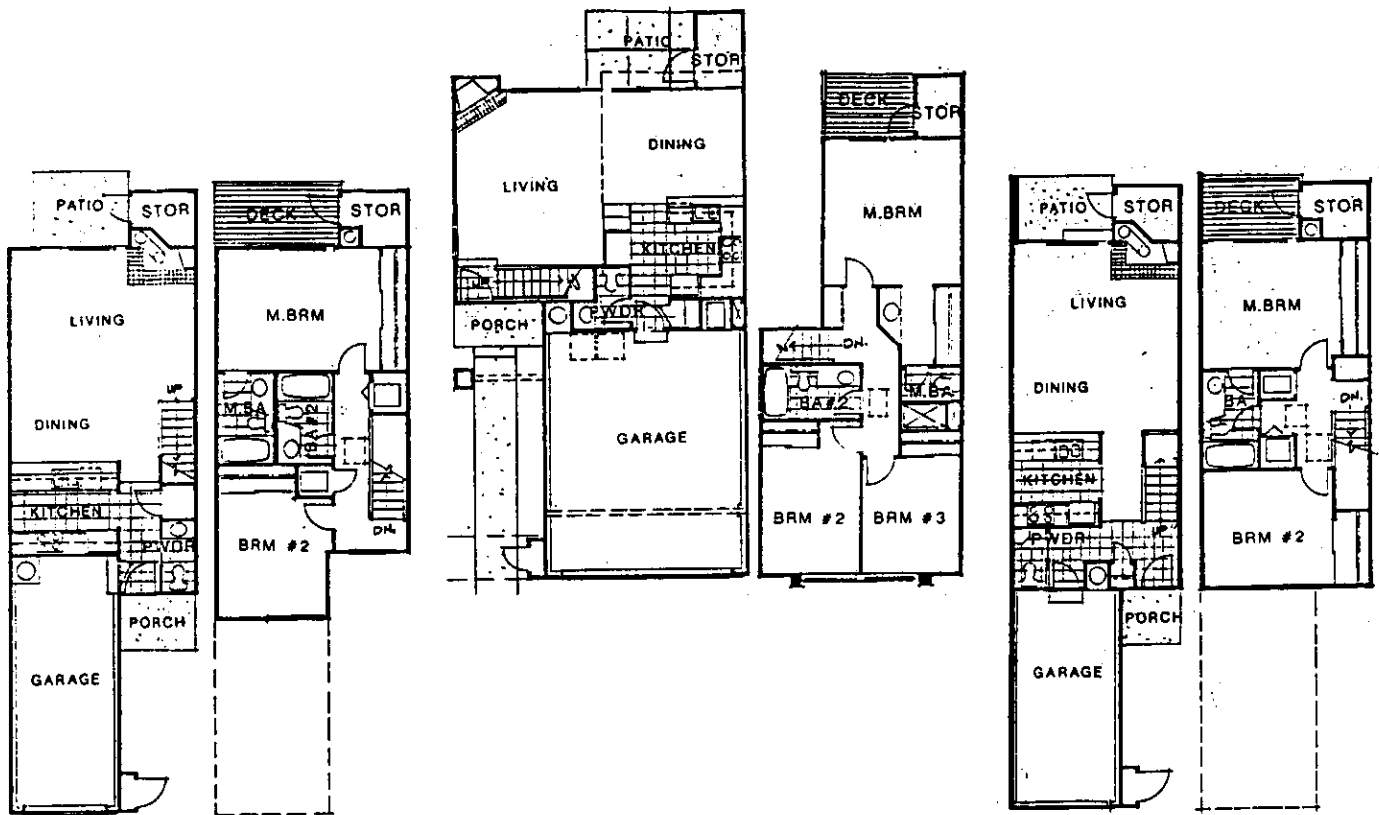
No separate bicycle paths or lanes are indicated on the development plan.

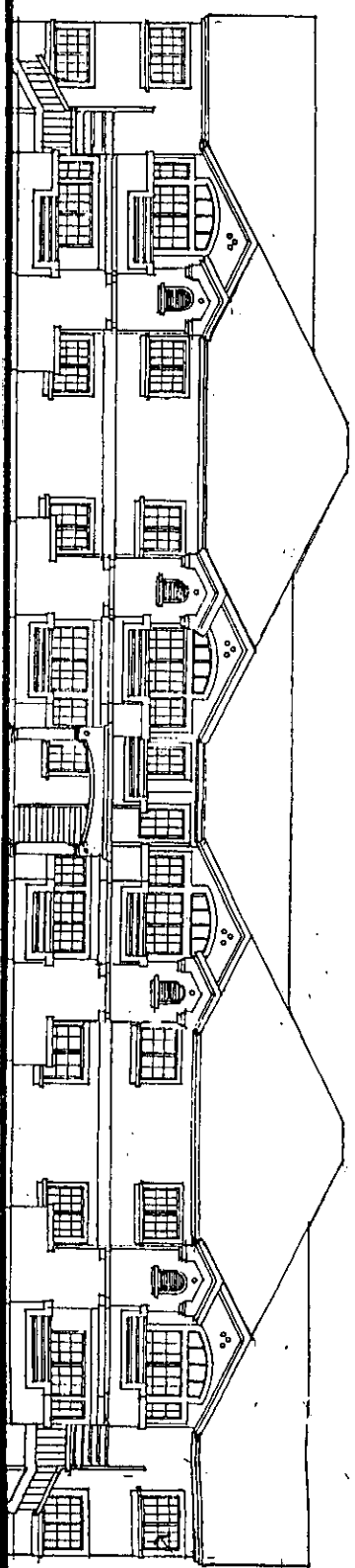


**4-UNIT TOWNHOME BUILDING**

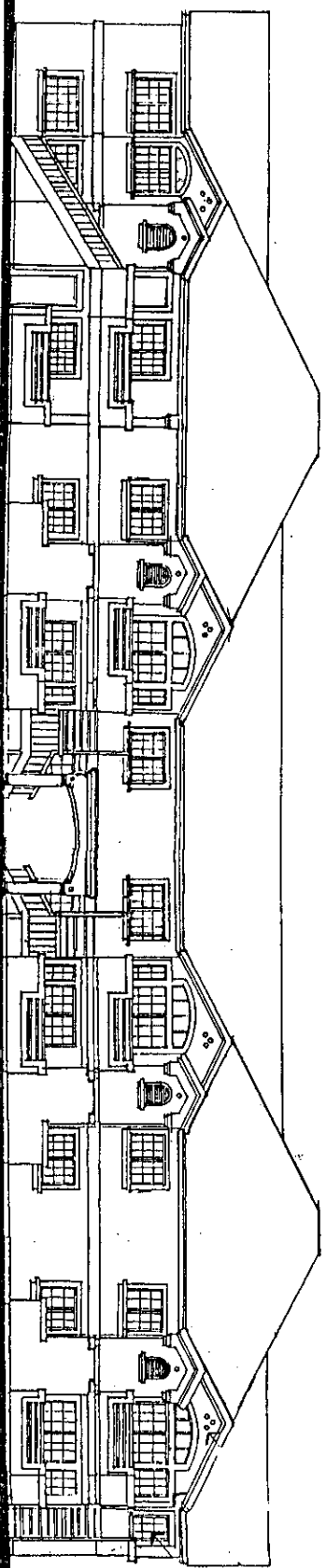
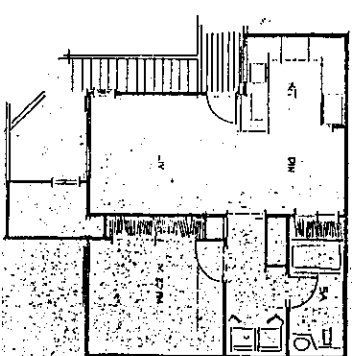


**6-UNIT TOWNHOME BUILDING**

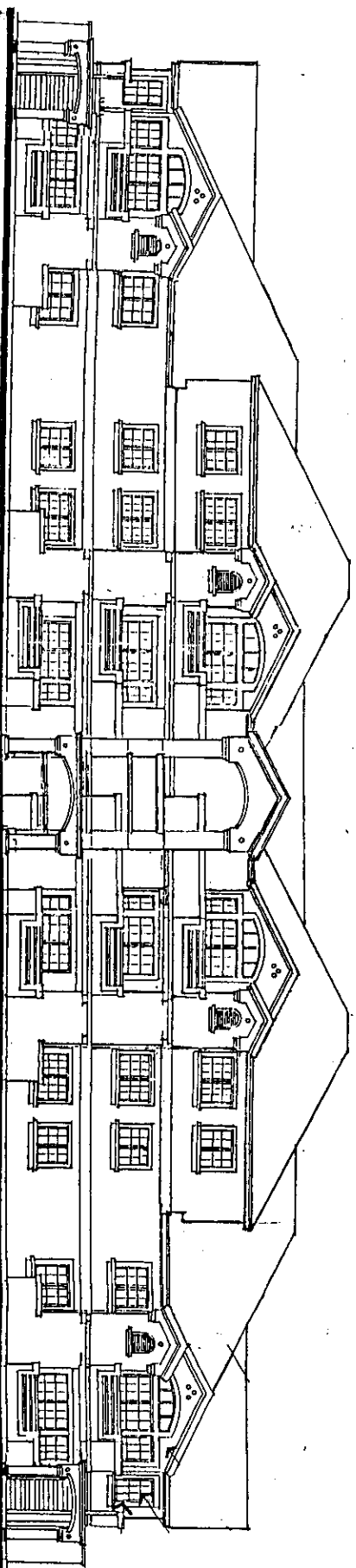
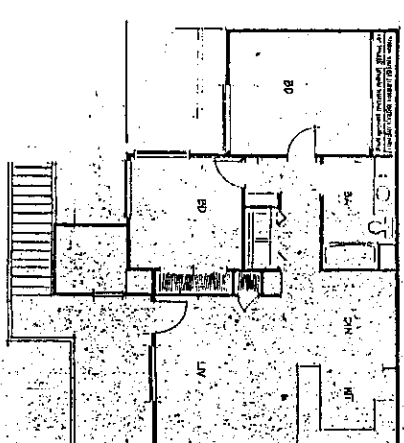
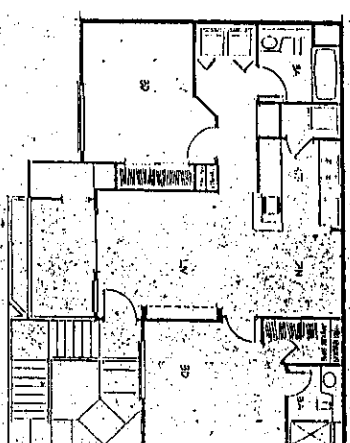




TYPE I 16 UNIT BUILDING



TYPE II 16 UNIT BUILDING



TYPE III 20 UNIT BUILDING

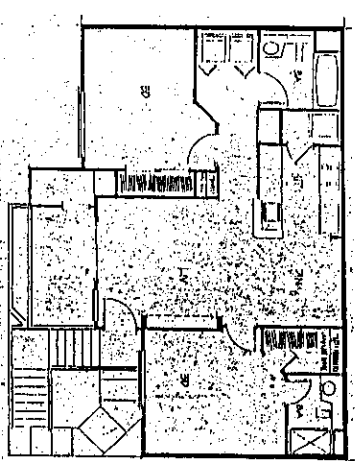
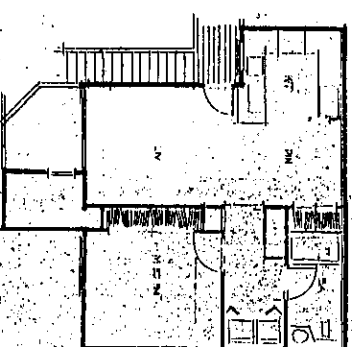


Figure 9  
PROJECT HOME SCHEMES--MULTI-FAMILY

c. Open Space Preserve. An approximately 95-acre area along the steepest and highest ridges in the southern portion of the project site in Village N is shown as five large lots of approximately 20 acres each. Elevations in this subarea range from approximately 490 to 867 feet (the highest points on the site). The area generally corresponds to the area of the site shown on the general plan Land Use Map as permanent *Open Space*. To achieve general plan consistency, legal mechanisms would be necessary to ensure the preservation of the majority of each of these privately-owned lots as undisturbed open space in perpetuity (e.g., conservation easements).

d. Landscape Plan. The applicant's proposed preliminary landscaping plan for villages D through H and J through L is shown on Figure 10. The plan indicates that the edges of the primary project streets--Willow Pass Road, Leland Road, and Street "B"--would be lined with street trees, including London Plane. In addition, intersections and medians would be accented with flowering trees such as Southern Magnolias, Flowering Plum, Ornamental Pears, and Flowering Crabapple; and by conifers such as Japanese Black Pine, Deodar Cedar, and Italian Cypress. Smaller residential streets within each village would be lined with other smaller street trees such as Holly Oak, Sweet Gum, Italian Alder, and Chinese Pistache, as well as the flowering trees listed above.

Trees proposed for use in community park and recreation areas include Deodar Cedars, Eucalyptus ficifolia, Coast Live Oak, and Flowering Cherry.

A preliminary landscaping plan had not been submitted for villages A, B, C, and M at this writing, but will be required with submission of the project design review application(s).

## 7. Parking

a. Single-Family. Each project home within the ten single-family villages would have a two- or three-car garage and driveway parking. Onstreet parking would also be available on both sides of all project local streets (see Figure 7).

b. Multi-Family. The three multi-family villages--B, C and M--would contain a total of approximately 3,702 parking spaces distributed around each building as shown on Figure 5. Of the 3,702 spaces, 460 would be in covered garages with walls on three sides, and 1,236 would be covered parking spaces with no walls (i.e., "carports"). The remaining spaces, including those reserved for the handicapped, would be uncovered. The development plan does not distinguish specific spaces for visitor parking.

Parking for recreation facilities is proposed adjacent to each facility.

#### 8. Storm Drainage

The project is located within Drainage 48B of the Contra Costa County Flood Control and Water Conservation District (CCCFCWCD). The project site is drained by Shore Acres Creek and two of its tributaries. Shore Acres Creek empties into Suisun Bay 2.4 miles to the north. The project would include the construction of a municipal storm drainage system which would include three, large, onsite detention basins intended to reduce project runoff to levels within the capacity of the downstream system. The applicant has obtained preliminary approval of its proposed drainage system design and approach from the CCCFCWCD.<sup>1</sup> Additional detail on the proposed project drainage system and its impacts are provided in section IV.E of this EIR (Drainage and Water Quality).

#### 9. Water

Water service to the project for domestic and fire flow purposes would be provided by the City of Pittsburg, which receives its water from the Contra Costa Water District (CCWD). The project site was annexed to the CCWD at the same time it was annexed to the city in 1990. The project would require expansion of the CCWD facilities in water service zones II and III, and completion of planned water delivery facility expansions in zones IV, V, and VI, including the construction of at least two new reservoirs and associated pump stations. One of these reservoirs would be located above the project site on the Seecon Property. The other would be located at the northern end of project lot 1261, which is one of the large ranchette lots in Village N. The proposed location of the pump stations has not been determined at this time. Project water service provisions and their implications are described in greater detail in section IV.H.1 of this EIR (Municipal Services, Water).

#### 10. Sewer

The project site was also annexed into the Delta Diablo Sanitation District 7A in 1990. An expansion of the existing District collection system, which is owned, operated and maintained by the City of Pittsburg, would be necessary to serve the project. Project sewer system provisions and their implications are described in greater detail in section IV.H.2 of this EIR (Municipal Services, Sewer).

---

<sup>1</sup>Stipulation for Judgment and Final Order--Action in Eminent Domain, Superior Court of the State of California (91-00439).

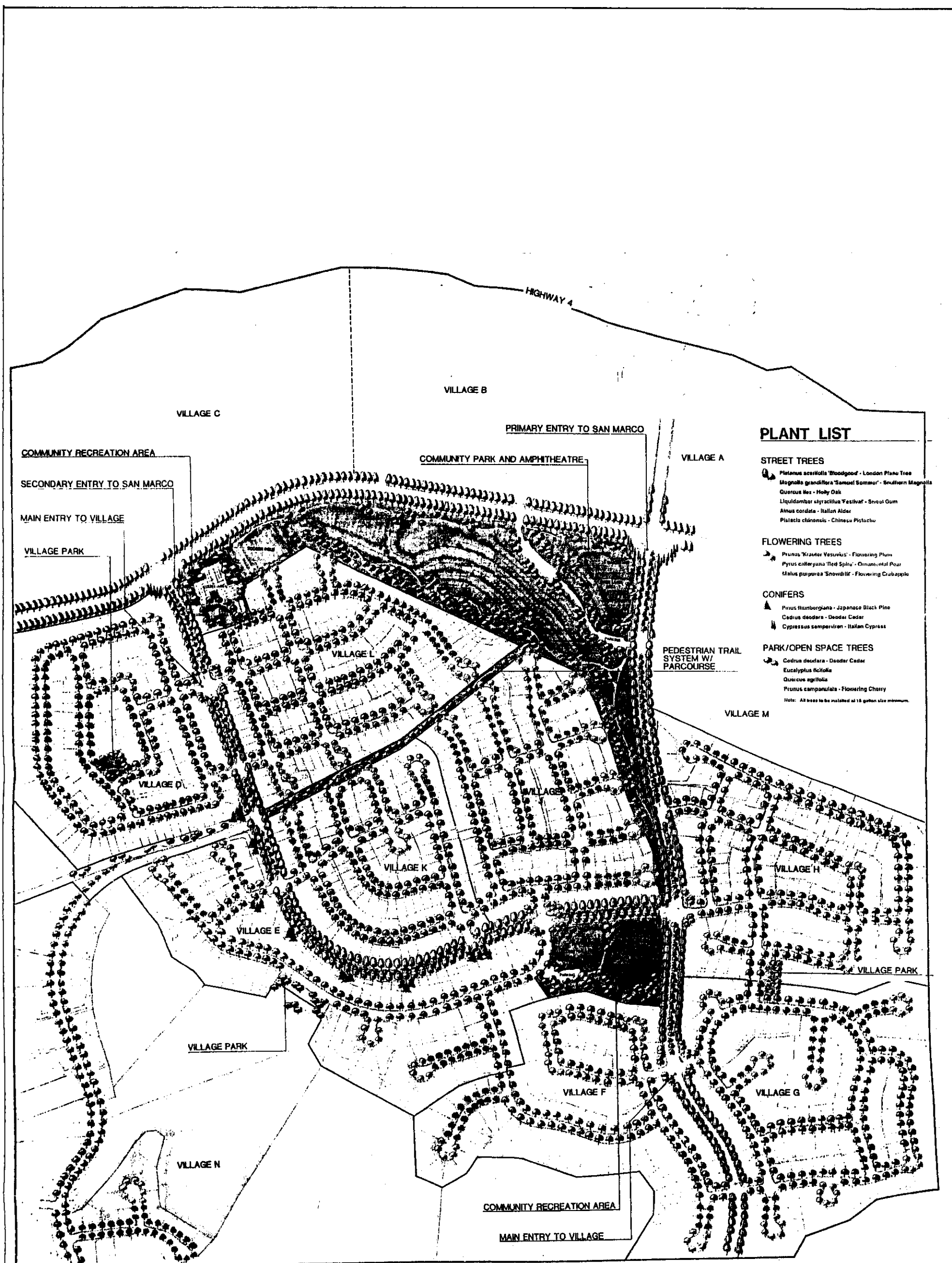


Figure 10  
**LANDSCAPE PLAN**

#### **D. REQUIRED JURISDICTIONAL APPROVALS**

##### **1. Requested Approvals**

In order to implement the proposed project, the proponent has submitted an application to the City of Pittsburg for approval of a proposed *Rezoning* and an associated *Preliminary Development Plan* and *Tentative Map*. The applicant has requested that the zoning for the 639-acre site be changed from the current temporary *Study* designation to *Planned Development District* (PD). The PD rezoning would allow residential uses at densities consistent with the proposed underlying general plan designation, provided that the city finds the proposed development plan to be consistent with the objectives, regulations, and standards outlined in Chapter 18.62 of the City of Pittsburg Zoning Ordinance.

##### **2. Required Local Actions**

The project application will require action by several local governmental jurisdictions. The proposed Rezoning, Preliminary Development Plan, and Tentative Map must each be approved by both the City of Pittsburg Planning Commission and the City of Pittsburg City Council. Design review approval for the single family houses, townhouses and apartments will also be required.

##### **3. Required State and Federal Actions**

**a. State.** Project access and associated improvements related to the planned Highway 4/Willow Pass interchange reconstruction plan would require review and approval by the California Department of Transportation (Caltrans), District 4. The creek alteration aspects of the project would require a Streambed Alteration Permit Plan from the State Department of Fish and Game as per the State Fish and Game Code Section 1601-1603.

**b. Federal.** Implementation of the grading aspects of the project will also require a Section 404 permit from the US Army Corps of Engineers for associated stream and wetland fill activities, per Section 404 of the Clean Water Act.

r In addition, the California Regional Water Quality Control Board must certify the Army Corps  
r of Engineers permit.

#### **E. INTENDED USES OF THE EIR**

As explained earlier in this chapter, the City of Pittsburg is acting as the Lead Agency for all environmental documentation and procedural requirements for the San Marco subdivision and related onsite and offsite improvements. This EIR has been prepared to serve as the CEQA-required environmental documentation for city consideration of this project, including

the associated rezoning application, as well as subsequent subdivision approvals, grading permit approvals, building permit approvals, and other city actions necessary to implement the project. As the Lead Agency, the city also intends that this EIR serve as the CEQA-





required documentation for approvals relating to this project which may be made by other responsible agencies, including the Delta Diablo Sanitation District, Contra Costa Water District, Caltrans, State Department of Fish and Game, Army Corps of Engineers, and any other responsible agencies not identified at this time.

#### **IV. SETTING, IMPACTS, AND MITIGATIONS**

---

## A. LAND USE

---

This EIR section includes a description of the existing land use setting, the project's potential impacts on that setting, and mitigation measures warranted to address identified adverse impacts.

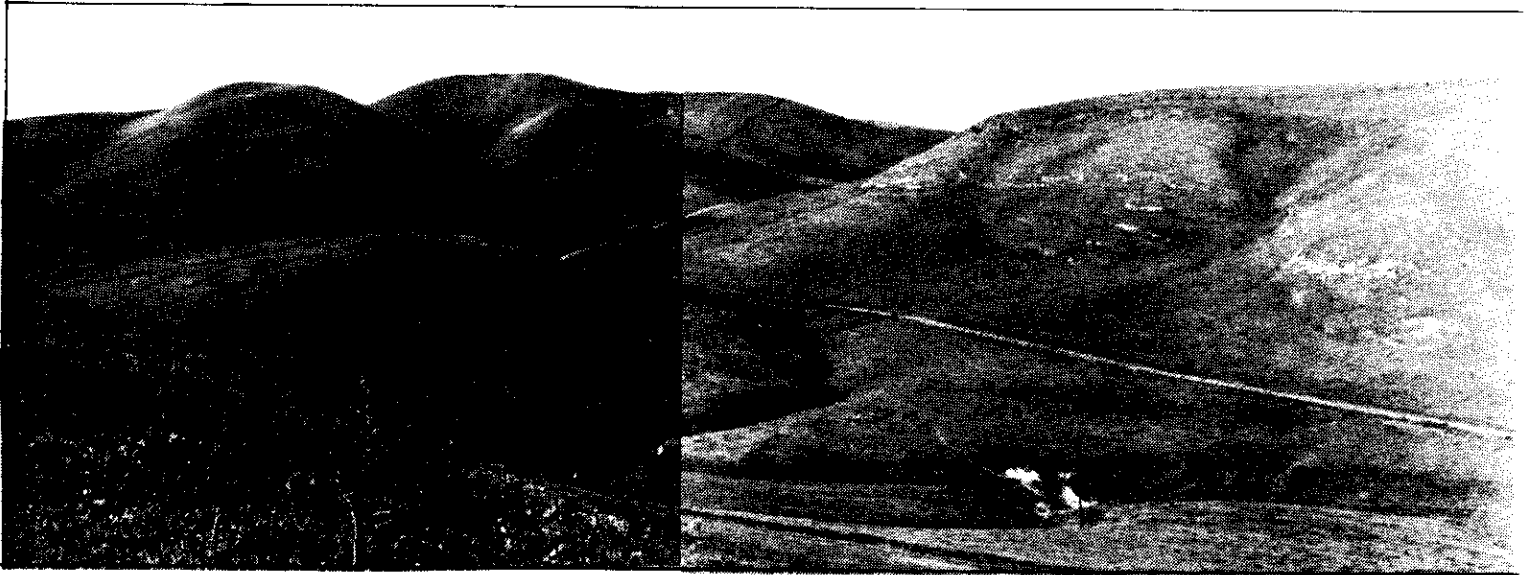
### 1. EXISTING SETTING

#### a. Project Site Land Use

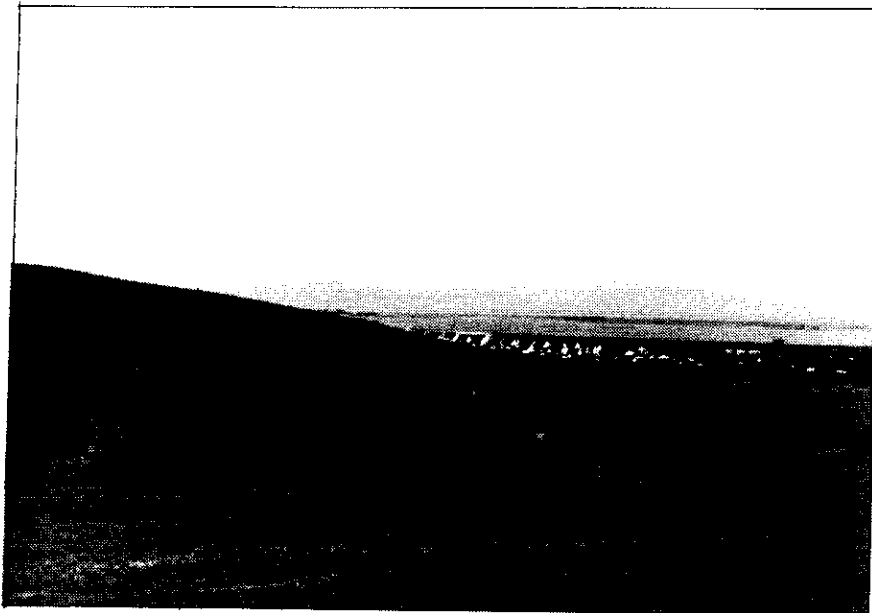
(1) Current Onsite Land Use. Existing onsite land use characteristics are illustrated on Figures 3 and 4 in the Project Description section of this EIR. The site is currently and has historically been used primarily as rangeland for cattle. Grazing activity has historically occurred throughout the barren, rolling hillsides of the site, including lowland areas along the natural drainage channels. A small farm complex (i.e., the Alvernaz Ranch) is located in the central, northeast portion of the site along Shore Acres Creek. The complex includes two residences and other associated farm outbuildings. A second ranch complex (the Rogers Ranch), since removed, was located in the central northern portion of the site along Highway 4. This historic feature is further described in section IV.K of this EIR (Cultural Resources).

The site also contains eight natural gas wells (four active and four abandoned) and is traversed by two sets of electrical transmission lines. The natural gas well sites are currently subject to a lease agreement between Chevron and the landowner which permits gas exploration and extraction. Four of the eight wells are currently producing gas. Exploratory drilling also continues to occur on the site (see photo on page IV.A-3). Chevron has constructed a gas line beneath Highway 4 to bring natural gas out of the Southwest Hills. The substantial investment in the gas line and the ongoing exploratory drilling occurring on the site indicate an expectation that gas extraction will continue to occur on the property for some time.

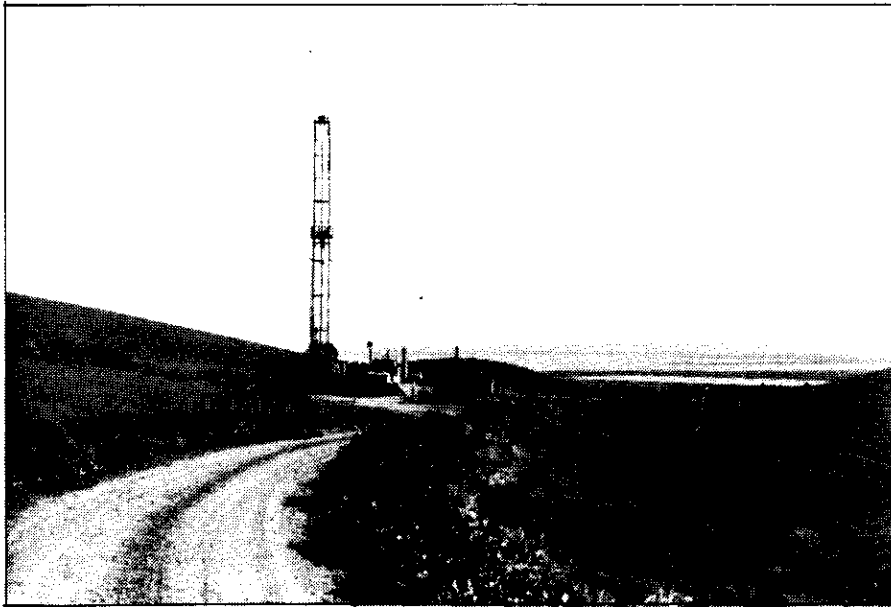
The electrical transmission lines include two parallel PG&E steel tower lines (230 and 115 kV) within a 137.5-foot easement, and one USA wooden "H-frame" tower line (69 kV) within a 50.0-foot easement. A number of graded fire roads, maintenance roads, and gas well access roads also traverse the site, as shown on Figures 3 and 4.



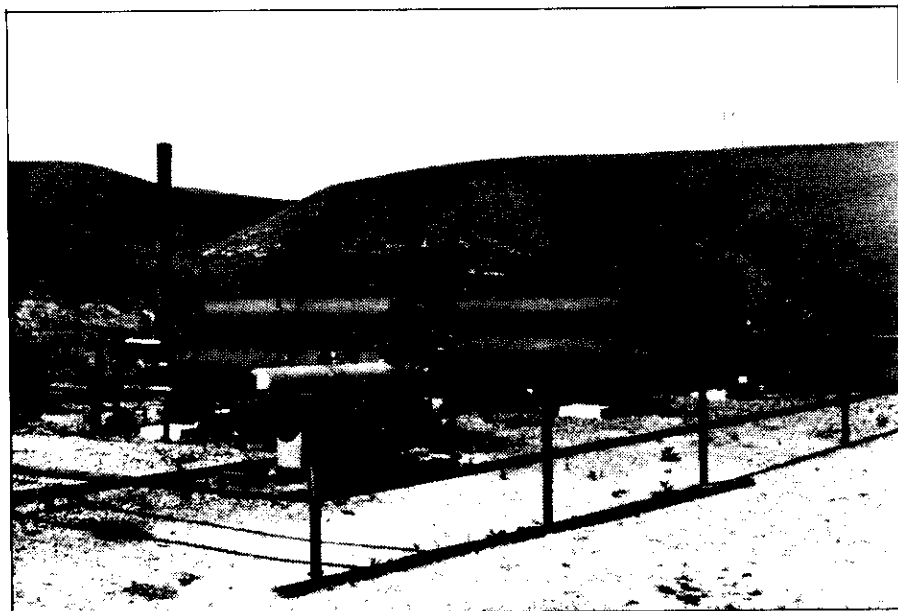
*This landscape of barren ridges, rolling hillsides, and draws is typical of the existing project site. An unnamed intermittent creek, one of the site's two principal drainage channels, is in the foreground.*



*An existing farm complex is located along the lower reach of Shore Acres Creek (the old Alvernaz Ranch).*



*Exploratory activity occurs on one of the onsite natural gas well locations in this view looking north towards Suisun Bay.*



*Another natural gas well site on the San Marco property is shown above. The 69 kV USA wooden tower line is visible on the ridge in the background.*

The site also contains two small, intermittent stock ponds created by dams in the two primary drainage channels.

(2) Onsite Agricultural Resources. Section IV.D of this EIR (Soils and Geology) describes the soil characteristics of the project site. The property contains no U.S. Soil Conservation Service designated prime agricultural soils. The site is currently and has been historically used for cattle grazing. The city does not consider the steep, dry lands of the Southwest Hills to be viable for more productive agricultural use, given the soil and topographic characteristics of the area, and the lack of local transportation and market conditions necessary to support a viable cattle ranching operation.<sup>1</sup>

(3) Williamson Act Contracts. As shown in Figure 11, approximately 370 acres of the project site have been under Williamson Act contract. However, these contracts (Culbertson) have not been renewed and will expire in 1997.

(4) Southwest Annexation. The relationship of the project site to recent southwest Pittsburg annexation activity is shown on Figure 12. The project site was annexed to the city in 1990 as part of the 1,122-acre Southwest Boundary Reorganization, Annexation 109. The 639-acre site represents approximately 571 percent of the total 1,251-acre Annexation 109 area.

An additional annexation area immediately west of the project site, Annexation 116, is currently under LAFCO<sup>2</sup> review (see Figure 12). This 129-acre annexation area includes the adjacent DeBonneville and Ridge Farms properties.

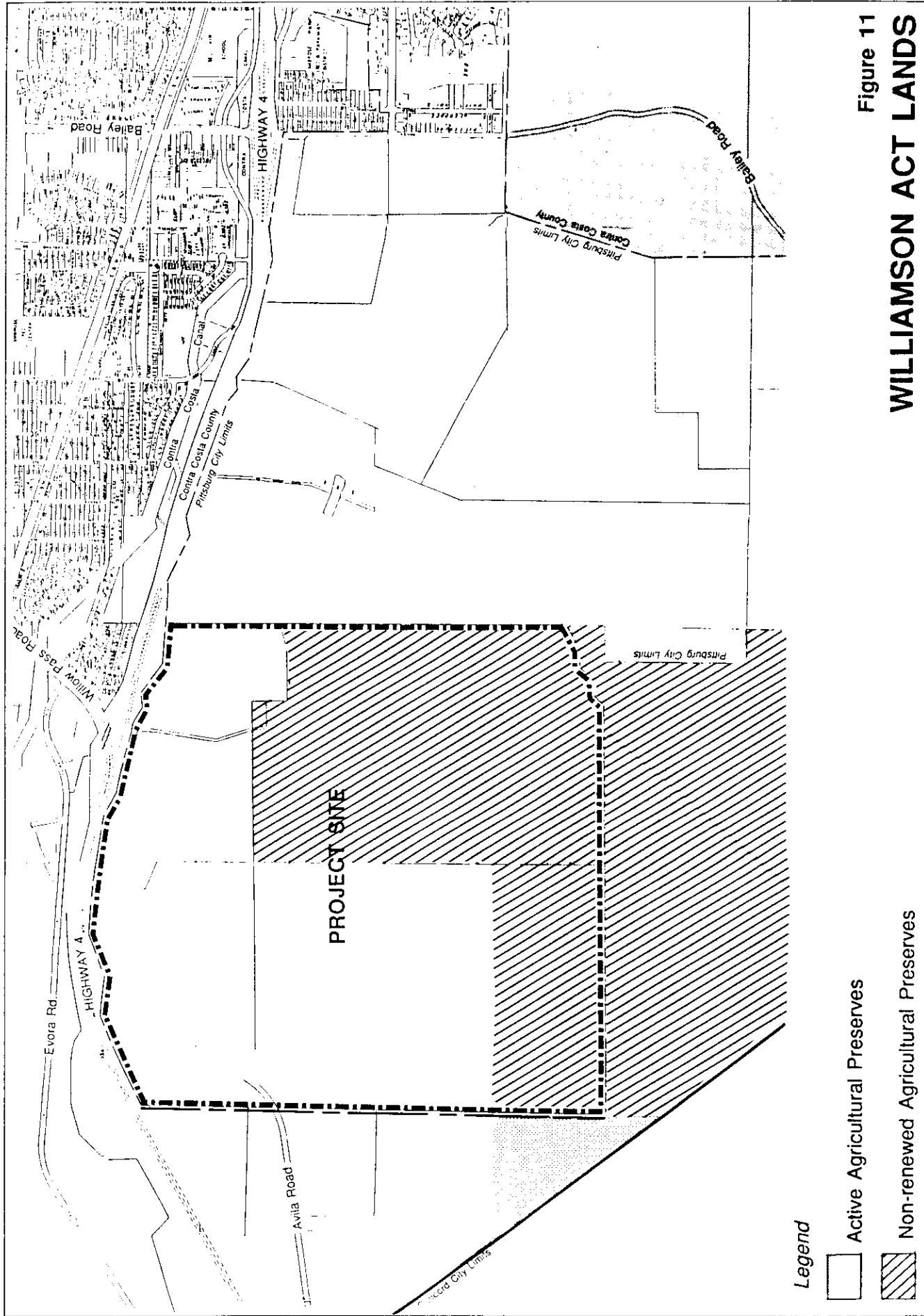
(5) Other Planning Considerations. City of Pittsburg General Plan Land Use Map designations for southwest Pittsburg, including the project site, are shown on Figure 13. The project site is designated on the Land Use Map for a combination of residential land uses including *Rural Residential* (0.05 to 0.2 units per acre), *Residential Estate* (0.2 to 3.0 units per acre), *Residential Low Density* (3.1 to 5.0 units per acre), *Residential Medium Density* (5.1 to 14.0 units per acre), and *Parks and Recreation*. The *Parks and Recreation* designation is intended to accommodate public parks and private recreational areas.

The city's Land Use Map also identifies the approximately 370 acres of the site as subject to the general plan's *Agricultural Preserve* overlay land use classification which is applied to lands under Williamson Act contract. The City of Pittsburg General Plan specifically encourages preservation of *Agricultural Preserve* lands under Williamson Act contract. However, the city also recognizes that, notwithstanding environmental constraints and the

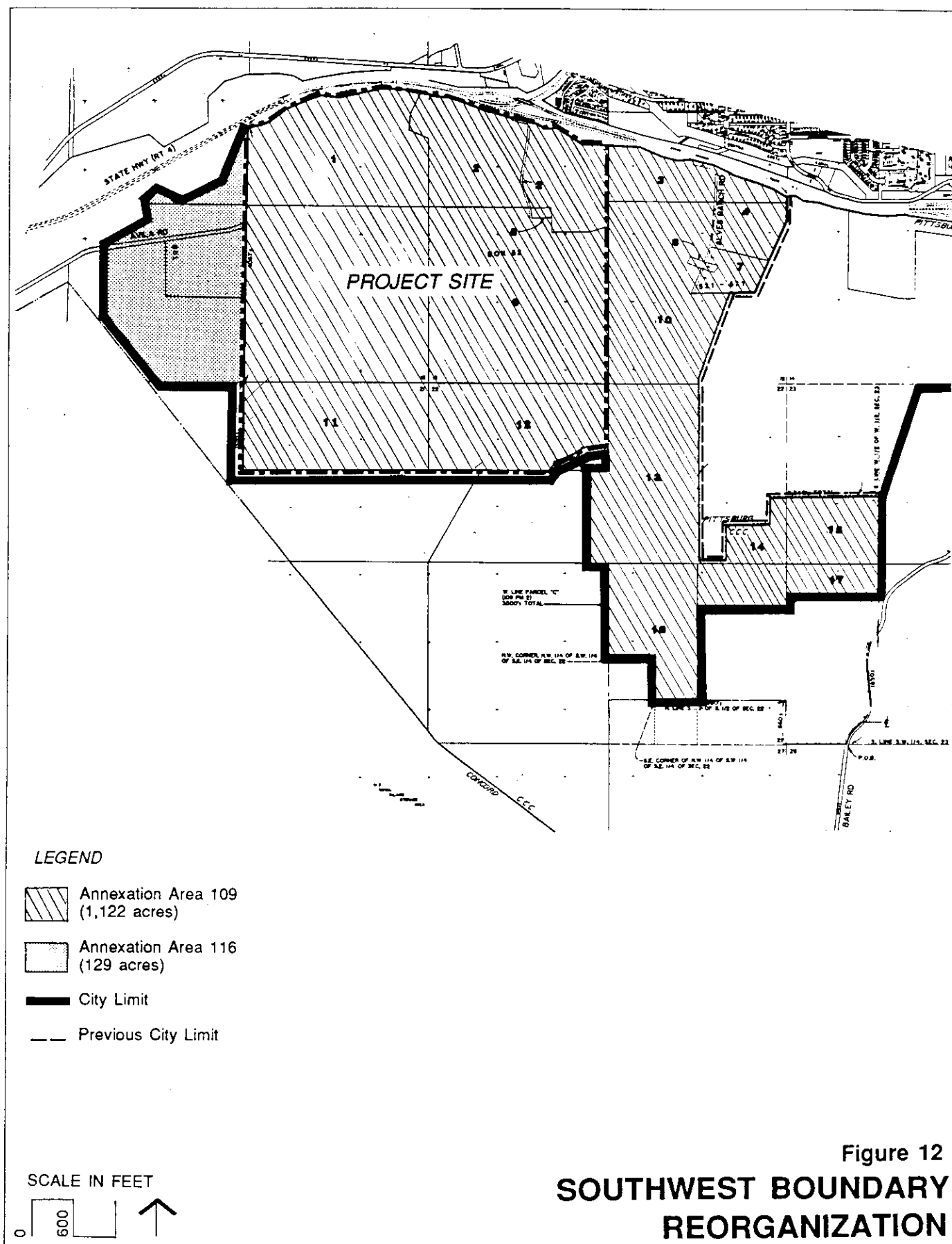
---

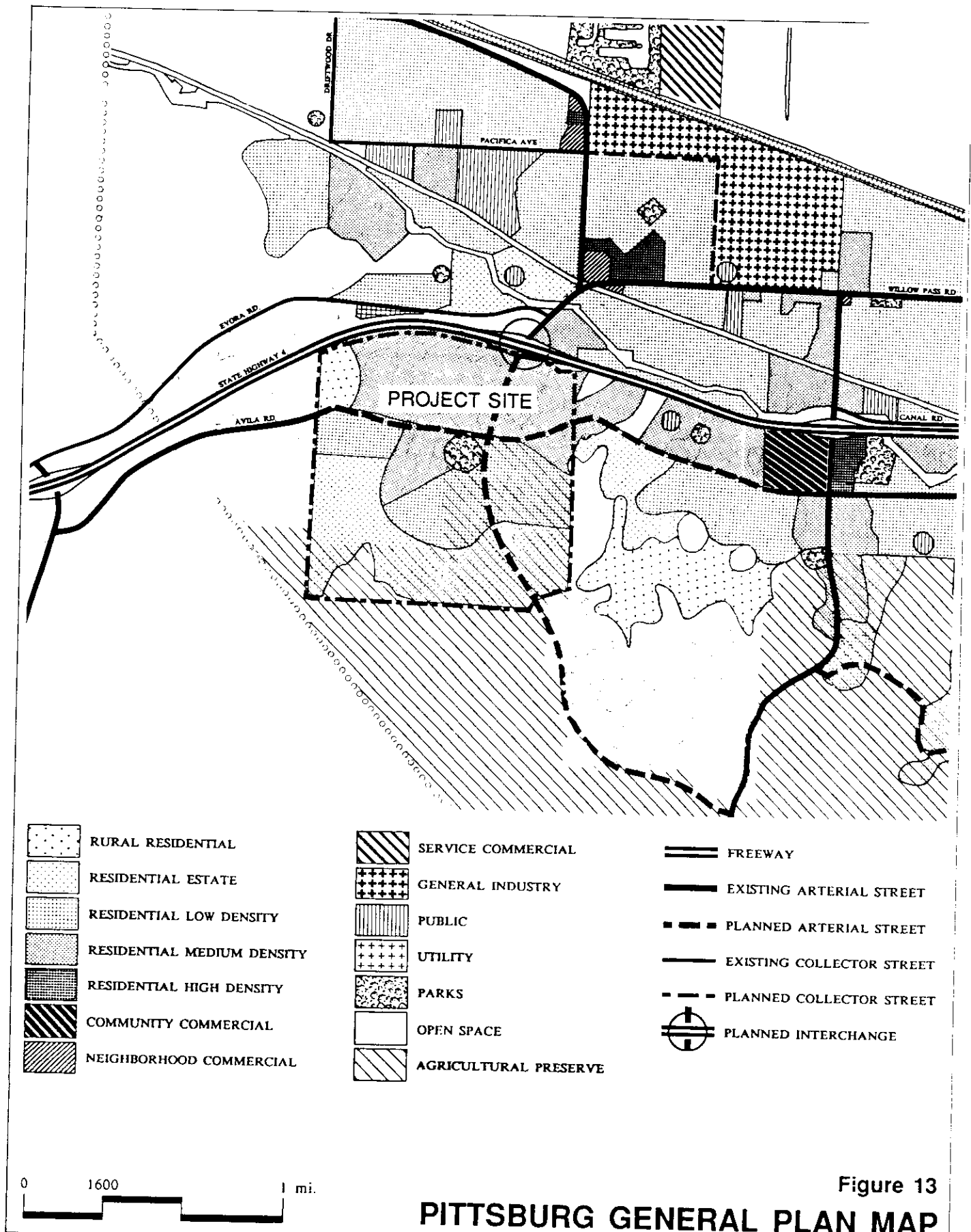
<sup>1</sup>City of Pittsburg City Council Resolution No. 90-7614 Exhibit C.

<sup>2</sup>LAFCO = Contra Costa County Local Agency Formation Commission.









feasibility of providing public services, those areas where these contracts are not renewed are likely to be suitable for urban expansion.<sup>1</sup>

The site also contains a General Plan Land Use Element "minor ridgeline" and "stream" designation.<sup>2</sup> The Land Use Element includes several policies relating to preservation of ridges and streams. Other general plan elements also contain policies which encourage the preservation of riparian and other wildlife habitat, and the preservation and enhancement of open space, habitat, recreational, and aesthetic values of creeks.<sup>3</sup> This language would apply to the drainage channels on the site, particularly Shore Acres Creek. Section V of this EIR (Project Consistency with Adopted Local and Regional Plans) includes an evaluation of project relationships to these general plan policies.

With respect to the various electrical transmission line easements which traverse the city and the site, the City of Pittsburgh General Plan Parks and Recreation Element identifies PG&E easements as potential locations for some types of open space use, such as trails and wildlife or view corridors.<sup>4</sup>

The City of Pittsburgh General Plan does not include a specific trail plan; however, the Conservation Element encourages trails to be integrated into creek corridors and other recreational open spaces.<sup>5</sup>

#### **b. Surrounding Land Use**

(1) General. Existing land use characteristics in the project site vicinity are shown on Figure 2 in Section III of this EIR (the aerial photo) and are mapped on Figure 14 which follows. The project vicinity is located at the westernmost edge of the Pittsburgh city limits, above and south of Highway 4. In the West Leland Road area, approximately one mile east of the project site the open hillside landscape is gradually being converted to suburban residential and community commercial use.

The unincorporated residential communities of Shore Acres and West Pittsburgh are located on the opposite side of Highway 4 from the project. Land uses in these two established areas include a mix of old and new residential development, mobile homes, strip

---

<sup>1</sup>City of Pittsburgh General Plan, page 27.

<sup>2</sup>City of Pittsburgh General Plan, Figure 2.

<sup>3</sup>City of Pittsburgh General Plan, pages 28, 35, and 61.

<sup>4</sup>City of Pittsburgh General Plan, page 35.

<sup>5</sup>City of Pittsburgh General Plan, page 61.

commercial development along Willow Pass Road, and new suburban residential development, including the Mota Ranch and Sea Breeze subdivisions.

Other prominent land uses in the area include the Concord Naval Weapons Station located just west of Willow Pass Summit between the site and the City of Concord, the Port Chicago Naval Station Magazine located approximately three miles to the northwest along Suisun Bay, the PG&E Pittsburg Power Plant and downtown Pittsburg located approximately three miles to the northeast, and the concentration of heavy industrial uses which is located in the city's northeast river area approximately four miles to the northeast, including the U.S Steel Mill and Dow Chemical Plant.

The project's immediate southwest Pittsburg vicinity south of Highway 4 contains substantial areas of open hillside rangeland, a few associated farm and ranch complexes, limited quarry operations, and further to the west, the vast open space area occupied by the Concord Naval Weapons Station. As shown on Figure 14, lands contiguous to the site include the Alves property to the west, the DeBonneville and Ridge Farms properties to the east, and the Seeno property to the south. All of these contiguous properties are included within the Pittsburg General Plan designated Southwest Hills subarea.<sup>1</sup> The Southwest Hills subarea was designated by the 1988 Pittsburg General Plan as one of the city's next residential growth areas. In 1990, the 1,122-acre Annexation 109 (see Figure 12) was approved to provide necessary additional housing opportunities within the city.<sup>2</sup>

The specific land use characteristics of the adjacent Alves, DeBonneville, Ridge Farms, and Secon properties, and the nearby Sea Breeze, Oak Hills, and Oak Hills South subdivisions, are described below.

(2) Alves Property. As shown on Figure 14, the 293-acre Alves property is located immediately to the east of the project site, sharing almost 1,400 feet of common boundary. The site extends from Highway 4 up the hillside to elevations above the project site. Like the project site, Alves property consists primarily of barren, hillside rangeland. The property contains a large ranch complex, a small rock quarry, the Eugene G. Alves Construction Company facilities (including equipment and materials storage yards), and grazing.

The Alves property is designated by the Pittsburg General Plan Land Use Element for a combination of *Open Space*, *Residential Low Density*, *Residential Medium Density*, *Residential Estate*, and *Rural Residential* land uses. Like the project site, the property is currently zoned temporary "Study" district.

---

<sup>1</sup>Pittsburg General Plan, Figure 5.

<sup>2</sup>City of Pittsburg City Council Resolution No. 90-7614, Exhibit C.

An application to amend the general plan designation and zoning on the Alves property is currently pending with the city which is intended to provide for location of the most intensive residential development in the lower-lying portions of the site, and less intensive development on the upper, steeper portions of the site. The general plan amendment would result in the removal of the current *residential medium density* designation (5.1-14.0 units per acre) and a redistribution of the existing *residential low density* designation (3.1-5.0 units per acre), *residential estate* (.21-3.0 units per acre), and *open space* designations on the property. The associated rezoning would involve a change from the existing (S) Temporary Unclassified to RS, RE, and OS in order to be consistent with the proposed general plan change. The proposed land use change would provide for residential low density development north of Leland Road, residential estate in the central portion of the property, and open space in the southernmost area of the property.

While no detailed development master plan has been submitted, it is anticipated in this EIR, based on the proposed general plan and zoning change, that the Alves property will eventually be developed with approximately 500 single family units.

(3) DeBonneville Property. The DeBonneville property is a 25-acre hillside parcel located adjacent to the western edge of the project site south of Avila Road (see Figure 14). The site currently contains three mobile homes used as residences, and a dog kennel. City of Pittsburg Annexation #116, currently under LAFCO review, includes the DeBonneville property. The site is designated as *Open Space* on the city's general plan Land Use Map and Zoning Map.

Prior to the current annexation action, the property owner obtained a Use Permit from the county to allow construction and operation of an "Animal Center" which would include an animal clinic and hospital, pet training and grooming facilities, show facilities, a 30,000 square foot exhibition hall, and pet boarding facilities. The exhibition hall would be used for animal shows, basketball games, and weddings. The center would also contain a permanent residence, a bunkhouse, an office, and a small lake. In addition, the complex plans include hookups and spaces for 62 recreational vehicles.

(4) Ridge Farms. The Ridge Farms property is a 101-acre parcel on the north and south side of Avila Road which surrounds the DeBonneville property on three sides, and also shares a common boundary with the project site in two locations (see Figure 14). The portion of the property located above (south of) Avila Road is open rangeland. The portion below (north of) Avila Road contains a variety of land uses including grazing areas, paddocks, horse stables, truck and other vehicle storage, and a construction equipment yard. The property is included within the city Annexation 116, now pending. The site is designated as *Open Space* on the city's Land Use Map and Zoning Map. There are no pending or anticipated development plans for the property.

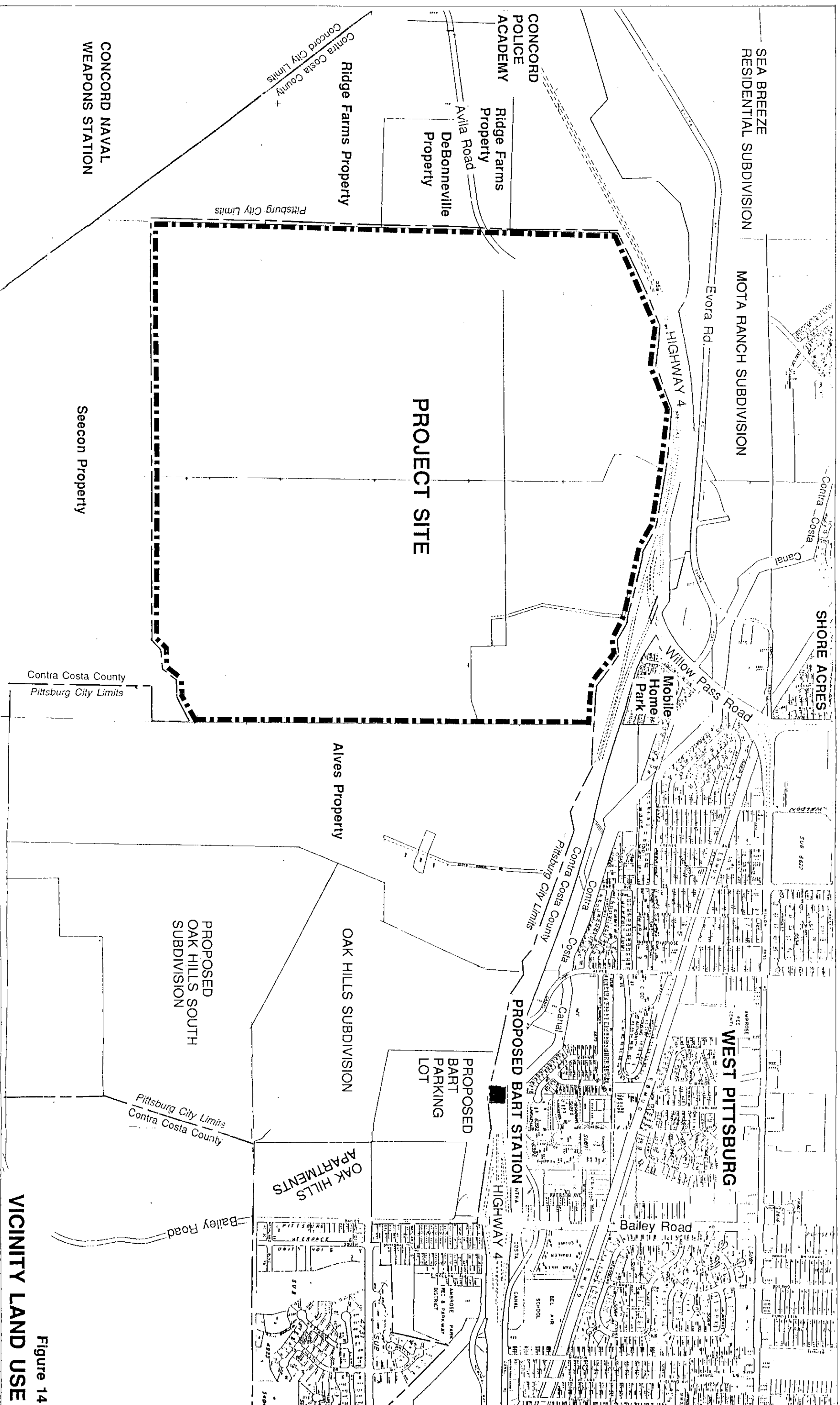
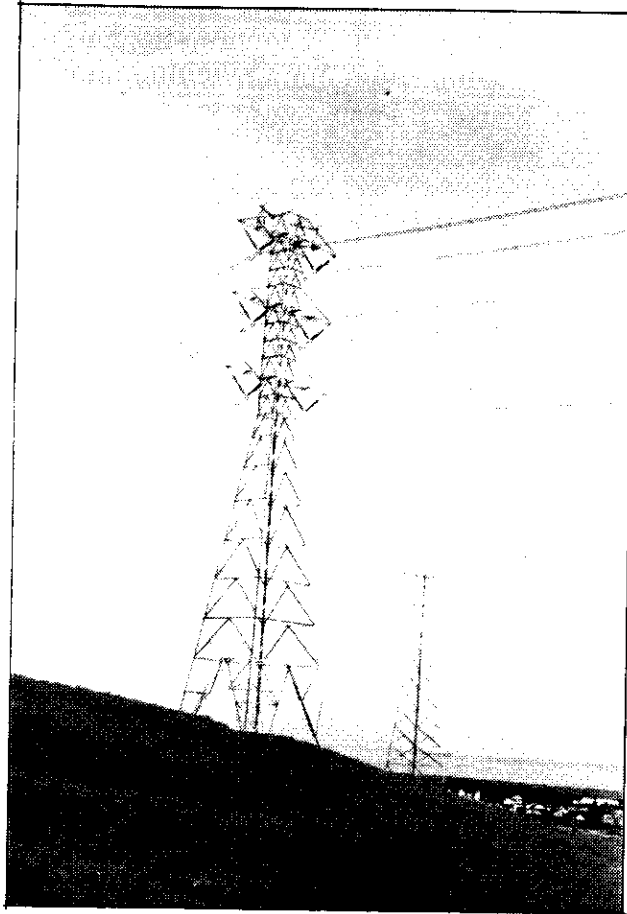
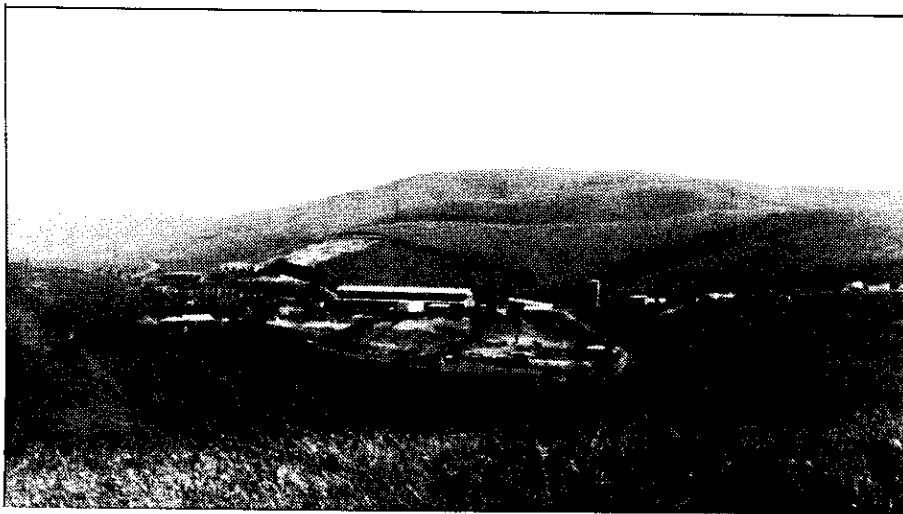


Figure 14  
VICINITY LAND USE

San Marco Project City of Pittsburg



*Parallel 230 kV and 115 kV PG&E electrical transmission lines traverse the project site within a 137.5-foot easement.*



*Farm structures on the adjacent Ridge Farms property are shown in the central foreground. Two residential structures on the adjacent DeBonneville property are visible to the left above the Ridge Farms complex.*

(5) Seecon Property. The Seecon property is a 442-acre parcel abutting the entire length of the project's southern boundary. This property is primarily open rangeland, and contains one rural residence. The Seecon property is located within the planning area of the City of Pittsburg, but is not within the city limits. The property is designated as *Open Space* on the city's Land Use Map and has been under Williamson Act contract.<sup>1</sup> However, the contract was not renewed in 1991.

(6) Sea Breeze. The new Sea Breeze residential subdivision is located across Highway 4 from the project site off of Evora Road in the unincorporated foothills area above the Shore Acres community. The project is approximately 80 percent completed and occupied. The subdivision contains single-family detached homes similar to those proposed within the San Marco project. The development will eventually contain 148 units on 36.5 acres, resulting in an overall (gross) density of 4.05 units per acre.

(7) Oak Hills. Oak Hills is an 87-acre, 442-unit single-family detached residential subdivision located immediately east of the Alves Property. Approximately 85 percent of the subdivision has been constructed and occupied. The completed project will have an overall (gross) density of approximately five units per acre.

As shown on Figure 14, the primary east-west arterial access to the Oak Hills development, West Leland Road, would also provide east-west arterial access to the project.

The Oak Hills property is designated *Residential Medium Density* and *Residential Low Density* on the general plan Land Use Map, and is designated *Medium-Density Residential* and *Single-Family Residential* on the city's Zoning Map.

(8) Oak Hills South. The 211-acre Oak Hills South site, located immediately above and to the south of the existing Oak Hills development, is subject to a pending single-family detached residential subdivision application. The Oak Hills South site is designated *Residential Low Density*, *Rural Residential*, and *Open Space* in the city's general plan. The site is zoned *Hillside Planned Development*. The pending subdivision application requests a general plan amendment to allow a higher intensity residential development totalling 477 units (2.3 units per acre). The environmental implications of this proposed general plan amendment are currently being evaluated by the city in an expanded Initial Study.

(9) Highway 4. The project site is located immediately south of State Highway 4, a major regional highway connecting the City of Stockton in San Joaquin County to Interstate Highway 80 in Hercules. The highway segment through the project vicinity is a four-lane divided facility with a right-of-way width varying between 200 and 300 feet. The highway

---

<sup>1</sup>Williamson Act contracts are agreements which can be made between property owners and the county which create "agricultural preserves" in exchange for property tax adjustments.



right-of-way creates a major land use boundary along the north side of the project site, separating the site spatially and visually from the various residential land uses immediately north of the route (e.g., the Crestview Mobile Home Park, the Sea Breeze subdivision, etc.).

A major improvement program is planned by Caltrans for this segment of Highway 4. This program will include the raising of Highway 4 by up to approximately 50 feet along the San Marco site frontage to allow for an extension of Willow Pass Road under the highway into and eventually through the project site. The planned improvements here also include construction of full interchange on- and offramps. The improvements are currently expected to be completed and operational by 1994.

- r (10) Concord Naval Weapons Station. The inland portion of the Concord Naval Weapons Station is located west and south of the project beyond the Ridge Farm, DeBonneville, and Seecon properties. The largest single land use on this 5,272-acre military facility is ammunition storage. Various production facilities, a Weapons Quality Engineering Center, and the station's administrative complex are also located within the inland portion of the station. All of these station land uses are located west of the hills which separate the station from the project site, and are not visible from the project site.
- r (11) Surrounding Agricultural Resources. Lands surrounding the San Marco project site which contain ongoing agricultural uses include the Alves property, the Ridge Farm property, the Seecon property, and several other large land holdings to the south and east outside of the city's planning area. Current agricultural activities on these lands primarily include grazing and associated livestock operations. Several of the properties to the south and east of the project site are under current Williamson Act contracts (see Figure 11). The Williamson Act contract on the adjacent Seecon property was not renewed in 1991, and is now in the process of expiration.
- r (12) Other Local Land Use Activities. Other notable existing and planned land uses in the project vicinity include the *Concord Police Academy*, the *Oak Hills Shopping Center*, and the future *West Pittsburgh BART Station* to be located near the Highway 4/Bailey Road interchange.

The *Oak Hills Shopping Center* is a new 12-acre community shopping center located at the corner of West Leland Road and Bailey Road, approximately three quarters of a mile east of the project site. This shopping center currently contains 124,310 square feet of leasable retail space.

The planned *West Pittsburgh BART Station* will be located in the Highway 4 median above a reconstructed Bailey Road interchange. The associated BART station parking lot will be located adjacent to the Oak Hills Shopping Center, as shown in Figure 14. This facility

would be the new easternmost station on what is now referred to as the "Concord" BART Line. The West Pittsburg BART extension and station are currently expected to be operational by 1997.

The *Concord Police Academy* facility is located on Avila Road west of the Ridge Farms property. This facility provides onsite training for police officers. The facility is located outside the City of Pittsburg in unincorporated Contra Costa County.



**d. Cumulative Development Trends In the Area**

Table 4 provides a current list of pending and anticipated development proposals in Pittsburgh. As explained earlier, the city's Southwest Hills subarea is identified in the Pittsburg General Plan as one of the community's primary residential expansion areas. Based on current general plan allowances and pending development proposals, the city anticipates that approximately 1,043 additional residential units, excluding the project, are expected to be constructed in the Southwest Hills planning area by the year 2005.

As also shown in Table 4, a total of 3,685 additional residential units, excluding the project, are currently pending or are anticipated citywide by the year 2005.

**2. IMPACTS**

**a. Onsite Land Use Impacts**

(1) Effects on Local Land Use Pattern. The proposed project would result in urban conversion of the largest of the five remaining, unsubdivided properties within the city's Southwest Hills planning area. As illustrated by Figure 14, the project would also result in a substantial westerly extension of southwest Pittsburgh urbanization. Although such buildout of the Southwest Hills planning area is generally consistent with the City of Pittsburgh General Plan, the overall effect of the project would be the loss of another principal local hillside open space element. This change would represent a significant loss of local open space values; i.e., *a significant adverse environmental impact.*

As shown earlier on Figure 2 (the aerial photograph), the Oak Hills subdivision represents the current urban edge of southwest Pittsburgh. Development of the project site would result in the extension of the city's southwest urban edge approximately one and one quarter miles further west.

The project site is separated from the existing edge of the Oak Hills subdivision by the intervening Alves property. Until development of the Alves property takes place, construction of the project would also represent a non-contiguous extension of urban development in the southwest area.

Construction of the San Marco project and associated freeway, arterial, and infrastructure improvements would be expected to have a substantial growth-inducing effect, increasing interest in and pressures for similar development of the adjacent Alves, DeBonneville, Ridge Farms, and Secon properties. This growth-inducing effect could represent *a significant adverse environmental impact.*

Table 4  
PENDING AND ANTICIPATED ADDITIONAL CUMULATIVE DEVELOPMENT

|                                   | <u>Single-Family</u> | <u>Townhome</u> | <u>Apartments</u> | <u>Totals</u> |
|-----------------------------------|----------------------|-----------------|-------------------|---------------|
| <b>San Marco Project</b>          | 1363                 | 339             | 1236              | 2938          |
| <b>Immediate Area</b>             |                      |                 |                   |               |
| Oak Hills                         | 66 <sup>4</sup>      | --              | --                | 66            |
| Oak Hills South                   | 477                  | --              | --                | 477           |
| Alves property                    | 500 <sup>5</sup>     | --              | --                | 500           |
| <b>City Wide</b>                  |                      |                 |                   |               |
| Sea Breeze                        | 27 <sup>4</sup>      | --              | --                | 27            |
| California Seasons                | 133 <sup>4</sup>     | --              | --                | 133           |
| River Run                         | 6 <sup>4</sup>       | --              | --                | 6             |
| Highlands Ranch                   | 589                  | --              | --                | 589           |
| Sky Ranch                         | 283                  | --              | --                | 283           |
| Fairway Glen                      | 18                   | --              | --                | 18            |
| Regency Mobile Home <sup>1</sup>  | 344                  | --              | --                | 344           |
| Riverview Park                    | 114                  | --              | --                | 114           |
| Marina Park                       | --                   | 24 <sup>4</sup> | --                | 24            |
| Highlands Ranch                   | --                   | 250             | 76                | 326           |
| Leland Village                    | --                   | 108             | --                | 108           |
| By the Waterfront                 | --                   | 16              | --                | 16            |
| Stone Terrace <sup>2</sup>        | --                   | --              | 24                | 24            |
| The Chatmor <sup>2</sup>          | --                   | --              | 100               | 100           |
| Crestview Apartments <sup>2</sup> | --                   | --              | 24                | --            |
| Rolling Hills <sup>3</sup>        | --                   | --              | 180               | 180           |
| Parkside                          | --                   | --              | 32                | 32            |
| Pebble Creek                      | --                   | --              | 126               | 126           |
| Atlantic Avenue                   | --                   | --              | 192               | 192           |
| <b>Total</b>                      | <b>3920</b>          | <b>737</b>      | <b>1990</b>       | <b>6623</b>   |

SOURCE: Wagstaff and Associates, based on consultation with the City of Pittsburg Department of Community Development, March 1992

<sup>1</sup> Mobile Homes

<sup>2</sup> Senior Apartments

<sup>3</sup> Congregate Care

<sup>4</sup> Approximate number of unoccupied units or remaining units to be constructed.

<sup>5</sup> No application submitted at this time. Estimate made by City of Pittsburg Planning Department staff.

(2) Changes in Onsite Land Use. The proposed project would result in the direct conversion of 639 acres of hillside grazing land to urban use. The existing barren range land would be replaced with a new suburban community including 1,363 single-family detached homes and 1,575 attached townhome and apartment units. The development would require the removal of all existing structures related to the existing farm complex, and the removal of all existing vegetation on the site with the exception of some grassland area within the larger "ranchette" lots proposed for Village N.

The proposed development plan would include grading of over 80 percent of the site area as a means of increasing the capacity of the site's knolls and draws to accommodate roads and homesites. Cut and fill depths of up to 140 and 180 feet, respectively, are proposed. Most of the existing creeks and draws would be culverted and covered to accommodate the project. Caltrans grading plans for the widening of Highway 4 would result in the filling of the existing stock pond on Shore Acres creek. The grading plan for the project would also result in the filling of the other existing man-made pond.

These physical changes to the site would not represent significant land use impacts. The geotechnical, drainage, visual, and biotic impacts of these changes are described in sections IV.D, IV.E, IV.F, and IV.G of this EIR, respectively.

(3) Conversion of Agricultural Land. The project site is not classified as prime agricultural land.<sup>1</sup> The US Soil Conservation Service soils suitability criteria indicate that the optimum agricultural use of the site soil is limited to rangeland.<sup>2</sup>

The proposed conversion of the 639-acre site from rangeland to urban use would eliminate any feasible potential for restoring earlier rangeland uses of the property. By eliminating over 600 acres of existing and potential rangeland area, the project would contribute substantially to the general trend in southwest Pittsburg away from rangeland uses, and to cumulative declines in the Contra Costa County rangeland inventory. Between 1940 and 1980, acreage in pasture and rangeland in Contra Costa County declined by an estimated 36 percent. More recent statistics indicate that pasture and range acreage in the county decreased by about four percent between 1985 and 1989, from 192,930 acres to 185,800 acres.<sup>3</sup> The additional project-related rangeland loss would represent approximately an 0.35 percent additional decline in the county's total pasture and rangeland inventory.

---

<sup>1</sup>Draft EIR on the City of Pittsburg General Plan, June 1987, page 41.

<sup>2</sup>Final Environmental Impact Report, Southwest Hills Annexation and General Plan Amendment, June 1987, pages 34 and 36.

<sup>3</sup>Contra Costa County, Agricultural Report, 1989.

In the interest of reconciling urban growth pressures in the county with the need to provide for the continued use of productive agricultural land, the Contra Costa County General Plan has established an *Urban Limit Line* which is intended to distinguish between those county lands which are to remain in agricultural production and rural use, and those that can be considered for urbanization. This policy is expected to reduce countywide cumulative declines in productive agricultural land to less than significant levels.

- r Conversion of the project site from rangeland to urban use would not constitute a significant adverse environmental impact, because: (1) none of the project site is classified as prime agricultural land; (2) the project site represents a small portion of the overall rangeland inventory in Contra Costa County; and (3) the project would not contribute to a significant countywide cumulative decline in agricultural productivity.
- r Development of the site, including the construction of project roads (e.g., Leland Road), may
- r not occur on those portions of the site covered by Williamson Act contract until February,
- r 1997 when the current agricultural preserve contract expires.

(4) Development Elevations. To date, urbanization in the Southwest Hills, Buchanan, and Woodland areas of the city has extended up to hillside elevations of approximately 350 feet. The pending Oak Hills South subdivision proposal would extend suburban density residential development up to an elevation of approximately 550 feet. The proposed project development plan (Figure 5) would extend suburban residential development up to hillside and ridgetop elevations of approximately 620 feet (the southern edges of villages F and G) and "ranchette" residential development up to an elevation of approximately 850 feet (Village N). Thus, the project would extend suburban density residential development to elevations approximately 270 feet higher than the highest existing suburban development, and would extend "ranchette" lots up to an elevation approximately 500 feet higher than existing major subdivisions in the Pittsburg hills. The visual impacts of this project aspect, which would be significant, are described in section IV.F of this EIR.

(5) Transmission Lines and Natural Gas Wells. The proposed project development plan (Figure 5) indicates that the existing PG&E electrical transmission lines would not be disturbed by the project. The USA electrical transmission line would be realigned within the site to accommodate aspects of the development plan. The points where the existing 50-foot easement for this USA line cross the east and west boundaries of the project would remain unchanged.

The existing 137.5-foot PG&E transmission line easement and the parallel 230 kV and 115 kV steel tower lines which it contains would form the northern edge of single-family villages H, J, and L, and the southern edge of multifamily Village M and the central community park, and would traverse and divide multifamily Village C.

The 50-foot USA transmission line easement and the 69 kV wooden tower line which it contains would be realigned as shown on Figure 5 to form the northernwestern edge of single-family villages E, K, and J, the southeastern edge of single-family villages D and L, and the northern edge of multifamily Village M. The estimated number of project single





family lot lines, and the estimated number of townhouse, apartment structures, and units which are near these transmission line easements, are indicated on Table 5.

Table 5 indicates that:

- the 230 kV PG&E transmission line easement edge would pass within 150 feet of approximately 66 single-family lots and within approximately 150 feet of seven townhome units;
- the 115 kV PG&E transmission line easement edge would pass within approximately 100 feet of 17 townhome and 60 apartment units;
- the 69 kV USA transmission line easement edge would pass within approximately 100 feet of 39 single-family lots and within approximately 100 feet of 120 apartment units.

PG&E and USA easement provisions require that the area within the easements be kept free of residential structures and other permanent physical obstructions to maintenance access. Landscaping and fencing would be acceptable. The residential layout shown on Figure 5 would be consistent with these limitations. No project residential structures or yards would be located within these easements. Beyond these easement requirements, PG&E has not adopted any additional guidelines or criteria with respect to residential setbacks from transmission lines. However, the quality and livability of these approximately 309 closest project homes could be substantially diminished by views of these lines and associated towers. These visual effects could represent *a significant adverse environmental impact*.

The issue of electrical and electromagnetic field (EMF) hazards which may be associated with these transmission lines is discussed in section IV.L of this EIR (Public Health and Safety).

The existing and realigned electrical transmission line easements have been incorporated into the project development plan as part of the community park or as landscaped open space corridors. A pedestrian trail is indicated along a portion of the realigned USA easement along the edges of villages J, K, and L. These uses would be consistent with PG&E and USA easement limitations.

The project development plan would apparently displace the natural gas well sites on the San Marco property. The hazard aspects of residential development atop these presumably capped well sites is addressed in section IV.L of this EIR (Public Health and Safety). Beyond these safety considerations, the displacement of these wells would not represent a significant adverse land use or energy resource impact. However, the elimination of these well sites could represent a substantial economic loss to the well operator (Chevron), who is currently conducting gas exploration activities on one of the sites, has invested in well facilities on the other sites and an associated underground gasline to carry the gas off the

**Table 5**  
**PROJECT HOUSING UNITS NEAR ELECTRICAL TRANSMISSION LINES**

|                                                           | Villages       |           |           |           |           |           |                | Total          |
|-----------------------------------------------------------|----------------|-----------|-----------|-----------|-----------|-----------|----------------|----------------|
|                                                           | <u>C</u>       | <u>D</u>  | <u>H</u>  | <u>J</u>  | <u>K</u>  | <u>L</u>  | <u>M</u>       | <u>(Units)</u> |
| Units within 150 feet of the<br>PG&E 230 kV line easement |                |           |           |           |           |           |                |                |
| Single-family lots                                        | --             | --        | 26        | 10        | --        | 30        | --             | 66             |
| Multifamily                                               |                |           |           |           |           |           |                |                |
| Structures                                                | 2 <sup>1</sup> | --        | --        | --        | --        | --        | --             | --             |
| Units                                                     | 7              | --        | --        | --        | --        | --        | --             | 7              |
| Subtotals (units)                                         | <u>7</u>       | <u>--</u> | <u>26</u> | <u>10</u> | <u>--</u> | <u>30</u> | <u>--</u>      | <u>73</u>      |
| Units within 100 feet of the<br>PG&E 115 kV line easement |                |           |           |           |           |           |                |                |
| Single-family lots                                        | --             | --        | --        | --        | --        | --        | --             | --             |
| Multifamily                                               |                |           |           |           |           |           |                |                |
| Structures                                                | 3 <sup>2</sup> | --        | --        | --        | --        | --        | 5 <sup>3</sup> | --             |
| Units                                                     | 17             | --        | --        | --        | --        | --        | 60             | 77             |
| Subtotals (units)                                         | <u>17</u>      | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>60</u>      | <u>77</u>      |
| Units within 100 feet of the<br>USA 69 kV line easement   |                |           |           |           |           |           |                |                |
| Single-family lots                                        | --             | 18        | --        | --        | 6         | 15        | --             | 39             |
| Multifamily                                               |                |           |           |           |           |           |                |                |
| Structures                                                | --             | --        | --        | --        | --        | --        | 8              | --             |
| Units                                                     | --             | --        | --        | --        | --        | --        | 120            | 120            |
| Subtotals (units)                                         | <u>--</u>      | <u>18</u> | <u>--</u> | <u>--</u> | <u>6</u>  | <u>15</u> | <u>120</u>     | <u>159</u>     |
| TOTALS (UNITS)                                            | <u>--</u>      | <u>42</u> | <u>26</u> | <u>10</u> | <u>6</u>  | <u>45</u> | <u>180</u>     | <u>309</u>     |

SOURCE: Wagstaff and Associates, based on review of project development plans (Figure 5). The term "units" refers to single-family lot lines and multifamily structures.

<sup>1</sup> Includes one entire structure and one unit within a second structure.

<sup>2</sup> Includes two entire structures and five units within a third structure.

<sup>3</sup> Includes two entire structures and a portion of three additional structures.

property, and has constructed a gas collector line beneath Highway 4 to carry gas from the project site and other Southwest Hills wells to the Chevron processing facility.

(6) Project Development Plan Relationship to Other Planning Considerations. The proposed range of residential types and densities within the project is consistent with the City of Pittsburg General Plan Land Use Map designations for the site (see Figure 13). The project also includes a central community park as called for by the city's Land Use Map. In addition, an approximately 95-acre area along the steepest and highest ridge at the southern portion of the site (Village N) is shown on the project development plan as five large lots. This area generally corresponds to the area of the site shown on the general plan Land Use Map as permanent *Open Space* (see Figure 13). To achieve general plan consistency, the project subdivision map would have to include a legal mechanism to ensure that the majority of each of these lots is preserved as undisturbed open space in perpetuity (e.g., a conservation easement). If such provisions are not included, the project would be inconsistent with the general plan, which would constitute *a significant adverse environmental impact*.

The project design does not indicate an Agricultural Preserve on the approximately 370 acres of Williamson Act contracted land, since existing onsite Williamson Act contracts will expire in 1997. However, under the current contract provisions, no development of these lands could take place prior to the expiration date.

The proposed culverting and filling of onsite creek channels would be inconsistent with Pittsburg General Plan provisions calling for the preservation and enhancement of creek open space, habitat, recreational, and aesthetic values. This inconsistency would represent *a significant adverse environmental impact*. The drainage and biologic impacts of these creek modifications are addressed in sections IV.E and IV.G of this EIR, respectively (Drainage and Water Quality, Vegetation and Wildlife).

The proposed use of onsite transmission line easements as part of the project community park and trail system would be consistent with Pittsburg General Plan Parks and Recreation Element policies regarding use of such easements.

#### **b. Project Impacts on Surrounding Land Use**

(1) General. The city's recent and pending southwest area annexations (109 and 116, respectively) include approximately 1,251 acres of undeveloped hillside land (see Figure 12). The 639-acre project site represents the largest single assembled ownership within this annexation area. The proposed development of the site would involve 51 percent of this total annexation area and would represent a major contribution to the anticipated cumulative trend of hillside open space conversions to residential use in southwest Pittsburg. Development of the project would represent a substantial change in the overall land use character and visual appearance of the southwest area. The land impacts of the 639-acre

project on the adjacent Alves, DeBonneville, Ridge Farms, and Seecon properties, and on the nearby Sea Breeze, Oak Hills, and Oak Hills South subdivisions, are described below. The visual impacts of the project are described in section IV.F of this EIR (Visual Factors).

(2) Alves Property. Existing land use activities on the Alves property which could have land use compatibility impacts on project residential uses--i.e., the quarry, construction equipment yard, materials storage yard, and related truck traffic--are currently located away from the project boundary and would be separated from the nearest project homes in villages A, G, H, and M by a distance of approximately 450 to 1,500 feet. As a result, these existing Alves property activities would not be expected to result in significant nuisance effects on project homes. However, because the rear lot line of approximately 36 single-family lots (villages A, G, and H) and the edges of three apartment blocks (Village M) would be introduced along the eastern boundary of the site, existing or future grazing activity on the Alves site may result in complaints from the new San Marco homeowners and tenants about nuisance aspects, such as flies and odors.

Other potential project impacts on current Alves ranching operations include the possibility of increased frequency of injury to livestock by project domestic dogs, increased potentials for grass fires, and increased incidences of trespassing and vandalism. These effects could represent *significant interim adverse land use impacts* on the Alves property (until the Alves site is converted to residential use, as anticipated in the city's general plan).

With respect to the proposed general plan and zoning changes on the Alves property, these residential and open space land use revisions are similar to, and have been coordinated with, the land use designations shown for the San Marco site, and appear to be compatible. No adverse future land use compatibility impacts are anticipated.

(3) DeBonneville Property. The project preliminary grading plan shows that a limited amount of grading would be required on the DeBonneville property to accommodate the San Marco project. Permission from the DeBonneville property owner would be necessary to allow this encroachment.

The proposed project would locate the rear yards of approximately 13 single-family residential lots in Village D immediately adjacent to the DeBonneville property. Introduction of these project homes could result in nuisance complaints by the new homeowners regarding existing kennel activities on the DeBonneville property (noise, etc.). The proposed DeBonneville Animal Center may also result in nuisance complaints. While the proposed Animal Center would not include any kennels within 300 feet of the project property line, animal boarding activities at the center could create significant adverse noise, odor, and pest-related impacts on these 13 project homes. The project residences in Village D could also be subject to adverse noise impacts generated by visitors to the center at anticipated special events. Domestic pets from the project could also disturb the animal population at the center. These effects could represent *significant adverse land use impacts*.

(4) Ridge Farms. Two or three of the lots on the northwest corner of Village D would share their rear lot line with the Ridge Farms property. These lots would be within approximately 200 feet of existing livestock paddocks and within 300 feet of other existing Ridge Farms activities which may not be compatible with residential uses (stables, truck and other vehicle storage, etc.). In addition, livestock grazing activity may extend to the shared property line. The introduction of these two to three project homes near these existing activities could result in future nuisance complaints from the new homeowners (livestock odors, noise, flies, etc.). These effects could represent *a significant adverse land use impact*.

The townhome structures in Village C would be sufficiently separated from the Ridge Farms property. No significant adverse land use impacts would be anticipated.

(5) Seecon Property. Approximately 16 of the medium sized single-family lots along the southern edge of Village G, and 11 "ranchette" lots along the southern and western edges of Village N, would share rear boundaries with the adjacent Seecon property. The large size of the ranchette lots would allow substantial setbacks from this property line which would reduce any compatibility impacts between the project residential uses and grazing activity on the Seecon property. Nevertheless, the introduction of these 16 single-family homes adjacent to existing grazing activity could result in the same types of *significant land use compatibility impacts* described earlier for the Alves property (nuisance complaints, livestock disturbance by domestic pets, trespassing, vandalism, and an increase in grass fire risk).

(6) Sea Breeze. The Sea Breeze subdivision is located across Highway 4 and Evora Road from the proposed project. The substantial separation between the project and the Sea Breeze development (over 550 feet) would prevent any significant direct land use compatibility impacts. The gross density of the San Marco project, at 4.4 units per acre, would be similar to the 4.1 units per acre density of the Sea Breeze subdivision.

(7) Oak Hills. The existing Oak Hills subdivision is separated from the project by the 1,300-to-2,600-foot wide Alves property. As a result, there would be no direct land use compatibility impacts between the project and the Oak Hills Development. The gross density of the San Marco project, at 4.4 units per acre, would be slightly less than the approximately 5.1 unit per acre density of the existing Oak Hill subdivision. This difference in gross density is largely due to the proposed designation of approximately 95 acres at the uppermost, steepest portion of the San Marco site as permanent open space.

(8) Oak Hills South. The pending Oak Hills South project would also be separated from the project site by the Alves property. As a result, no significant direct land use compatibility impacts would occur. In keeping with general plan Land Use Map designations for the Oak Hills South site (shown primarily as *Rural Residential* on Figure

13), the proposed gross density of the Oak Hills South project would be substantially lower than the San Marco project (2.3 vs. 4.4 units per acre).

(9) Highway 4. The proposed introduction of numerous project multifamily and single-family units within approximately 200 feet of the edge of the reconstructed Highway 4 freeway could result in significant impacts relating to the compatibility of residential land uses with freeway traffic-generated noise and air pollution emissions. These two impact issues are discussed in detail in Section IV.I, and IV.J of this SEIR (Noise and Air Quality).

The completion of the proposed highway improvement project, including the raising of the highway to provide a grade-separated overcrossing of the Willow Pass Road extension, and the construction of associated on- and offramps, would further separate the project site from the land uses on the north side of the highway.

r (10) Concord Naval Weapons Station Impacts. The Concord Naval Weapons Station  
r Master Plan designates "Explosive Safety Quantity Distance" (ESQD) arcs which have been  
r established to indicate the desired minimum separation distance between inhabited buildings  
r and explosive operations facilities. These "arc" areas are restricted by easements from  
r intensive land use, but can continue to be used as grazing land. The ESQD arcs on the  
r east side of the station extend approximately to the Navy's property line in the project  
r vicinity. The arcs do cross over the Navy property line onto private property at locations  
r nearest (south of) the project site. The ESQD arcs are located approximately 300 feet  
r away from the proposed project site at their closest point.

r Due to the location of the proposed project boundary and residences an additional 300 feet  
r beyond the established safety setback, and the fact that the project is protected from the  
r actual storage facilities by the topography of the Naval Station property, no significant land  
r use compatibility impact related to the station has been identified.

r The Navy has determined that "limited" impacts could occur to "unstrengthened" structures  
r beyond the designated arcs, but that no direct impacts to individuals would occur. The  
r small likelihood of impacts to persons or property outside the designated arcs has resulted  
r in no Navy, City of Pittsburg, or Contra Costa County land use policies or restrictions  
r applicable to those areas. No significant impacts from the Naval Station activities on project  
r homes or occupants have been identified.

r (11) Impacts on Surrounding Agricultural Resources. As explained above, the introduction  
of suburban density residential development adjacent or in proximity to remaining pasture  
and rangelands (e.g., the Alves, DeBonneville, Ridge Farms, and Seeno properties) could  
result in disturbance to neighboring livestock by project domestic animals, and could also  
result in significant problems for existing agricultural operations on these properties in the  
form of nuisance complaints from the new project residents.

In addition, the development of the project site, in combination with eventual development of all other areas within the southwest area annexation boundaries (Annexation 109 and 116), could ultimately result in the loss of approximately 1,251 more acres of rangeland. This cumulative total loss would represent a 0.67 percent decline in the countywide rangeland inventory. However, none of these converted lands would involve prime agricultural soils. The certified EIR for the city's southwest boundary change did not describe this cumulative loss of agricultural land as a significant impact.

- r (12) Other Local Land Use Activities. None of the other prominent existing land uses in the immediate project vicinity would have direct land use compatibility problems with the project, due primarily to their adequate separation from the San Marco site.

**d. Impacts on Cumulative Development Trends in the Area**

As explained earlier, the Southwest Hills are considered to be one of the community's primary residential expansion areas. Based on current remaining units to be constructed in the Oak Hills subdivision, plus the assumed development capacity of the Oak Hills South and Alves properties, the city anticipates that these three southwest area properties, plus the project, could be expected to ultimately yield a cumulative total of 3,981 additional homes (see Table 4). The project would account for approximately 75 percent of this Southwest Hills planning area increase.





As also shown in Table 4, the project, in combination with all pending and anticipated cumulative development citywide, would be expected to add approximately 6,622 additional residential units to the city by the year 2005, a 29 percent increase over the city's 1990 household total.

Successful development and buildout of the project and completion of the related highway interchange, arterial roadway extensions (Willow Pass and Leland roads), and extensions of other associated infrastructure (sewer and water), would be expected to substantially increase pressures for similar development of other surrounding southwest Pittsburg lands, including the recently annexed Alves site, the pending DeBonneville and Ridge Farms annexations, and eventually other lands in the project vicinity, including the adjacent Seeno property to the south. Of these four properties, only the Alves property is designated by the city's general plan for residential use. The DeBonneville, Ridge Farms, and Seeno properties are all designated as *Open Space* by both the general plan and the zoning ordinance. As a result, any urban development of these three properties would require city approval of another general plan amendment. Thus, additional yields beyond those anticipated in Table 4 could only occur if annexation was approved and a general plan amendment was also advocated and approved for each of these three properties. Assuming such a future occurrence for the DeBonneville and Ridge Farms properties (both are included in pending Annexation 116), the two sites could eventually yield an additional 200 to 500 new units (approximate).

### 3. MITIGATIONS

#### a. Onsite Land Use Impacts

(1) Effects on Local Land Use Pattern. Although the project site is designated in the city's general plan for urban development with a general intensity and geographic pattern similar to what is being proposed, construction of the project would nevertheless result in a subsequent loss of local open space value. This general plan and project impact would be unavoidable, and for all practical purposes, unmitigable unless the general plan development designations and corresponding project size and development area were substantially reduced and confined to the lower elevations of the site (i.e., below 350 feet).

Project growth-inducing effects on the adjacent <sup>Alves</sup> Alves, DeBonneville, Ridge Farms, and Secon properties would be subject to similar individual rezoning, environmental impact documentation, and public review procedures which have been established to ensure that associated adverse impacts and related mitigation needs are adequately addressed.

(2) Changes in Onsite Land Use. No significant adverse land use impacts have been identified; no mitigation is required.

(3) Conversion of Agricultural Land. No significant adverse land use impacts have been identified; no mitigation is required. However, development of the project site cannot occur prior to 1997 unless existing Williamson Act contracts are cancelled. Such cancellation would require the payment of penalty fees and the approval of the Contra Costa County Board of Supervisors.

(4) Development Elevations. The visual impacts of the project hillside development elevations would be unavoidable and unmitigable unless the general plan Land Use Map and associated policies were changed to confine development to the lower elevations of the project site.

(5) Transmission Lines and Natural Gas Wells. For all single-family lots and all multifamily units within 150 feet of the edge of the onsite PG&E 230 kV transmission line easements, or within 100 feet of the edge of the existing PG&E 115 kV or USA 69 kV power line easements, the visual impact of the existing transmission towers and lines should be reduced through incorporation in the project landscaping plan of strategic planting of screen vegetation.

Similarly, strategic landscaping should also be used at other key onsite vantage points with views of these transmission lines and towers in order to reduce their adverse impact on the visual quality of the community (i.e., strategic streetside and median planting along affected segments of the key project travel corridors, strategic planting along affected community park areas, etc.).

Even with these recommended measures, however, these adverse land use compatibility (visual impacts) could not be reduced to less than significant levels and would be unavoidable, given the height and prominence of the existing tower lines.

For mitigation of potential health (EMF) hazards associated with these lines, see section IV.L.3 of this EIR.

(6) Project Development Plan Relationship to Other Planning Considerations. To achieve project consistency with the city general plan Land Use Map *Open Space* designation for the approximately 95-acre area along the southern ridgeline portion of the site now shown on the project development plan as five large lots (Village N), include on the project final map a legal mechanism, such as a *conservation easement*, which applies to a majority (at least 85 percent) of each of these five lots and includes the ridgeline, stipulating that the designated area shall be preserved as undisturbed open space in perpetuity.

To mitigate identified project impacts on creek open space, habitat, aesthetic, and recreational values, adopt mitigation measure c from section IV.G.3 of this EIR (Vegetation and Wildlife, page IV.G--10).

**b. Project Impacts on Surrounding Land Uses**

**(1) General.** Any precedent-setting and growth-inducing impacts of the project would occur in the form of individual, separate residential development proposals and applications for nearby sites (Alves, DeBonneville, Ridge Farms, and/or Seecon). Each such action would require applicant submittal and city approval of individual general plan amendment and rezoning applications (DeBonneville, Ridge Farms, and Seecon), and similar environmental impact documentation and public review procedures to ensure that associated significant adverse impacts are adequately addressed. These city requirements and procedures would be expected to reduce such growth-inducement impacts to less than significant levels.

**(2) Alves Property.** Implementation of the following measures would be expected to reduce project direct impacts on adjacent rangeland and other interim agricultural activity on the Alves property to less than significant levels:

- All prospective buyers of lots or homes in the San Marco project should formally be made aware (in writing) of potential nuisances from abutting and nearby animal grazing and other agricultural practices.
- City leash laws are currently in effect. In addition, strict onsite leash requirements should be established in the form of project CC&Rs to control dogs owned by residents of the project and to minimize related impacts on local livestock and equestrian activities.
- Special, dog-proof fencing may be required in areas susceptible to dog intrusion into existing adjacent agricultural operations sufficient to mitigate project impacts.

**(3) DeBonneville Property.** Implement the same measures listed above for mitigation of project impacts on the Alves property. In addition, if the animal center proposal approved by the county prior to the pending annexation of this property to the city is advanced by the proponent, city conditions of project approval should specify limitations to be placed on the location, design and operation of the proposed animal hospital, grooming facilities, show facilities, exhibit hall, pet boarding facilities, office activities, and recreational vehicle area, in order to minimize related impacts on nearby San Marco project homes.

**(4) Ridge Farms.** Implement the same measures listed above for mitigation of project impacts on the Alves property.

**(5) Seecon Property.** Implement the same measures listed above for mitigation of project impacts on the Alves property.

**(6) Sea Breeze.** No significant adverse land use impacts have been identified; no mitigation is required.

(7) Oak Hills. No significant adverse land use impacts have been identified; no mitigation is required.

(8) Oak Hills South. No significant adverse land use impacts have been identified; no mitigation is required.

(9) Highway 4. Mitigations for freeway-related traffic noise and air emissions impacts are described in sections IV.I.3 and IV.J.3 of this EIR (Noise and Air Quality mitigations).

r (10) Concord Naval Weapons Station. No significant adverse land use impacts have been  
r identified and no mitigation measures are required. Nevertheless, the city should consider  
r requiring all project property owners and residents be informed of the proximity to the  
r Concord Naval Weapons Station, and the extent to which the activities of the station could  
r affect residents of the project, as suggested in the Master Plan for the Naval Weapons  
r Station, Concord, California, and the Navy Publication NAVSEA OP 5 Volume I, 5th  
r Revision, Ammunition and Explosives Ashore -- Safety Regulations for Handling, Storing,  
r Production, Relocation, and Shipping, August 1, 1990.

r (11) Impacts on Surrounding Agricultural Resources. No significant adverse land use  
impacts have been identified; no mitigation is required.

r (12) Other Local Land Use Activities. No significant adverse land use impacts have been  
identified; no mitigation is required.

**d. Impacts on Cumulative Development Trends In the Area**

No significant adverse land use impacts have been identified; no mitigation is required.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
IV.A. Land Use  
Page 110

---

## B. POPULATION AND HOUSING

---

This section describes: (1) current trends in population and housing in Pittsburg, including the local ratio between housing and jobs; (2) the potential impacts of the San Marco project on these trends; and (3) any mitigation measures warranted to address related significant adverse effects.

### 1. ENVIRONMENTAL SETTING

#### a. Population and Housing Trends

1. Population. Table 6 shows current population totals and trends for the city of Pittsburg in comparison to the county as a whole, as compiled by the Association of Bay Area Governments (ABAG). In 1990, the ABAG-estimated population of the city of Pittsburg planning area<sup>1</sup> was 62,700 people. This total represented approximately 6.7 percent of the 1990 Contra Costa County population total.

The Table 6 data also indicates that the population of the Pittsburg planning area grew by approximately 43 percent (an increase of 18,857 people) over the 10 year period between 1980 and 1990. During the same time period, the population of Contra Costa County as a whole grew by 20 percent (133,620 people). This disproportionately high Pittsburg growth rate reflects the significant local urbanization trends over the past decade which are described in the Land Use section of this EIR (section IV.A).

The projected 1990-to-2005 population increase for the Pittsburg planning area is 21 percent (12,900 people) for the 15 year period, reflecting a substantial post-1990 decline in the anticipated rate of local growth. Pittsburg's projected 1990-to-2005 population increase is comparable to that anticipated for the county as a whole, which is projected to be approximately 20 percent (156,900 people). The county population figures indicate that approximately the same countywide growth increment is anticipated for the next 15 years that was experienced over the previous 10 years, reflecting a substantial decline in the anticipated rate of countywide growth.

---

<sup>1</sup>The planning area includes the incorporated portion of the city and the surrounding city Sphere of Influence.

Table 6

**LOCAL POPULATION AND HOUSING TRENDS--RECENT AND PROJECTED**

|                            | <u>1980</u> | <u>1990</u> | <u>Change<br/>(10 years)<br/>1980-1990</u> | <u>Projected<br/>2005</u> | <u>Projected<br/>Change<br/>(15 years)<br/>1990-2005</u> |
|----------------------------|-------------|-------------|--------------------------------------------|---------------------------|----------------------------------------------------------|
| <i>Pittsburg</i>           |             |             |                                            |                           |                                                          |
| Population                 | 43,843      | 62,700      | 18,857 (+43%)                              | 75,600                    | 12,900 (+21%)                                            |
| Households                 | 15,207      | 22,680      | 7,473 (+49%)                               | 28,690                    | 6,010 (+26%)                                             |
| <i>Contra Costa County</i> |             |             |                                            |                           |                                                          |
| Population                 | 656,380     | 790,000     | 133,620 (+20%)                             | 946,900                   | 156,900 (+20%)                                           |
| Households                 | 241,534     | 303,690     | 62,156 (+26%)                              | 380,790                   | 77,100 (+25%)                                            |

SOURCE: Association of Bay Area Governments, Projections '90, December 1989.

2. Population Per Household. There were an estimated 2.74 persons per household in Pittsburg in 1990. ABAG projects that the average household size in Pittsburg will decrease to 2.64 by the year 2005.<sup>1</sup>

3. Housing. As shown in Table 6, the number of households (or housing units) in the Pittsburg planning area totalled approximately 22,680 in 1990, representing approximately 6.3 percent of the countywide total. The Pittsburg household total increased by 49 percent (7,473 households) between 1980 and 1990. The number of housing units in the county as a whole increased by 26 percent (62,156) over the same period, indicating that Pittsburg experienced almost twice the rate of housing growth as the county over the last decade.

The predominant housing type which has characterized this recent Pittsburg growth has been the single-family detached home in the form of new subdivisions ranging in density from five to six units per acre. The ABAG projections in Table 6 indicate that, similar to population, the rate of housing growth experienced over the past decade is expected to decline significantly over the next decade and a half.

<sup>1</sup>Association of Bay Area Governments, Projections '90, December 1989, page 126; the City of Pittsburg, 1990 Draft Housing Element, page 11, anticipates a lower figure, stating that by 1995, the city's average household size will be 2.61.



b. Projected Housing Needs

1. ABAG Housing Needs Determination. Under Section 65581.4 of the California Government Code, cities and counties are required to make a sustained, serious effort to provide for their appropriate share of regional housing needs, as determined by local councils of governments. In pursuit of this mandate, the Association of Bay Area Governments (ABAG), which is the council of governments for the nine-county San Francisco Bay region, periodically makes housing needs determinations for each city and county in the region. The determinations are based on anticipated employment opportunities, commuting patterns, and site availability for residential development in the planning area.<sup>1</sup>

2. Housing Needs by Income Level. State law also requires ABAG to determine housing needs for each city and county in the region in terms of four specified income levels, so that each jurisdiction can make plans to provide for its "fair share" of regional housing needs by income group. To describe these housing needs, ABAG uses the income categories of **very low** for household incomes of up to 50 percent of the median income for the region, **low** for 51 to 80 percent of the median regional income, **moderate** for 81 to 120 percent of the median regional income, and **above moderate** for household incomes greater than 120 percent of the median regional income.

3. Pittsburg Housing Needs. ABAG-projected housing needs for the city of Pittsburg planning area are shown in Table 7. The City of Pittsburg 1990 Draft Housing Element (a state-required component of the city's General Plan) reports that the ABAG-projected total housing need for Pittsburg between 1990 and 1995 is 1,908 units.

Table 7 also shows that the ABAG-determined city of Pittsburg share of projected regional housing needs by income level for the 1990-1995 period, as of 1990, included 439 units affordable to **very low** income households, 286 units affordable to **low** income households, 419 affordable to **moderate** income households, and 764 units affordable to **above moderate** income households. These "fair-share" totals represent the number of additional Pittsburg homes needed in each income category over this period in order to achieve an equitable distribution of housing opportunities.<sup>2</sup>

c. Jobs/Housing Ratio

The term "jobs/housing ratio" is commonly used to describe the relationship between the number of local jobs available and the number of local employed residents. To the degree that a balance is achieved between the number of local jobs and the number of local employed residents, there is a greater opportunity for local residents to work close to where

---

<sup>1</sup>San Francisco Bay Area Housing Needs Determinations, January, 1989, page 20.

<sup>2</sup>City of Pittsburg, 1990 Draft Housing Element, page 13.

they live. A balanced local "jobs/housing ratio" therefore tends to reduce a community's contribution to regional traffic congestion, noise, and air quality impacts.

Table 8 illustrates the job-housing ratio trend for Pittsburgh in comparison to the county as a whole. The table indicates that in 1990, Pittsburgh and the county as a whole had substantially more employed residents than jobs. For Pittsburgh, there were 14,610 local jobs and 28,100 employed residents in 1990, or 0.52 jobs per employed resident. This 1990 Pittsburgh jobs per employed resident ratio was about the same as it was in 1980.

These Table 8 figures reflect the obvious, that a large number of Pittsburgh residents commute to jobs located outside the city. US Census data indicates that, in 1980, 74 percent of the employed residents in Pittsburgh commuted out of the city to work.<sup>1</sup> The data in Table 8 suggest that this percentage has probably not changed substantially since 1980.

By 2005, ABAG projects that there will be 20,880 jobs and 36,400 employed residents in Pittsburgh, or 0.58 jobs per employed resident. These projections reflect an anticipated slight improvement in the local jobs/housing ratio, and possibly a corresponding minor decrease in outcommuting and associated traffic congestion by 2005.

## 2. PROJECT IMPACTS

### a. Population and Housing Impacts

1. Project Impacts. The proposed housing types breakdown for the San Marco project is described in Table 2 herein (under Project Description). The project sponsor proposes to construct 2,938 residential units, including 1,363 single-family units and 1,575 multi-family units. The proposed 1,575 multi-family units include 1,236 apartments and 339 townhomes. The single-family units would each contain three to four bedrooms and two to three bathrooms. The multi-family units would each contain one to three bedrooms and one to two and one-half baths.

Based on an anticipated average of approximately 2.63 persons per household in Pittsburgh by the year 2005, the 2,938 project units would be expected to accommodate a population of approximately 7,730 persons.<sup>2</sup> Assuming that all project phases are completed and occupied by the year 2005 (a conservative "worst case assumption"), the project population

---

<sup>1</sup>Metropolitan Transportation Commission, 1980 Census Journey-to-Work: City-to-City Commuters by Mode of Travel, Alameda and Contra Costa Counties, Data Release #5, June 1986, page 8.

<sup>2</sup>2.63 persons per unit X 2,938 units = 7,727 persons. The population per household figure is contained in the City of Pittsburgh 1990 Draft Housing Element and ABAG's Projections '90.

Table 7

PROJECTED HOUSING NEEDS IN PITTSBURG BY INCOME CATEGORY: 1990 TO 1995

|           | <u>Very<br/>Low</u> | <u>Low</u> | <u>Moderate</u> | <u>Above<br/>Moderate</u> | <u>Total<br/>Projected<br/>Need</u> |
|-----------|---------------------|------------|-----------------|---------------------------|-------------------------------------|
| 1988-1995 | 899                 | 587        | 860             | 1,564                     | 3,910                               |
| 1990-1995 | 439                 | 286        | 419             | 764                       | 1,908                               |

SOURCES: Association of Bay Area Governments, San Francisco Bay Area Housing Needs Determinations, January, 1989 and City of Pittsburg, 1990 Draft Housing Element.

Table 8

JOBS/HOUSING RATIO--PITTSBURG PLANNING AREA VS. CONTRA COSTA COUNTY

| <u>Year</u> | <u>Jobs</u>      |               | <u>Employed Residents</u> |               | <u>Number of Jobs per<br/>Employed Resident</u> |               |
|-------------|------------------|---------------|---------------------------|---------------|-------------------------------------------------|---------------|
|             | <u>Pittsburg</u> | <u>County</u> | <u>Pittsburg</u>          | <u>County</u> | <u>Pittsburg</u>                                | <u>County</u> |
| 1980        | 9,164            | 201,237       | 17,205                    | 307,476       | 0.53                                            | 0.65          |
| 1990        | 14,610           | 292,700       | 28,100                    | 407,800       | 0.52                                            | 0.72          |
| 2005        | 20,880           | 389,440       | 36,400                    | 512,600       | 0.58                                            | 0.76          |

SOURCE: Association of Bay Area Governments, Projections '90, December 1989.

increase would represent approximately 60 percent of the ABAG-projected Pittsburgh area population increase of 12,900 people between 1990 and 2005.

In terms of households, the 2,938-unit project would account for approximately 49 percent of the ABAG-projected increase of 6,010 households in the Pittsburgh area between 1990 and 2005, and almost four percent of the ABAG-projected county-wide increase of 77,100 households during the same fifteen year period (see Table 6).

**2. Cumulative Impacts.** As shown in Table 4 in the Land Use section of this EIR (section IV.A) and Table 9 in this section, development proposals for approximately 874 new housing units, not including the project, are either pending or anticipated in the immediate vicinity of the San Marco site with occupancy possible by the year 2005. Based on the projected year 2005 average of approximately 2.63 persons per household, the population in the immediate vicinity of the San Marco site, not including the project, could be expected to increase by approximately 2,010 persons by the year 2005. As shown in Table 9, with the project, the housing unit total in the immediate area could be expected to increase by 3,812 units, and the population in the vicinity could be expected to increase by about 8,768 persons.

As also shown in Tables 4 and 9, there are an estimated 3,489 new housing units pending or anticipated citywide, without the project, between 1990 and 2005. Based on an estimated average of 2.63 persons per household, these 3,489 units would yield an additional population of approximately 8,025 persons, representing a 13 percent increase over the 1990 total. With the proposed project, the citywide housing unit total could be expected to increase by 6,427 units, and the population by approximately 14,782 persons, a 23 percent increase over the 1990 total. Table 9 also shows that these projected increases with the project slightly exceed the Projections '90 numbers for Pittsburgh which were published in December 1989 by ABAG.

These estimated project and cumulative population and housing increases would represent significant changes in present city demographic characteristics. The environmental impacts of these cumulative demographic changes, including their land use, transportation, municipal services, visual, noise, and air quality impacts, are described in the other corresponding impact sections of this EIR.

**b. Project Impacts on Projected Housing Needs**

The project sponsor proposes to provide a variety of housing types, sizes, and prices in the San Marco project in order to attract a wide range of renters and buyers.

Table 9

CUMULATIVE POPULATION AND HOUSING IMPACTS--CITY OF PITTSBURG

|                                     | <u>Housing<br/>Units</u> | <u>Population</u> |
|-------------------------------------|--------------------------|-------------------|
| ABAG-estimated 1990 citywide totals | 22,680                   | 62,700            |
| ABAG-projected 2005 citywide totals | 28,690                   | 75,600            |
| ABAG-anticipated 1990-2005 increase | 6,010                    | 12,900            |
| EIR-anticipated increases:          |                          |                   |
| Immediate area without project      | 874                      | 2,010             |
| Immediate area with project         | 3,812                    | 8,768             |
| Citywide without project            | 3,489                    | 8,025             |
| Citywide with project               | 6,427                    | 14,782            |

SOURCE: Wagstaff and Associates, based on consultation with the City of Pittsburgh Department of Community Development, April 1992.

(1) Single Family Units. Assuming that the 1,373 single-family homes in the project would sell for a price comparable to that of the nearby Oak Hills subdivision, the sales prices of the single-family units would range from \$180,000 to \$240,000 in 1992 dollars.<sup>1</sup> It is estimated that a household income of approximately \$59,000 per year or more (in 1992 dollars) would be necessary to afford a \$180,000 home (assuming a down payment of 13 percent, a mortgage interest rate of 10 percent, and a mortgage term of 30 years). An annual income of \$77,000 would be necessary to afford a \$240,000 home (assuming a down payment of 20 percent, a mortgage interest rate of 10 percent, and a mortgage term of 30 years).<sup>2</sup> An income of \$59,000 per year is considered by the EIR authors to be at the middle of the ABAG-defined *moderate* income range, and an income of \$77,000 is considered to exceed the high end of the *moderate* income range by approximately 18 percent, based on an estimated 1995 median income range for the Bay Area of

<sup>1</sup>Based on local and regional newspaper advertising.

<sup>2</sup>See Housing Affordability Worksheet in Appendix B of this EIR.

approximately \$43,000 to \$65,000 in 1992 dollars.<sup>1</sup> Thus, if the single-family units were to sell in the \$180,000 to \$240,000 price range, over one half of the project homes would be affordable to households in the *moderate* income category.

(2) Multi-Family Units. It is estimated that 1,565 multi-family units in the project would also sell or rent at prices similar to the nearby Oak Hills subdivision. The sales prices in Oak Hills for multi-family (townhouse) units range from \$85,000 to \$150,000, and rental rates range from \$800 to \$1,400 per month, based on recent advertising. It is estimated that a household income of approximately \$28,000 per year or more (in 1992 dollars) would be necessary to afford a \$85,000 home. An annual income of approximately \$50,000 or more would be necessary to afford a \$150,000 home. An annual income of between \$28,800 and \$50,400 would be necessary to afford a monthly rental range of between \$800 and \$1,400. Based on these figures, none of the project's 1,565 multi-family units would be affordable to households in the *very low* income range. Some would be affordable to households in the *low* income range, and all of the remainder would be affordable to households in the *moderate* income range.

In summary, based on the anticipated price and rental ranges described above, none of the 2,968 project homes would be affordable to households in the *very low* income range, roughly 25 to 30 percent would be affordable to households in the *low* income range, roughly 45 to 50 percent would be affordable to households in the *moderate* income category, and roughly 25 percent would be affordable to households in the *above moderate* income category.

c. Jobs-Housing Ratio

Unless the ABAG-projected rate of local job growth over the next 15 years is substantially exceeded due to greater than anticipated local business growth, the proposed San Marco project would reduce the ratio of local jobs to local employed residents in the Pittsburgh area. Based upon the figures in Tables 8 and 9, the project would be expected to reduce the number of jobs per employed resident in Pittsburgh in the year 2005 from 0.76 (the current ABAG projection) to approximately 0.68. This increased imbalance may not represent a significant adverse impact, but would nevertheless result in decreased opportunities for local residents to work close to where they live, and associated decreased opportunities to reduce outcommuting and related traffic congestion and air quality impacts. This adverse effect will be more than offset, however, by the proximity of the San Marco project to the new West Pittsburgh BART station at Bailey Road.

---

<sup>1</sup> *Moderate* income is defined by HUD as 81 to 120 percent of the regional median income. The projected 1995 median income for the region is \$48,900 in 1988 dollars, according to ABAG Projections '90, page 69, which amounts to approximately \$54,000 in 1992 dollars. Thus, the *moderate* income range would be between \$43,740 and \$65,340.

### **3. MITIGATION MEASURES**

#### **a. Population Impacts**

The proposed project demographic impacts relating to population and housing growth would not, in and of themselves, represent significant environmental impacts. Mitigation needs associated with the environmental impacts of the project demographic changes on such environmental factors as land use, transportation, municipal services, visual factors, vegetation and wildlife, noise, and air quality, are described in corresponding chapters of this EIR.

#### **b. Project Impacts on Projected Housing Needs**

No significant adverse impacts on local abilities to meet ABAG-identified "fair share" housing affordability goals have been identified. No mitigation measures are required.

#### **c. Jobs-Housing Ratio**

No significant adverse impacts have been identified. No mitigation measures are required.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
IV.B. Population and Housing  
Page 120



---

## C. TRANSPORTATION

---

This section describes potential impacts of the project on the operation and safety of the transportation system in the project vicinity, including principal local streets, collectors and arterials, local Highway 4 freeway segments and ramps, related intersections, and local transit service. The section also describes the impacts of anticipated cumulative traffic increases in the area on the local and regional transportation system. The adequacy of project access and internal circulation plans is also described. The findings in this section were completed by the Crane Transportation Group (CTG) based upon original, project-specific analysis as well as a compilation of data from numerous previous traffic studies involving the project area.

### 1. SETTING

#### a. Regional Access

The Highway 4 freeway provides primary regional access to the City of Pittsburg, as diagrammed on Figure 15.

*Highway 4* runs east-west and serves as a major highway route from its western terminus at Interstate 80 in Pinole to Interstate 5 in Stockton, and east to State Route 89 near South Lake Tahoe. Between State Route 242 in Concord and Route 160 in Antioch, the Highway maintains two through lanes in each direction with two exceptions: the highway has three eastbound lanes between Willow Pass Road-Concord and the Willow Pass summit, and three westbound lanes between Willow Pass Road-Pittsburg and Willow Pass Road-Concord. The third lanes along these two segments are predominantly used by trucks climbing Willow pass grade, except during commute periods when auto use is predominant in all lanes. The highway lanes are 12 feet wide, with 10-foot wide outside shoulders, two-foot wide inside shoulders, and an average median width of six feet. Vertical grades near the Willow Pass summit are 6.8 percent eastbound and 6.0 percent westbound.

Highway 4 interchanges in the project area are located at Willow Pass Road-Concord (a full diamond interchange with stop sign controlled off-ramp intersections), Willow Pass Road-Pittsburg (an eastbound off-ramp and westbound on-ramp only), and Bailey Road (a full tight diamond interchange with stop sign controlled off-ramp intersections).

**b. Local Roadway System**

**(1) Principal Local Roadways.** The local roadway system in the project vicinity is also diagrammed in Figure 15.

*Bailey Road* is a north-south arterial roadway extending from Clayton Road in Concord to Willow Pass Road in Pittsburgh. Between Willow Pass Road and Leland Road, Bailey Road maintains four travel lanes and provides direct access to Highway 4 and BART's existing park-and-ride lot at the Highway 4/Bailey Road interchange. Bailey Road has two travel lanes south of Leland Road to the City of Concord. Bailey Road currently has signalized intersections with Leland Road, Maylard Street, Canal Road and Willow Pass Road.

*Leland Road* is a four lane, east-west arterial roadway which extends from its current western terminus in the Oak Hills subdivision about 2,000 feet west of Bailey Road to Pittsburgh's eastern city limit. East of Pittsburgh, the arterial continues as Delta Fair Boulevard to its eastern terminus at Buchanan Road in Antioch. Leland Road provides east-west access primarily from residential collector roadways along the route to the major north-south arterials in the area. Left turn lanes are provided at each intersection along Leland Road.

*Willow Pass Road-Pittsburg* is a major east-west arterial roadway extending easterly from its interchange with Highway 4 in Pittsburgh to its eastern terminus near Railroad Avenue. The route has four travel lanes, plus left turn lanes at intersections, from Highway 4 to just east of Bailey Road, where it narrows to two travel lanes. Willow Pass Road is lined by commercial and residential development. Signals are provided at the Evora Road, Port Chicago Highway, Alves Lane and Bailey Road intersections.

*Willow Pass Road-Concord* is a major arterial roadway extending southerly from Evora Road and an interchange with Highway 4, through the Concord U.S. Naval Magazine, and into Concord. The roadway contains four travel lanes through and just south of the Highway 4 interchange area to just south of Avila Road where it narrows to a two-lane roadway into Concord (as it traverses the U.S. Naval Magazine). Left turn lanes are provided on the approaches to both freeway on-ramps; a left turn lane is not provided on the approach to Avila Road.

*Evora Road* is a two-lane frontage road running parallel to and north of the Highway 4 freeway between Willow Pass Road-Concord and Willow Pass Road-Pittsburg. It has signalized intersections with Mota Drive and Willow Pass Road-Pittsburg. The roadway has moderate to steep grades as it extends over the hills between Concord and Pittsburgh.

*Avila Road* is a two-lane roadway extending easterly from Willow Pass Road-Concord for about 6,500 feet before ending in a cul-de-sac. It generally parallels and runs south of the Highway 4. The roadway has steep grades as it extends over the hills east of Concord. Avila Road is stop sign controlled at Willow Pass Road-Concord.

*Port Chicago Highway* is a major arterial roadway connecting the cities of Pittsburg and Concord via an alignment extending north from both cities and then east-west near the Sacramento River. In Pittsburg, the route intersects Willow Pass Road just east of the Willow Pass interchange with Highway 4. In Concord, the route has an interchange with Highway 4 approximately one mile west of the Willow Pass Road-Concord interchange. Port Chicago Highway has two travel lanes in most locations; however, near Willow Pass Road-Pittsburg it widens to include four travel lanes.

(2) Critical Local Road System Locations. Twenty specific local road system locations have been identified by the City of Pittsburg Public Works staff as those that are most likely to be affected by the project, including nine key existing intersections and three future intersections. The locations of these intersections are shown on Figure 15 (the existing local roadway system) and Figure 16 (the planned future local roadway system) and are listed below.

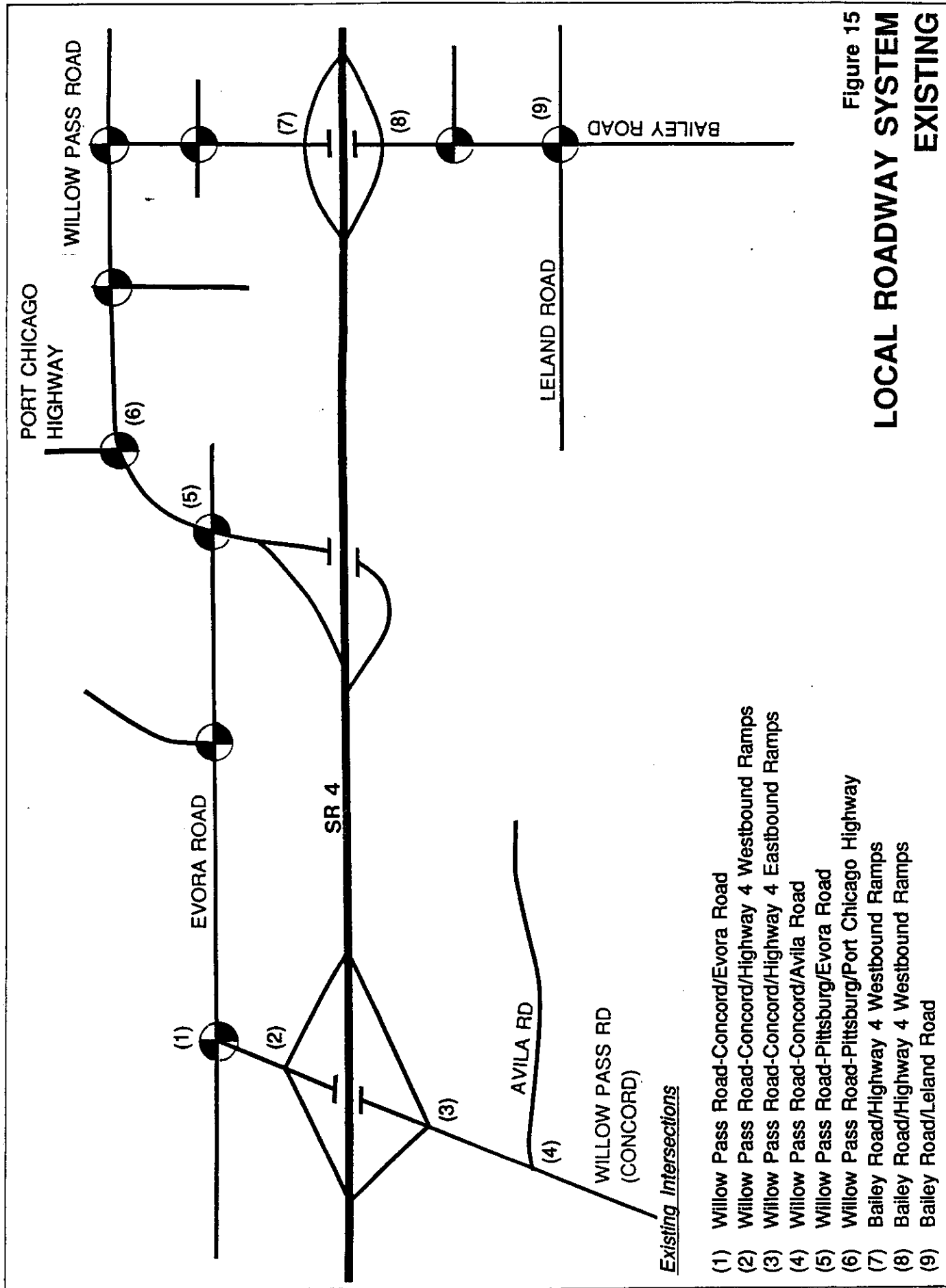
*Existing Intersections (numbers below correspond to numbers on Figure 15):*

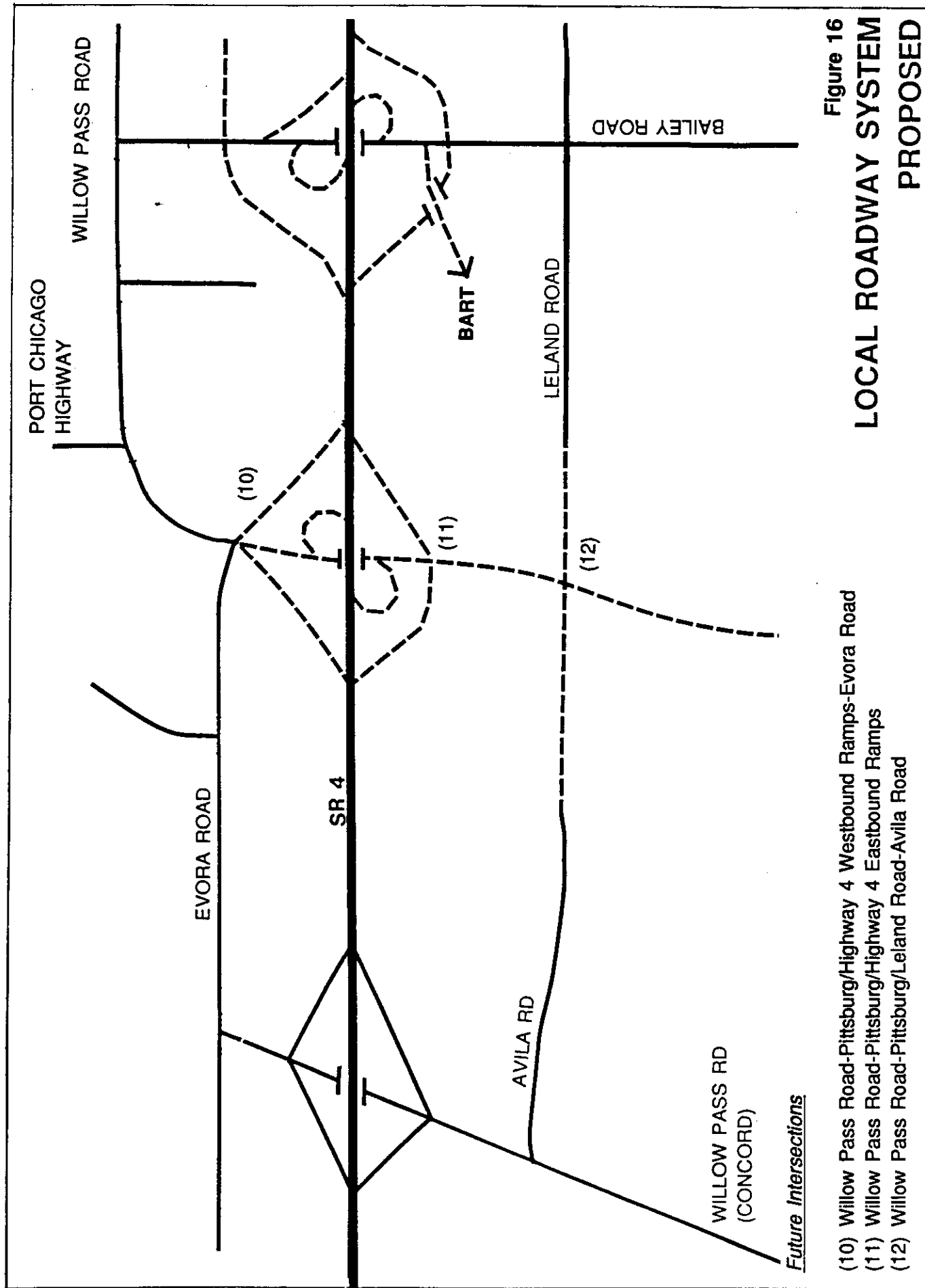
- Willow Pass Road-Concord/Evora Road (1)
- Willow Pass Road-Concord/Highway 4 Westbound Ramps (2)
- Willow Pass Road-Concord/Highway 4 Eastbound Ramps (3)
- Willow Pass Road-Concord/Avila Road (4)
- Willow Pass Road-Pittsburg/Evora Road (5)
- Willow Pass Road-Pittsburg/Port Chicago Highway (6)
- Bailey Road/Highway 4 Westbound Ramps (7)
- Bailey Road/Highway 4 Eastbound Ramps (8)
- Bailey Road/Leland Road (9)

*Future Intersections (numbers below correspond to numbers on Figure 16):*

- Willow Pass Road-Pittsburg/Highway 4 Westbound Ramps-Evora Road (10)
- Willow Pass Road-Pittsburg/Highway 4 Eastbound Ramps (11)
- Willow Pass Road-Pittsburg/Leland Road-Avila Road (12)

*Note: Of the nine existing intersections, Figure 15 shows that three are signalized while six are stop sign controlled.*





In addition to the intersections listed above, several key road links are also critical to the operation of the local road system. These include:

- Willow Pass Road-Concord,
- Willow Pass Road-Pittsburg,
- Evora Road,
- Avila Road,
- Port Chicago Highway,
- Bailey Road,
- Leland Road, and
- Highway 4.

(3) Critical Freeway System Locations. Due to the project's relationship to Highway 4, portions of the freeway system are likely to be directly impacted by the project. The following Highway 4 on- and off-ramps could be affected by project traffic:

- All ramps at the Bailey Road interchange,
- All ramps at the future Willow Pass Road-Pittsburg interchange, and
- The eastbound on-ramp and westbound off-ramp at the Willow Pass Road-Concord interchange (currently) and all ramps at this interchange with the future connection of Avila Road to Leland Road.

Peak hour, peak direction traffic on Highway 4 in the project vicinity is already significantly congested and a major concern of Caltrans. Consequently, all segments of the highway, including segments east of Bailey Road and west of Willow Pass Road-Concord, have been examined in this study.

#### c. Local Roadway and Freeway Link Operational Conditions

(1) Local Roadways. Existing AM and PM peak period traffic counts on major roadways in the project area are presented on Figure 17.<sup>1</sup> Existing traffic volumes in the project area typically indicate a pattern of heavier traffic flow in the westbound and southbound

---

<sup>1</sup>AM and PM peak period turn movement counts were conducted by the Crane Transportation Group in April, 1992 at all existing analyzed intersections other than those along Bailey Road. Counts at Bailey Road intersections were obtained from a June, 1991 Draft EIR for the Highway 4/Bailey Road Interchange Improvement Project, while Highway 4 mainline volumes were obtained from Caltrans 1991 counts near the Bailey Road and Willow Pass-Concord interchanges as well as from the 1991 Bailey Road Interchange Improvement EIR.

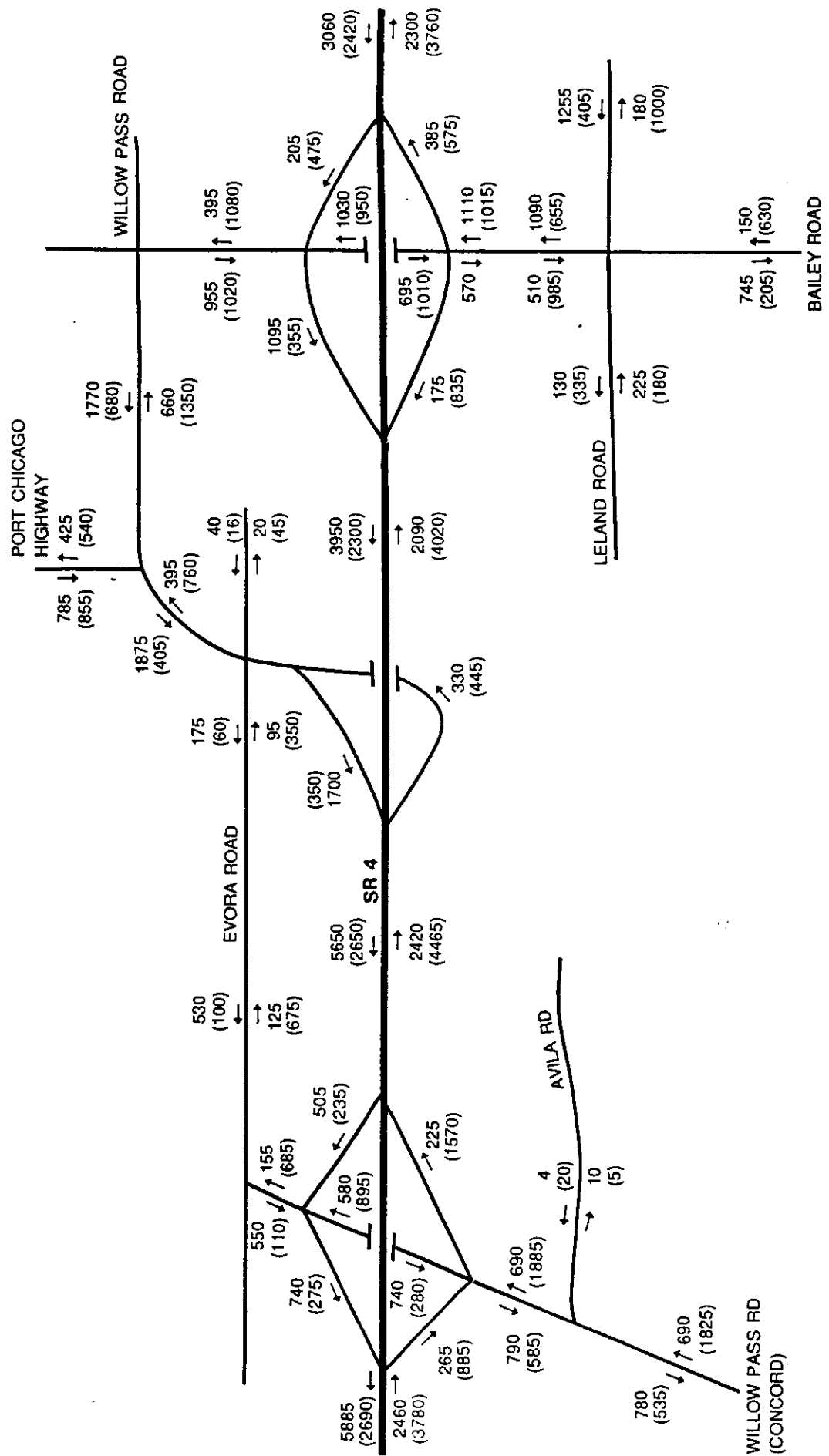


Figure 17  
**EXISTING TRAFFIC VOLUMES--  
 AM AND PM PEAK HOURS**

directions during the AM peak hour and heavier traffic flow in the eastbound and northbound directions during the PM peak hour. The primary exception to these patterns is the segment of Bailey Road between Leland Road and Highway 4, where peak hour flows are generally in the opposite directions due to access patterns to and from Highway 4.

Table 10 lists midblock capacities applied to each of these routes for SEIR analysis purposes, along with current peak volumes. The table indicates that existing peak hour volumes along Bailey Road, Leland Road, Port Chicago Highway and Evora Road are all well within available capacity limits. However, Willow Pass Road-Concord during the PM peak hour and westbound Willow Pass Road-Pittsburg during the AM peak traffic hour are beginning to approach theoretical capacity operation.

(2) Freeway. Highway 4 traffic in the project area is heaviest in the westbound direction during the AM peak hour and in the eastbound direction during the PM peak hour. During these periods, Highway 4 operates at congested, "forced flow" conditions. In fact, current peak period traffic volume counts here are approaching or exceed theoretical freeway capacities. For example, in the AM peak hour, from 1,760 to 2,250 vehicles per hour per lane (vphpl) have been regularly counted traveling westbound west of Willow Pass Road-Pittsburg.<sup>1</sup> Likewise, during the PM peak hour the two-lane eastbound section of Highway 4 from the summit to the Willow Pass Road-Pittsburg interchange has been surveyed carrying from 2,235 to 2,280 vehicles per hour per lane. The maximum theoretical capacity for a freeway lane of this nature is conservatively assumed to be 2,000 vphpl.<sup>2</sup>

During the AM peak period, a "bottleneck" typically occurs east of the Bailey Road interchange with an associated average westbound Highway 4 queue extending 1.9 miles. The PM peak period "bottleneck" typically occurs east of the Willow Pass summit with an average eastbound Highway 4 queue of 1.5 miles. Due to these congested conditions, many drivers are avoiding Highway 4 and are using alternative routes such as Kirker Pass Road, Bailey Road, Willow Pass Road-Concord and Evora Road.

The performance of Highway 4 has also been quantitatively measured in terms of Level of Service (LOS). Level of Service for freeway segments is a function of the number of lanes on the segment being analyzed, the design speed, and certain vehicle and roadway characteristics (truck percentages, grade, etc.).

The Level of Service descriptions for typical freeway segments are summarized in Table 11. LOS A and LOS B represent free flow conditions and LOS C represents stable operations. LOS D borders on unstable operations with restrictions on maneuverability within traffic

---

<sup>1</sup>Wilbur Smith Associates, May, 1991 and Thomson Traffic Engineers, October, 1990.

<sup>2</sup>Transportation Research Board, 1985; without adjustments to reflect specific roadway design and use characteristics (heavy vehicle use rates, etc.).



Table 10  
KEY LOCAL ROADWAY LINKS--EXISTING CAPACITIES AND PEAK VOLUMES, 1992

| <u>Roadway Segment</u>                                          | <u>Capacities</u>                                          |                                                                  | <u>Observed Peak<br/>Volumes, Vehicles<br/>Per Hour, April, 1992</u> |
|-----------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------|
|                                                                 | <u>4-Lane Roadways:<br/>Vehicles Per<br/>Lane Per Hour</u> | <u>2-Lane Roadways:<br/>2-Way Volume--<br/>Vehicles Per Hour</u> |                                                                      |
| Leland Road (east of<br>Bailey Road)                            | 1,200                                                      | ---                                                              | 630 vplph**                                                          |
| Bailey Road (north of<br>Leland)                                | 1,000                                                      | ---                                                              | 550 vplph                                                            |
| Bailey Road (south of<br>Leland)                                | ---                                                        | 1,200                                                            | 895 vph***                                                           |
| Willow Pass Road-Pittsburg<br>(east of Port Chicago<br>Highway) | 950                                                        | ---                                                              | 885 vplph                                                            |
| Willow Pass Road-Concord                                        | ---                                                        | 2,700                                                            | 2,360 vph                                                            |
| Evora Road                                                      | ---                                                        | 1,500                                                            | 775 vph                                                              |

SOURCE: Crane Transportation Group; 1985 Highway Capacity Manual

\* Peak directional lane volume on four-lane streets or peak two-way volume on two-lane streets.

\*\* Vehicles per lane per hour.

\*\*\* Vehicles per hour.

*Note: Capacity limits for four-lane roadways are determined on a directional, per-lane basis, whereas capacity limits for two-lane roadways are determined for two-way traffic flow. Four-lane arterial per-lane capacities typically range from 800 up to 1,200 vehicles per lane per hour, depending upon several factors including on-street parking use, number of driveways, lane widths, pavement condition, etc. Two-lane roadway two-way capacities typically start at 2,800 vehicles per hour, and then are adjusted downward to reflect road width, grades, on-street parking use, etc. Capacities selected for Table 10 are based upon information contained in the 1985 Highway Capacity Manual modified to reflect locally observed driving conditions.*

streams.<sup>1</sup> LOS E represents unstable operations with very limited maneuverability within traffic streams. LOS F represents forced flow.

Current Level of Service ratings for Highway 4 segments in the project vicinity are summarized in Table 12. The table indicates that Highway 4 between Bailey Road and Willow Pass Road-Concord currently operates at LOS F in the westbound direction during the AM peak hour and at LOS F in the eastbound direction during the PM Peak hour. Forced flow conditions prevail during these peak periods, causing significant vehicle back-ups as previously discussed. Similarly, LOS E/F conditions exist on eastbound Highway 4 between Bailey Road and Railroad Avenue during the PM peak hour, resulting in unstable operations. This segment of Highway 4 currently operates at LOS D in the westbound direction during the AM peak hour.

#### d. Local Intersection Conditions

(1) Study Intersections. Intersections, rather than midblock roadway segments, are almost always the critical capacity controlling locations for a local circulation system. As described above, nine intersections most likely to be impacted by project traffic have been surveyed and monitored (traffic volume counts) to determine existing operating conditions in the site area.

(2) Intersection Analysis Methodologies. *Signalized* intersections have been analyzed based upon Contra Costa County "Measure C"<sup>2</sup> Level of Service software, which uses the so-called Intersection Capacity Utilization (ICU) analysis methodology. The ICU methodology reports results in a Level of Service (LOS) format as well as a Volume-to-Capacity (V/C) format. Level of Service results range from level A, indicating uncrowded conditions and minimum delay down to level F, indicating significant congestion and delay. The relationship between LOS ratings and V/C ratios for signalized intersections is detailed in Table 13.

---

<sup>1</sup>A "maximum service flow rate" of 2,000 vphpl has been applied in this LOS analysis in accordance with Highway Capacity Manual (Transportation Research Board, 1985) procedures, which represents a conservatively low design capacity assumption for modern freeways, and thus results in more conservative (adverse) LOS results than what presently occurs on the corridor. The "maximum service flow rate" is measured in terms of passenger car equivalents per hour per lane (pcphpl). The passenger car equivalent is the adjusted traffic volume which accounts for trucks, buses and other heavy vehicles which are present in the traffic stream.

<sup>2</sup>Measure C, adopted by the voters in 1988, establishes a sales tax add-on roadway improvement fund for "Routes of Significance," and sets forth a Growth Management Program which includes several requirements or criteria for funding eligibility. One Measure C requirement is to adopt and apply traffic service standards for local and regional roads. The Contra Costa County Transportation Authority is currently formulating such traffic service standards and related analysis methodologies.

Table 11  
**LEVEL OF SERVICE DESCRIPTIONS--BASIC FREEWAY SEGMENTS**

| <u>Level of Service</u> | <u>Maximum Service Flow Rate (pcphpl)</u> | <u>Description of Traffic Conditions</u>                                                                                                       |
|-------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| A                       | < 700                                     | Primarily free flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.               |
| B                       | < 1,100                                   | Reasonably free flow conditions. The ability to maneuver within the traffic stream is only slightly restricted.                                |
| C                       | < 1,550                                   | Stable operations. Small increase in flow causes substantial deterioration in service. Freedom to maneuver noticeably restricted.              |
| D                       | < 1,850                                   | Borders on unstable operations. Small increases in flow causes substantial deterioration. Freedom to maneuver severely restricted.             |
| E                       | < 2,000                                   | Operations are extremely unstable. There are no usable gaps in the traffic stream. Maneuverability within the traffic stream severely limited. |
| F                       | N/A                                       | Represents forced or breakdown flow.                                                                                                           |

SOURCE: Highway Capacity Manual, Special Report 209, Transportation Research Board, 1985.

Note: pcphpl = passenger car equivalents per hour per lane

Table 12  
HIGHWAY 4--FREEWAY SEGMENT EXISTING VOLUMES, CAPACITIES, AND  
LEVELS OF SERVICE

| <u>Segment</u>                                  | Maximum<br>Service<br>Flow Rate<br>Capacity<br>(PCPHPL)* | <u>AM Peak Hour</u><br>Service<br>Flow<br>Rate<br>(PCPHPL) |            | <u>PM Peak Hour</u><br>Service<br>Flow<br>Rate<br>(PCPHPL) |            |
|-------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------|------------|------------------------------------------------------------|------------|
|                                                 |                                                          |                                                            | <u>LOS</u> |                                                            | <u>LOS</u> |
| <b>Eastbound</b>                                |                                                          |                                                            |            |                                                            |            |
| West of Willow Pass Concord                     | 2,000                                                    | 1,310                                                      | C          | 2,020                                                      | F          |
| Willow Pass Concord to<br>Willow Pass Pittsburg | 2,000                                                    | 1,290                                                      | C          | 2,370                                                      | F          |
| Willow Pass Pittsburg to<br>Bailey Road         | 2,000                                                    | 1,110                                                      | C          | 2,140                                                      | F          |
| West of Bailey Road                             | 2,000                                                    | 1,230                                                      | C          | 2,000                                                      | E/F        |
| <b>Westbound</b>                                |                                                          |                                                            |            |                                                            |            |
| East of Bailey Road                             | 2,000                                                    | 1,630                                                      | D          | 1,290                                                      | C          |
| Bailey Road to Willow Pass<br>Pittsburg         | 2,000                                                    | 2,100                                                      | F          | 1,220                                                      | C          |
| Willow Pass Pittsburg to<br>Willow Pass Concord | 1,800                                                    | 2,005                                                      | F          | 940                                                        | C          |
| West of Willow Pass Concord                     | 2,000                                                    | 2,090                                                      | F          | 960                                                        | B          |

SOURCE: State Route 4 Widening, Subsequent EIR, April 1991, and the Crane Transportation Group.

\* (PCPHPL) = Passenger car equivalents per hour per lane

*Unsignalized* intersection operation is also graded using the Level of Service A through F scale. All-way stop intersections receive one letter designation reflecting operation of the entire intersection. No V/C values are calculated. Intersections with only side streets stop sign controlled are also evaluated using the LOS scale. However, unlike signalized or all-way stop analysis where the LOS designations pertain to the entire intersection, LOS designations for stop sign controlled side street intersections are computed for individual turn and through movements. Greater detail about unsignalized analysis methodologies is provided in Appendix C of this SEIR.

(3) Measure C Operating Criteria. The City of Pittsburg and Contra Costa County both utilize Measure C criteria to determine minimum acceptable operating conditions at signalized intersections. Measure C does not, however, set any minimum LOS limits for operating conditions at unsignalized intersections. Measure C criteria indicate that all major signalized intersections in this section of Pittsburg and Contra Costa County (other than the various Highway 4 off-ramp intersections) could have a minimum acceptable operation of LOS D with a V/C ratio of .89.

Since Highway 4 is considered by the Contra Costa Transportation Authority to be a "route of regional significance" under Measure C, its off-ramp intersections with Bailey Road and Willow Pass Road have been given a different minimum criteria, which is LOS E. Therefore, for SEIR analysis purposes, LOS E operation has been assumed to be the poorest acceptable operation for any stop sign controlled turn movement at Highway 4 off-ramp/side-street intersections, while LOS D operation has been assumed to be the poorest acceptable for an off-ramp all-way stop intersection.

(4) Existing Intersection Operation. Table 14 shows that during the AM peak traffic hour, all study intersections are currently operating at acceptable levels with the exception of the stop sign controlled left turn from the Highway 4 westbound off-ramp to Willow Pass Road-Concord, which is operating at LOS F, and with the exception of left turns from both off-ramps to Bailey Road.

Table 15 shows that during the PM peak traffic hour, all study intersections are currently operating at acceptable levels of service with the exception of the left turn movements from the Highway 4 east- and westbound off-ramps to both Willow Pass Road-Concord and Bailey Road, all of which are operating at LOS F. In addition, the left turn movement from Bailey Road to the eastbound Highway 4 on-ramp is also operating at LOS F.

(5) Existing Signalization Needs. In addition to the LOS analysis, the six unsignalized intersections analyzed for this SEIR were examined to determine if existing traffic volume levels met standard criteria for consideration of traffic signals. An intersection may require signals to provide orderly vehicular and pedestrian movement and to reduce the frequency

Table 13

**SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS**

| <u>Level of Service</u> | <u>Description</u>                                                                                                                                                                                                                                                                                                                                                                                   | <u>Volume/Capacity (V/C) Ratio*</u> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| A                       | Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.                                                                                           | 0.00-0.60                           |
| B                       | Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.                                                                                                           | 0.61-0.70                           |
| C                       | Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.                              | 0.71-0.80                           |
| D                       | Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair. | 0.81-0.90                           |
| E                       | Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.                                                                   | 0.91-1.00                           |
| F                       | Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.                      | 1.01+                               |

SOURCE: Highway Research Board, Highway Capacity Manual, Special Report 87, 1965.

\*Capacity is defined as Level of Service E.

Table 14  
INTERSECTION LEVEL OF SERVICE--AM PEAK HOUR

| Intersection                                                             | Existing | Phase I<br>without<br>Project | Phase I<br>with<br>Project | Phase II<br>without<br>Project | Phase II<br>with<br>Project | Phase III<br>without<br>Project | Phase III<br>with<br>Project |
|--------------------------------------------------------------------------|----------|-------------------------------|----------------------------|--------------------------------|-----------------------------|---------------------------------|------------------------------|
| Bailey Road/Leland                                                       | C - .79* | B - .63                       | B - .64                    | B - .67                        | B - .68                     | B - .70                         | C - .72                      |
| Bailey Road/Highway 4<br>Eastbound Ramps                                 | FA/E**   | N/A                           | N/A                        | N/A                            | N/A                         | N/A                             | N/A                          |
| Bailey Road/Highway 4<br>Eastbound Ramps/BART<br>Access                  |          | A - .39                       | A - .39                    | A - .39                        | A - .40                     | A - .46                         | A - .47                      |
| Bailey Road/Highway 4<br>Westbound Ramps                                 | FA/F***  | N/A                           | N/A                        | N/A                            | N/A                         | N/A                             | N/A                          |
| Bailey Road/Highway 4<br>Westbound On-Ramp/<br>Canal Road                |          | A - .55                       | A - .55                    | A - .58                        | A - .59                     | B - .64                         | B - .65                      |
| Willow Pass Road-<br>Pittsburg/Evora                                     | B - .65  | N/A                           | N/A                        | N/A                            | N/A                         | N/A                             | N/A                          |
| Willow Pass Road-<br>Pittsburg/Evora-<br>Highway 4 Westbound<br>Off-Ramp |          | A - .46                       | A - .48                    | A - .50                        | A - .54                     | A - .52                         | A - .57                      |
| Willow Pass-Pittsburg/<br>Highway 4 Eastbound<br>Ramp                    |          | C****<br>A - .37              | C<br>A - .47               | B<br>A - .34                   | C<br>A - .44                | C<br>A - .37                    | D<br>A - .52                 |
| Port Chicago/Willow<br>Pass                                              | B - .70  | C - .76                       | C - .76                    | C - .78                        | C - .78                     | C - .80                         | C - .80                      |
| Willow Pass-Concord/<br>Highway 4 Eastbound<br>Ramps                     | EA/A**   | A - .35                       | A - .37                    | A - .28                        | A - .29                     | A - .32                         | A - .35                      |
| Willow Pass-Concord/<br>Highway 4 Westbound<br>Ramps                     | FA/E***  | A - .56                       | A - .58                    | A - .50                        | A - .55                     | B - .61                         | B - .69                      |
| Avila/Willow Pass                                                        | EA/A***  | EA/A                          | EA/A                       | FA/A<br>A - .41                | FA/B<br>A - .51             | FB/B<br>A - .47                 | FC/B<br>B - .62              |
| Willow Pass-Concord/<br>Evora                                            | C****    | C                             | C                          | C                              | C                           | C                               | D*                           |

SOURCE: Crane Transportation Group

- \* Signalized Level of Service - Volume/Capacity Ratio
- \*\* Unsignalized Eastbound Left, Eastbound Right/Southbound Left
- \*\*\* Unsignalized Westbound Left, Westbound Right/Northbound Left
- \*\*\*\* Unsignalized All-Way Stop

Table 15  
INTERSECTION LEVEL OF SERVICE--PM PEAK HOUR

| Intersection                                                             | Existing | Phase I<br>without<br>Project | Phase I<br>with<br>Project | Phase II<br>without<br>Project | Phase II<br>with<br>Project | Phase III<br>without<br>Project | Phase III<br>with<br>Project |
|--------------------------------------------------------------------------|----------|-------------------------------|----------------------------|--------------------------------|-----------------------------|---------------------------------|------------------------------|
| Bailey Road/Leland                                                       | A - .58* | C - .71                       | C - .74                    | C - .78                        | D - .82                     | D - .88                         | E - .93                      |
| Bailey Road/Highway 4<br>Eastbound Ramps                                 | FD/F**   | N/A                           | N/A                        | N/A                            | N/A                         | N/A                             | N/A                          |
| Bailey Road/Highway 4<br>Eastbound Ramps/BART<br>Access                  |          | B - .64                       | B - .66                    | B - .63                        | B - .65                     | B - .69                         | C - .74                      |
| Bailey Road/Highway 4<br>Westbound Ramps                                 | FA/D***  | N/A                           | N/A                        | N/A                            | N/A                         | N/A                             | N/A                          |
| Bailey Road/Highway 4<br>Westbound On-Ramp/<br>Canal Road                |          | A - .38                       | A - .39                    | A - .47                        | A - .47                     | A - .53                         | A - .53                      |
| Willow Pass Road-<br>Pittsburg/Evora                                     | A - .36  | N/A                           | N/A                        | N/A                            | N/A                         | N/A                             | N/A                          |
| Willow Pass Road-<br>Pittsburg/Evora-<br>Highway 4 Westbound<br>Off-Ramp |          | A - .36                       | A - .43                    | A - .40                        | A - .53                     | A - .42                         | A - .59                      |
| Willow Pass-Pittsburg/<br>Highway 4 Eastbound<br>Ramp                    |          | C****<br>A - .51              | D<br>B - .67               | C<br>A - .49                   | D<br>C - .72                | C<br>A - .52                    | D<br>D - .90                 |
| Port Chicago/Willow<br>Pass                                              | B - .62  | A - .36                       | A - .38                    | A - .40                        | A - .43                     | A - .45                         | A - .49                      |
| Willow Pass-Concord/<br>Highway 4 Eastbound<br>Ramps                     | FA/A**   | A - .33                       | A - .33                    | A - .32                        | A - .34                     | A - .36                         | A - .43                      |
| Willow Pass-Concord/<br>Highway 4 Westbound<br>Ramps                     | FA/A***  | A - .26                       | A - .27                    | A - .25                        | A - .26                     | A - .27                         | A - .29                      |
| Avila/Willow Pass                                                        | EC/E***  | EC/D                          | EC/D                       | FC/D<br>N/A                    | FD/E<br>C - .76             | FC/D<br>B - .68                 | FD/E<br>D - .85              |
| Willow Pass-Concord/<br>Evora                                            | C****    | C                             | C                          | C                              | D                           | C                               | D                            |

SOURCE: Crane Transportation Group

- \* Signalized Level of Service - Volume/Capacity Ratio
- \*\* Unsignalized Eastbound Left, Eastbound Right/Southbound Left
- \*\*\* Unsignalized Westbound Left, Westbound Right/Northbound Left
- \*\*\*\* Unsignalized All-Way Stop



of traffic accidents, depending on the amount of peak hour traffic on the various intersection approaches.

For this SEIR, the need for signals at each unsignalized intersection was determined using recommended Caltrans peak hour volume "signal warrant #11" as described in Appendix C of this SEIR. Based upon this methodology, all of the Highway 4 east- and westbound off-ramp intersections with Willow Pass Road-Concord and Bailey Road have existing traffic volume levels exceeding peak hour signal warrant criteria levels.

e. Freeway Ramp Operation

Freeway ramps are typically assigned capacities of 1,800 vehicles per hour for a single lane diamond ramp to 1,500 vehicles per hour for a single lane loop ramp. When ramp volumes approach 1,500 vehicles per hour, Caltrans gives consideration to providing two on- or off-ramp lanes at the ramp merge/diverge with the freeway mainline, with the provision of an auxiliary lane for the second on- or off-ramp lane.

Currently, only the westbound Highway 4 on-ramp from Willow Pass Road-Pittsburg (during the AM peak hour) has volume levels approaching capacity operation.

f. Existing Local Traffic Safety Concerns

Field observations conducted for this SEIR by a registered traffic engineer have indicated the following existing safety concerns on the local roadway system:

(1) Highway 4 Eastbound PM Peak Period Bypass Activity. Eastbound PM peak period traffic on the Highway 4 freeway near the Willow Pass Road-Concord interchange backs up on the eastbound approach to the Willow Pass summit. Numerous drivers (about 250 per hour) use the eastbound off-ramp to Willow Pass Road-Concord and then the eastbound on-ramp in order to bypass the stop and go conditions on the freeway main line. The eastbound on-ramp has its own exclusive eastbound lane to the top of the summit. Those through movements, in addition to the 330 left turn movements from the eastbound off-ramp, create significant existing safety concerns due to the high volume of traffic on Willow Pass Road (about 2,100 vehicles per hour), the low number of available gaps in the Willow Pass Road traffic flow, and the impatience of drivers experiencing delays on the off-ramp intersection approach. Several near accidents were observed.

(2) Bailey Road Left Turn Lane Capacity at Highway 4 Onramps and at Canal Road. The left turn lanes on the Bailey Road approaches to the Highway 4 eastbound and westbound on-ramps can now accommodate about 3 vehicles each. Due to the heavy traffic flows along Bailey Road, left-turning vehicles at the on-ramp must frequently wait extended periods of time. These waiting, left-turning vehicles frequently back out of the left turn

pockets into the through travel lanes. Also, northbound Bailey Road traffic at the Canal Road intersection occasionally backs up through the westbound and even the eastbound ramps intersections.

g. Existing Local Transit Service

(1) BART Express Bus Lines. An existing BART park-and-ride lot is situated in the southwest quadrant of the Highway 4/Bailey Road interchange. Access to this 210 parking space lot is provided via a driveway on Bailey Road about 300 feet south of the eastbound Highway 4 ramps. BART express lines PE, PE1, and P2X provide passenger transfers from this park-and-ride lot to the Concord BART station. The PE and PE1 lines run only on weekdays, with 10 to 15 minute headways during peak periods and 30 minute headways during off-peak periods. The P2X line runs only on weekday evenings and weekends, with 60 minute headways. These BART bus lines also provide similar service to park-and-ride lots in Antioch and in Concord.

(2) Tri Delta Bus Lines. Tri Delta bus lines 380 and 382 travel along Bailey Road on weekdays. The 380 line serves the West Pittsburgh BART park-and-ride lot from downtown Pittsburgh via Willow Pass Road and Bailey Road, and extends easterly to central Pittsburgh and Antioch. Line 382 runs along Bailey Road with service to central Pittsburgh and Antioch via Leland Road, and to West Pittsburgh via Willow Pass Road and Port Chicago Highway. Tri-Delta buses generally run on 60 minute headways.

h. Planned Local Circulation System Improvements or Changes

*The following improvements are planned for the local circulation system within the next five years:*

(1) BART. An extension of BART's Concord line from its present terminus at Clayton Road in Concord (Concord station) to Bailey Road in West Pittsburgh has been approved.<sup>1</sup> The extension will follow Port Chicago Highway northerly to Highway 4, then continue in Highway 4's center median easterly to Bailey Road. Stations will be located at Port Chicago Highway south of Highway 4 (North Concord station) and at Bailey Road (West Pittsburgh station). The West Pittsburgh station will replace the existing park-and-ride lot and will be a terminal station until the BART line is continued further east in the future. The extension of BART to the West Pittsburgh BART station is expected to be operational by 1997. Further extension of BART east of Bailey Road has not been approved.

---

<sup>1</sup>The approved extension to West Pittsburgh was addressed as Alternative 7A in the Pittsburgh-Antioch Corridor Alternative Analysis/Draft Environmental Impact Report (Bay Area Rapid Transit District, November, 1988).

(2) Highway 4. The most significant roadway improvement planned along the Highway 4 corridor is the combined lowering of the Willow Pass grade and widening of Highway 4 from the Willow Pass Road-Concord interchange to the Bailey Road interchange. Highway 4 will be lowered from an existing 6.8 percent grade to a 3.5 percent grade over the Willow Pass summit. Six through lanes with auxiliary climbing lanes will be constructed between Willow Pass Road-Concord and Willow Pass Road-Pittsburg. Between Willow Pass Road-Pittsburg and Bailey Road's westbound ramps, six through lanes will be constructed. Highway 4 will be widened to provide sufficient median width between the eastbound and westbound lanes to accommodate two additional future lanes and the planned extension of BART to West Pittsburg.

(3) Willow Pass Road-Pittsburg/Highway 4 Interchange. As part of the Route 4 widening, a full par-clo interchange will be provided with Willow Pass Road-Pittsburg, with the extension of Willow Pass Road south of the new interchange, into the project site (Road A). As shown on Figure 18, the interchange improvements will include the addition of an exit ramp from eastbound Highway 4, an entrance ramp to eastbound Highway 4, and an eastbound on-ramp from the extension of Willow Pass Road. The improvements would also involve the raising of Highway 4 to cross over Willow Pass Road. The interchange reconstruction will also include the southerly realignment of the eastern end of Evora Road to intersect Willow Pass Road as the fourth leg of the new westbound off-ramp intersection. This westbound off-ramp intersection will be signalized. The eastbound off-ramp intersection is scheduled to be initially signed as an all-way stop.

(4) Bailey Road/Highway 4 Interchange. The Bailey Road interchange with Highway 4 will be completely reconstructed in conjunction with construction of the new West Pittsburg BART station. Loop off-ramps will be provided in the northwest and southeast interchange quadrants. The westbound on-ramp will be realigned as the fourth leg of the Bailey Road/Canal Road intersection (along with a northerly realignment of Canal Road west of Bailey Road). Full details of these improvements are contained in the Highway 4/Bailey Road Interchange Improvement Project EIR.<sup>1</sup>

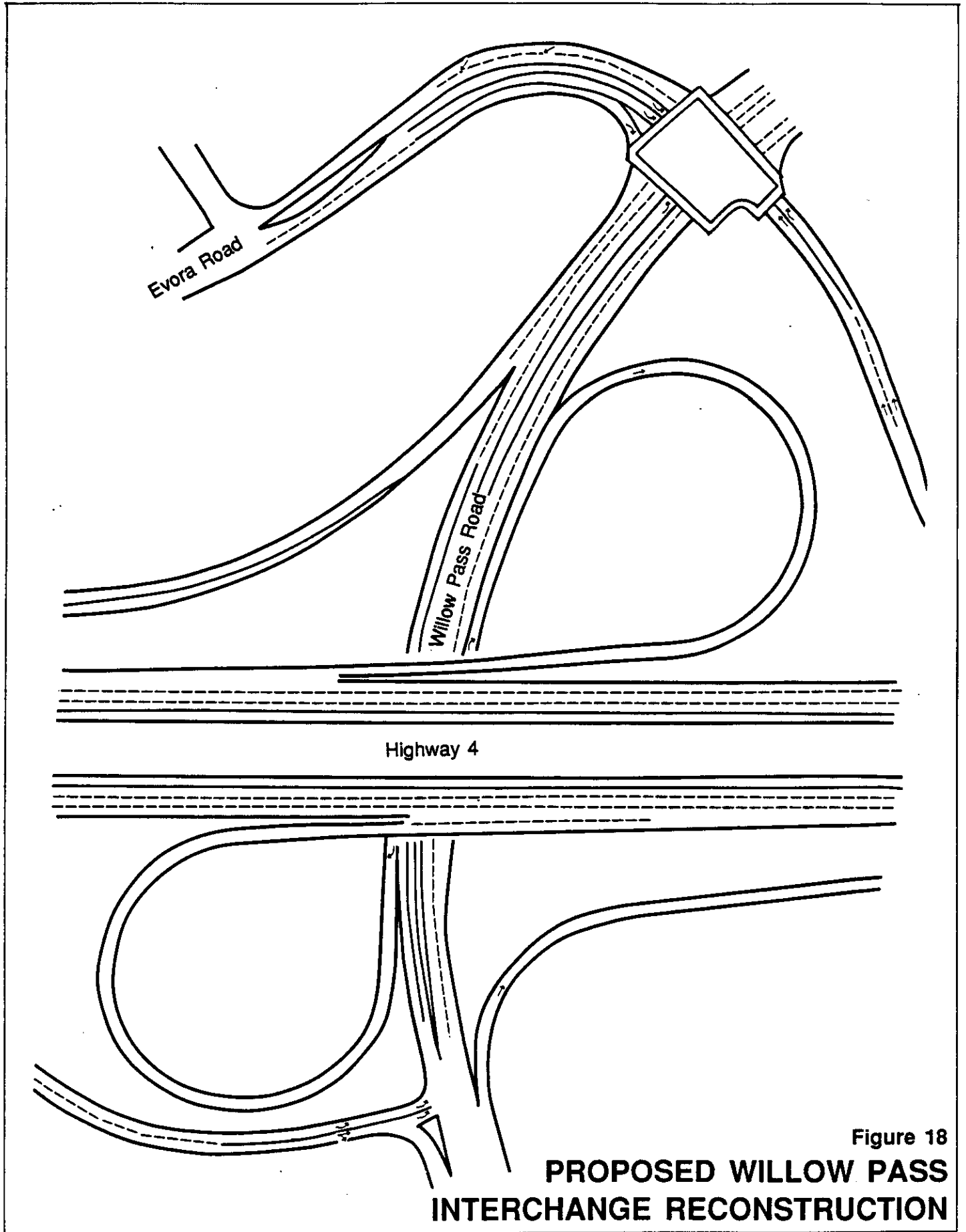
(5) Port Chicago Highway Closure. Port Chicago Highway will be closed by the Navy between Waterfront Road and Driftwood Drive. Expected traffic impacts due to this closure are contained in the DEIR for the Concord Naval Weapons Station General Plan Amendment and Road Vacation.<sup>2</sup>

*The following improvements are planned for the local circulation system within the next ten years:*

---

<sup>1</sup>Prepared by Public Affairs Management for Caltrans, September 1991.

<sup>2</sup>Prepared by Contra Costa County, September 1988.



(6) West Leland Road Extension. The extension of West Leland Road to Willow Pass Road, utilizing Avila Road, will be completed. In addition to providing access to the San Marco project, this extension will provide a direct four lane link between the eastern and western city limits. The new arterial will provide a parallel alternative to major city streets such as 10th Street and Buchanan Road. Its benefit is considered to be citywide, and in conformance with single zone assumption of the city-wide Traffic Mitigation Fee report which is being considered for adoption by the city council in June of 1992.

## 2. PROJECT IMPACTS

Project impacts have been analyzed for three development phases. For purposes of conservative impact assessment, this SEIR assumes that: (1) Phase I, construction of the first 1,000 project units, would be completed by 1998; (2) Phase II, construction of an additional 1,000 units, would be completed by the year 2000; and (3) Phase III, construction of the remaining 938 project units, would be completed by 2005. The actual project absorption period could exceed this time estimate, resulting in a more gradual cumulative transportation impact.

### a. Proposed Project Access and Internal Circulation

(1) Proposed Roadway Modifications/Extensions to Provide Site Access. Roadway modification to provide access to the project would be completed as follows:

**Phase I.** During development of Phase I, *Leland Road* would be extended easterly into the project site as a four-lane arterial roadway (from the end of the existing western roadway terminus in the Oak Hills subdivision through the intervening Alves subdivision, which is conservatively assumed in this SEIR to be completed before or at the same time as San Marco Phase I). Leland Road would be "stubbed out" at the west boundary of the San Marco project; i.e., would not be extended easterly of the San Marco parcel to a connection with Avila Road during Phase I (see Figure 15).

In addition, *Willow Pass Road-Pittsburg* would be extended southerly from its new interchange with the Highway 4 freeway and into the project site as a four-lane arterial roadway that would intersect with the Leland Road extension and then continue to the south end of the San Marco parcel where it would be "stubbed out" in anticipation of a future connection to Bailey Road.

Also, as described in the setting section, Highway 4 will be widened during Phase I from Willow Pass Road-Concord to Bailey Road, and the widening will include reconstruction of the Willow Pass interchange in Pittsburg. At the same time, BART will be extended from Concord to a new end-of-the-line "West Pittsburg" station just west of Bailey Road. Access to the BART West Pittsburg station parking lot (to be located between the Highway 4 freeway and Leland Road) will be via Leland Road and Bailey Road. The Bailey Road

interchange with Highway 4 will also be reconstructed in conjunction with BART construction.

- r If the extension of Leland Road through the Alves property is not completed, significant
- r adverse operational impacts to the local circulation system would occur.

**Phase II.** During development of Phase II, Leland Road is expected to be extended westerly to a connection with Avila Road. (See Figure 15.) Leland Road would be constructed as a four-lane roadway and Avila Road will be widened to four lanes.

**Phase III.** No additional arterial roadway extensions or modifications are planned in the project area by the end of Phase III. At full development, the San Marco project would be accessible via the Willow Pass Road connection to Highway 4 and via the Leland Road-Avila Road east-west arterial connection.

**(2) Proposed Emergency Access Connections.** No specific emergency access connections have been shown in the preliminary development plan for the project, although the project would ultimately have three through access points (i.e., Leland Road to the east, Willow Pass Road to the north, Avila Road to the west) and two potential future additional connections (i.e., the extension of project Streets A--Willow Pass Road--and C to the south). Because it is anticipated that the project would be built in phases over an extended period, emergency access has been evaluated in this SEIR for each of the three assumed construction phases.

**Phase I.** No emergency vehicle access connections are proposed from the southerly "stub" of the Willow Pass extension (Street A), or from the westerly "stub" of the Leland Road extension. In addition, no emergency access connections are proposed to connect to any other site roadway. This lack of additional emergency access provisions would represent a significant safety concern since all project traffic could be blocked by an accident at the single intersection providing access to the site (Leland Road/Willow Pass extension intersection). This emergency access deficiency would represent a temporary *significant adverse impact* during the interim period before completion of Phase II (which includes interconnection of Leland Road to Avila Road).

**Phase II.** No additional emergency access connections to any project roadway are proposed during this portion of project construction. However, this would not be considered a significant impact, since a second access route (Street B to Avila-Leland Road) would be provided.

**Phase III.** No additional emergency access connections are proposed to connect to any project roadway. Again, however, this would not be considered a significant impact as a second access route (Street B to Avila-Leland Road) would be provided in Phase II.

(3) Proposed Internal Circulation. The project internal circulation layout is diagrammed on Figure 6 in section III of this SEIR. Internal roadway design standards are illustrated on Figure 7.





A four-lane Avila-Leland Road and a four-lane Willow Pass extension would provide the primary internal access to the San Marco site. Residential and collector roadways would intersect each of these arterial streets and would directly serve project single-family, townhouse and apartment unit complexes or villages. No residential units would front or be directly served via either Leland Road or the Willow Pass extension. In addition, no residential units would directly front on B Street, the one major two-lane collector road proposed through the site.

Leland Road would be constructed as a 64-foot wide curb-to-curb roadway within an 84-foot right-of-way. There would be two travel lanes in each direction (with no median), and eight-foot curbside parking lanes or bike riding areas on each side. It is assumed that left turn lanes would be striped on intersection approaches. The Willow Pass extension would also have a 64-foot curb-to-curb width within an 84-foot right-of-way and would be constructed with two travel lanes in each direction, a 16-foot median, and no parking lanes. Left turn lanes would be provided on the approach to each median break. B Street, a collector roadway, would have a 56-foot curb-to-curb width within a 68-foot right-of-way. Single 20-foot wide travel lanes would be separated by a 16-foot median. Left turn lanes would be provided on the approach to each median break.

Local residential streets would vary in curb-to-curb width from 36 to 42 feet (within 48-foot and 54-foot right-of-ways, respectively). On-street parking would be allowed along both sides of all residential streets. All cul-de-sacs would have curb radii of 51 feet.

Grades on Leland Road and the Willow Pass Extension would not exceed six percent, while grades for internal roadways would not exceed 12 percent (with the vast majority of residential streets having grades of six percent or less).

All proposed internal roadway geometrics meet current city roadway design standards.

#### b. Project Trip Generation

Assumed project trip generation characteristics are presented in Table 16 for each of the three development phases. The trip generation rates utilized in the table were selected in consultation with City of Pittsburgh Planning and Public Works staff and are based on historical trip generation factors.<sup>1</sup>

As shown in Table 16, Phase I of the San Marco development (1,000 single-family units) would be expected to generate 9,550 daily two-way trips on an average weekday, with 740 two-way trips during the AM peak commute traffic hour and 1,010 two-way trips during the PM peak commute traffic hour. Phase II of the San Marco development (363 single-family units, 576 apartments and 61 townhomes -- a total of 1,000 units) would be expected to

---

<sup>1</sup> *Trip Generation*, 5th edition, by the Institute of Transportation Engineers, 1991.

Table 16  
PROJECT TRIP GENERATION

| Use                      | Size     | Daily |        | AM Peak Hour |     |      |       | PM Peak Hour |       |      |     |
|--------------------------|----------|-------|--------|--------------|-----|------|-------|--------------|-------|------|-----|
|                          |          |       |        | In           |     | Out  |       | In           |       | Out  |     |
|                          |          | Rate  | Vol    | Rate         | Vol | Rate | Vol   | Rate         | Vol   | Rate | Vol |
| <b>Phase I (1998)</b>    |          |       |        |              |     |      |       |              |       |      |     |
| Single-Family Residences | 1,000    | 9.55  | 9,550  | .19          | 190 | .55  | 550   | .66          | 660   | .35  | 350 |
| SUBTOTALS                | 1,000 du |       | 9,550  |              | 190 |      | 550   |              | 660   |      | 350 |
| <b>Phase II (2000)</b>   |          |       |        |              |     |      |       |              |       |      |     |
| Single-Family Residences | 363      | 9.55  | 3,470  | .19          | 70  | .55  | 200   | .66          | 240   | .35  | 130 |
| Apartments               | 576      | 6.47  | 3,730  | .09          | 55  | .42  | 245   | .43          | 250   | .20  | 120 |
| Townhouses               | 61       | 5.86  | 360    | .07          | 5   | .37  | 25    | .36          | 25    | .19  | 15  |
| SUBTOTALS                | 1,000 du |       | 7,560  |              | 130 |      | 470   |              | 515   |      | 265 |
| <b>Phase III (2005)</b>  |          |       |        |              |     |      |       |              |       |      |     |
| Townhouses               | 278      | 5.86  | 1,630  | .07          | 20  | .37  | 105   | .36          | 105   | .19  | 55  |
| Apartments               | 660      | 6.47  | 4,280  | .09          | 60  | .42  | 280   | .43          | 285   | .20  | 135 |
| SUBTOTALS                | 938 du   |       | 5,910  |              | 80  |      | 385   |              | 390   |      | 190 |
| <b>TOTALS ALL PHASES</b> |          |       | 23,020 |              | 400 |      | 1,405 |              | 1,565 |      | 805 |

SOURCE: Trip Generation, 5th edition, by the Institute of Transportation Engineers, 1991

Table 17  
PROJECT TRIP DISTRIBUTION

| <u>Location</u>                                                                                          | <u>AM Peak Hour</u> |            | <u>PM Peak Hour</u> |            |
|----------------------------------------------------------------------------------------------------------|---------------------|------------|---------------------|------------|
|                                                                                                          | <u>In</u>           | <u>Out</u> | <u>In</u>           | <u>Out</u> |
| Highway 4 (west of Willow Pass-Concord)                                                                  | 19%                 | 29%        | 23%                 | 16%        |
| Willow Pass Road-Concord (west and south)                                                                | 13%*                | 15%*       | 13%*                | 13%*       |
| Bailey Road (south)                                                                                      | 5%*                 | 8%*        | 8%*                 | 6%*        |
| Leland Road (east)                                                                                       | 15%                 | 5%         | 8%                  | 15%        |
| Highway 4 (east of Bailey Road)                                                                          | 17%                 | 17%        | 20%                 | 8%         |
| Willow Pass Extension/Bailey Road<br>north of Highway 4                                                  | 9%                  | 9%         | 10%                 | 15%        |
| Local Traffic (new BART station/<br>shopping center at Leland/Bailey<br>intersection/nearby residential) | 22%                 | 17%        | 18%                 | 27%        |
| TOTAL                                                                                                    | 100%                | 100%       | 100%                | 100%       |

SOURCE: Crane Transportation Group; Pittsburg Traffic Mitigation Fee Study by Nolte and Associates, March, 1992.

\*Slightly more project traffic would be expected to use Bailey Road than Willow Pass Road to/from the south in Phase I due to the lack of a Leland Road connection to Avila Road.

generate an additional 7,560 daily two-way trips with 600 two-way trips during the AM peak commute traffic hour and 780 two-way trips during the PM peak commute traffic hour. Phase III of the San Marco development (278 townhomes and 660 apartments -- a total of 938 units) would be expected to generate an additional 5,910 daily two-way trips with 465 two-way trips during the AM peak commute traffic hour and 580 two-way trips during the PM peak commute traffic hour.

Total trip generation from the 2,938-unit San Marco development at full buildout is expected to be 23,020 daily two-way trips, including 1,805 two-way trips during the AM peak commute traffic hour and 2,370 two-way trips during the PM peak commute traffic hour.

c. Project Trip Distribution and Assignment

(1) Trip Distribution. Assumed project trip distribution to the regional roadway system is presented in Table 17. These distribution pattern assumptions are based upon a variety of factors. Surveys were conducted by the Crane Transportation Group in April, 1992 of the actual distribution patterns of new residential (non-construction worker) traffic entering and leaving both the Oak Hills apartment and single-family unit subdivision on Leland Road (west of Bailey Road) as well as at the new Sea Breeze single-family subdivision on Evora Road. A large sampling of outbound vehicles from both developments were monitored during both commute periods through nearby interchanges in order to determine regional distribution patterns. Inbound vehicles were surveyed in close proximity to each site. It was also possible to accurately determine both the in- and outbound distribution of traffic traveling between the Oak Hills complex and the new Oak Hills shopping center across Leland Road west of Bailey Road.

In addition to these actual trip distribution surveys, regional trip distribution projections for residential units in the Southwest Hills area (including San Marco) were obtained from a recently released traffic study conducted for the city to determine appropriate off-site traffic impact mitigation fees. Distribution patterns utilized in this study were based upon trip distribution information from the Contra Costa County General Plan Circulation Element traffic model (EMME 2).

Finally, additional projections prepared as part of the BART Pittsburg-Antioch Corridor Alternatives Analysis indicated that at most, only seven percent of the future people living in Pittsburg (by year 2000) would find BART providing quicker travel times to their destinations (versus highway travel). On that basis, a maximum of seven percent of commute traffic has been conservatively assumed in this SEIR analysis for that portion of the San Marco traffic which will go to the new West Pittsburg BART station in the morning and come from the station in the evening.

(2) Trip Assignment. Figures 19 and 20 present San Marco AM and PM peak hour traffic on the local area roadway system at the end of Phase I, based on the trip distribution considerations described above. Figures 21 and 22 present the same information at the

end of Phase II, and Figures 23 and 24 present the same information at the end of Phase III.

Table 18 shows the traffic increment that full development of the San Marco project would be expected to add to the local roadway network during both commute periods.

d. Impact Significance Criteria

(1) Roadway/Freeway Links. For critical roadway links that are currently operating within design capacity, any project-related or cumulative traffic increase that exceeds the design capacity of the roadway is identified in this analysis to be a significant environmental impact. For critical roadway links that are already carrying traffic flows in excess of design capacity, or with planned improvements are expected to be carrying traffic flows in excess of design capacity, any increase in traffic would contribute to an existing or future base case significant impact. In such excess traffic flow situations, a project-related or cumulative traffic increase of five percent or more is considered in this EIR to represent a noticeable, significant additional impact.

For freeway operation, LOS E has been considered as the poorest acceptable operation during peak traffic conditions (Measure C criteria), whereas for non-freeway midblock locations, LOS D has been considered as the poorest acceptable operation.

(2) Signalized Intersections. The City of Pittsburg uses LOS D operation ( $V/C = .90$ ) as an acceptable poorest limit of signalized intersection operation during the three peak traffic hours of the day, although LOS C operation is desired per the City of Pittsburg General Plan Circulation Element, 1988. Contra Costa County also uses LOS D operation ( $V/C = .90$ ) as the poorest acceptable operation for signalized intersections in the West Pittsburg-northern Concord area (based upon Measure C criteria for "routes not of regional significance"). Contra Costa Transportation Authority staff have, based on Measure C criteria, designated Highway 4 as a "route of regional significance."<sup>1</sup> To date, no criteria have been set for the poorest acceptable operation for off-ramp intersections along Highway 4. For purposes of this SEIR study, LOS E operation ( $V/C = .94$ ) has been assumed as the poorest acceptable operation at Highway 4 off-ramp intersections in the study area.

(3) Unsignalized Intersections. No significance criteria has been set by any jurisdiction for the poorest acceptable operation at an *unsignalized* intersection. For purposes of this study, LOS D has been considered the poorest acceptable operation for any turn movement at an all-way stop intersection, and for stop sign controlled left turns at an intersection where the minor street approaches only are stop sign controlled.

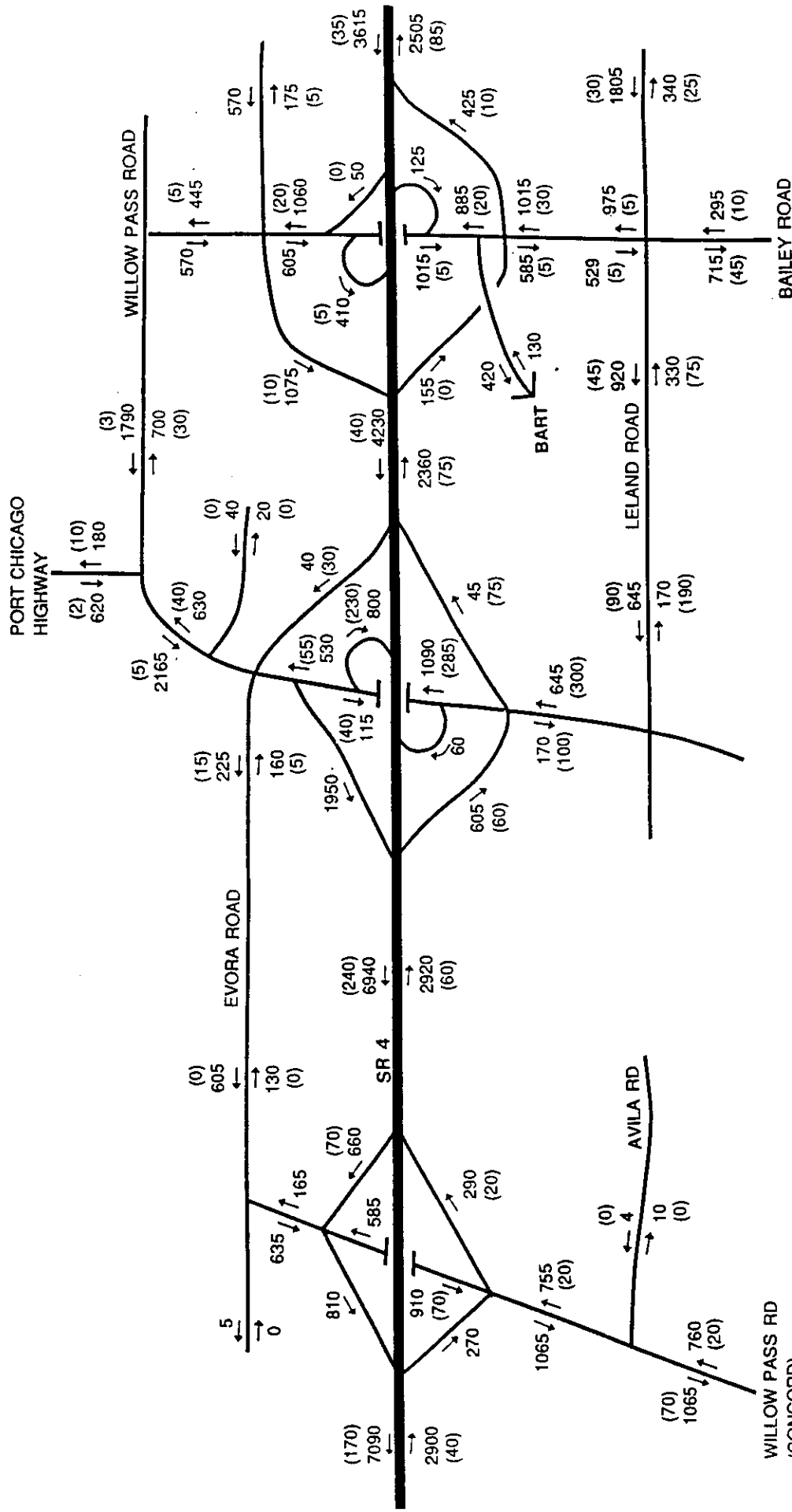
---

<sup>1</sup>Since the distribution of the Draft EIR, Leland Road, Avila Road, Evora Road, and Willow Pass Road north of Highway 4 have been recommended for designation as Routes of Regional Significance by TRANSPLAN.

Table 18  
PROJECT TWO-WAY VOLUME IMPACTS ON VICINITY ROAD LINKS--2005

| Location                                                  | AM Peak Hour |           |          | PM Peak Hour |           |          |
|-----------------------------------------------------------|--------------|-----------|----------|--------------|-----------|----------|
|                                                           | Base Volume  | San Marco | Increase | Base Volume  | San Marco | Increase |
| Highway 4 -- west of Willow Pass-Concord                  | 11,050       | 480       | 4%       | 8,075        | 490       | 6%       |
| Highway 4 -- Willow Pass-Concord to Willow Pass-Pittsburg | 10,330       | 400       | 4%       | 8,500        | 415       | 5%       |
| Highway 4 -- Willow Pass-Pittsburg to Bailey Road         | 7,385        | 290       | 4%       | 7,260        | 360       | 5%       |
| Highway 4 -- East of Bailey Road                          | 6,780        | 300       | 4%       | 6,875        | 380       | 6%       |
| Willow Pass-Concord south of Avila Road                   | 1,985        | 270       | 14%      | 2,710        | 310       | 11%      |
| Bailey Road south of Leland Road                          | 1,195        | 130       | 11%      | 1,390        | 175       | 13%      |
| Leland Road east of Bailey Road                           | 2,660        | 125       | 5%       | 2,690        | 230       | 9%       |
| Leland Road just west of Bailey Road                      | 1,570        | 275       | 18%      | 1,600        | 445       | 28%      |
| Avila-Leland Road just east of Willow Pass-Concord        | 835          | 350       | 42%      | 515          | 385       | 75%      |
| Willow Pass-Pittsburg north of Evora Road                 | 2,950        | 120       | 4%       | 1,890        | 190       | 10%      |
| Willow Pass-Pittsburg east of Port Chicago Highway        | 2,675        | 100       | 4%       | 1,850        | 155       | 8%       |
| Port Chicago Highway north of Willow Pass                 | 915          | 20        | 2%       | 915          | 35        | 4%       |
| Evora Road west of Willow Pass-Pittsburg                  | 415          | 50        | 12%      | 490          | 85        | 17%      |

SOURCE: Crane Transportation Group

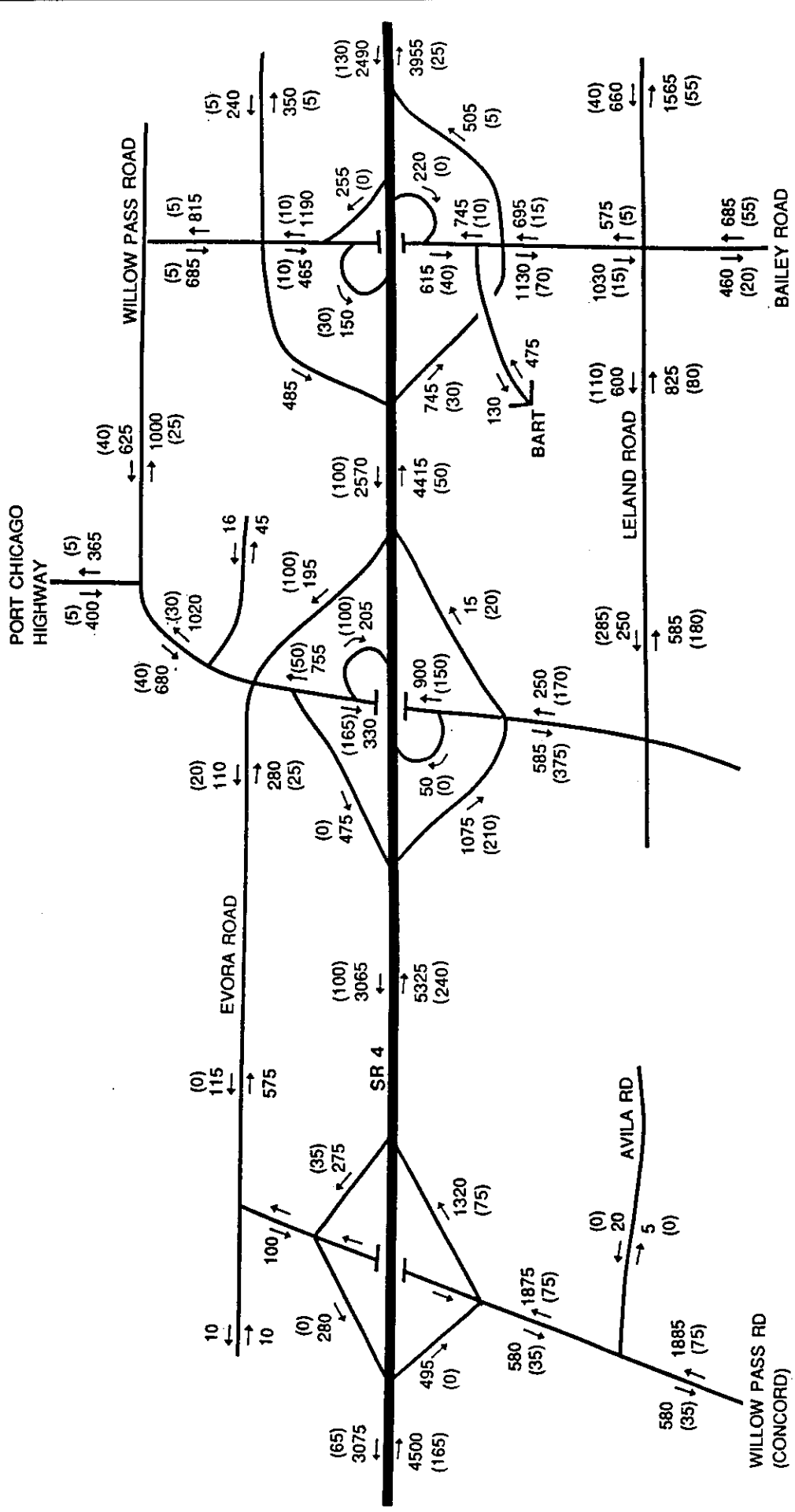


# LEGEND

100 = Year 1998 Base Volumes (w/o project)  
 (10) = San Marco (Phase I)

SOURCE: Crane Transportation Group

**Figure 19**  
**PROJECTED OFFSITE TRAFFIC**  
**VOLUMES--PHASE I, AM**



# LEGEND

100 = Year 1998 Base Volumes (w/o project)

(10) = San Marco (Phase I)

SOURCE: Crane Transportation Group

**Figure 20**  
**PROJECTED OFFSITE TRAFFIC**  
**VOLUMES--PHASE I, PM**



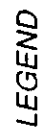
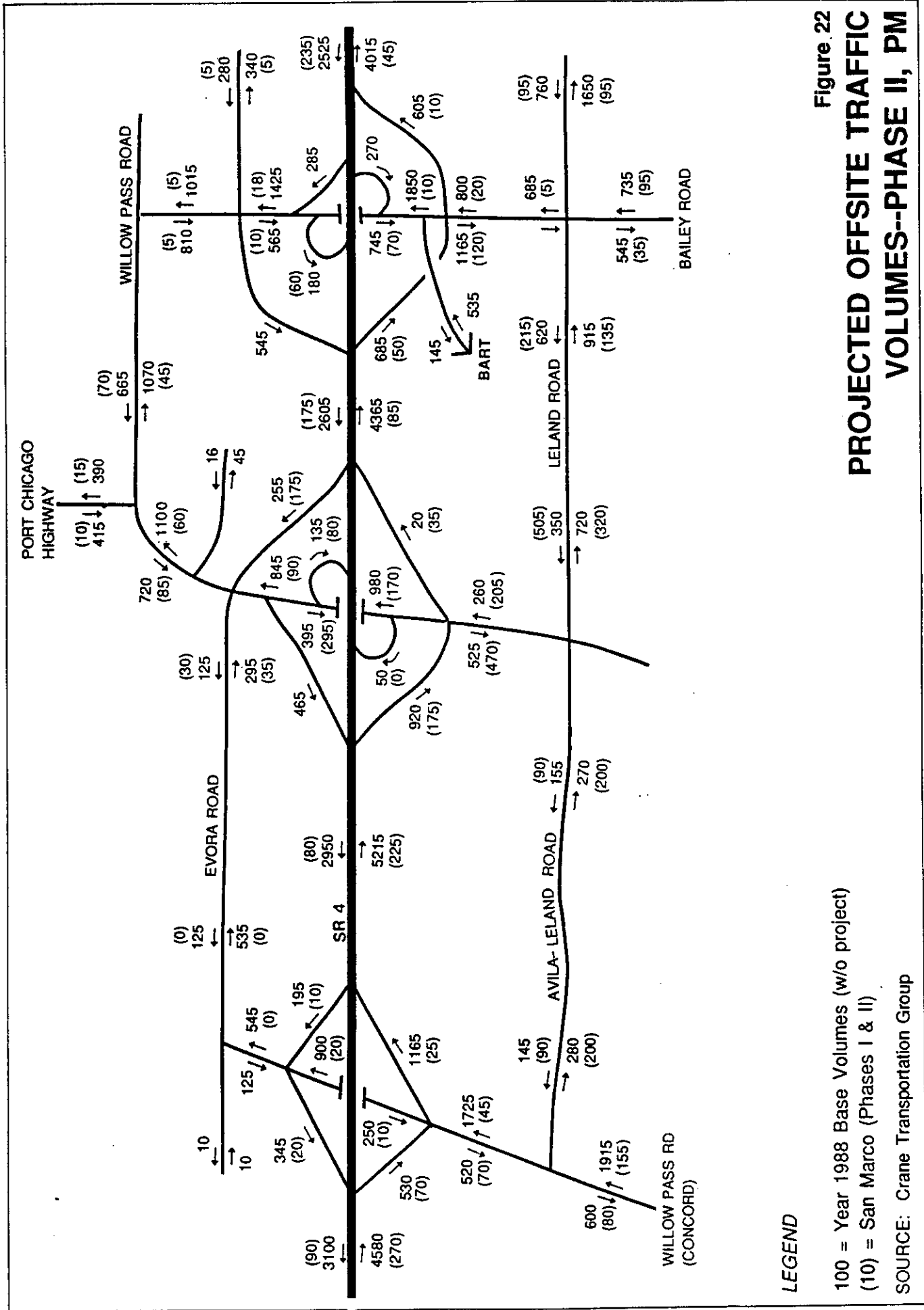
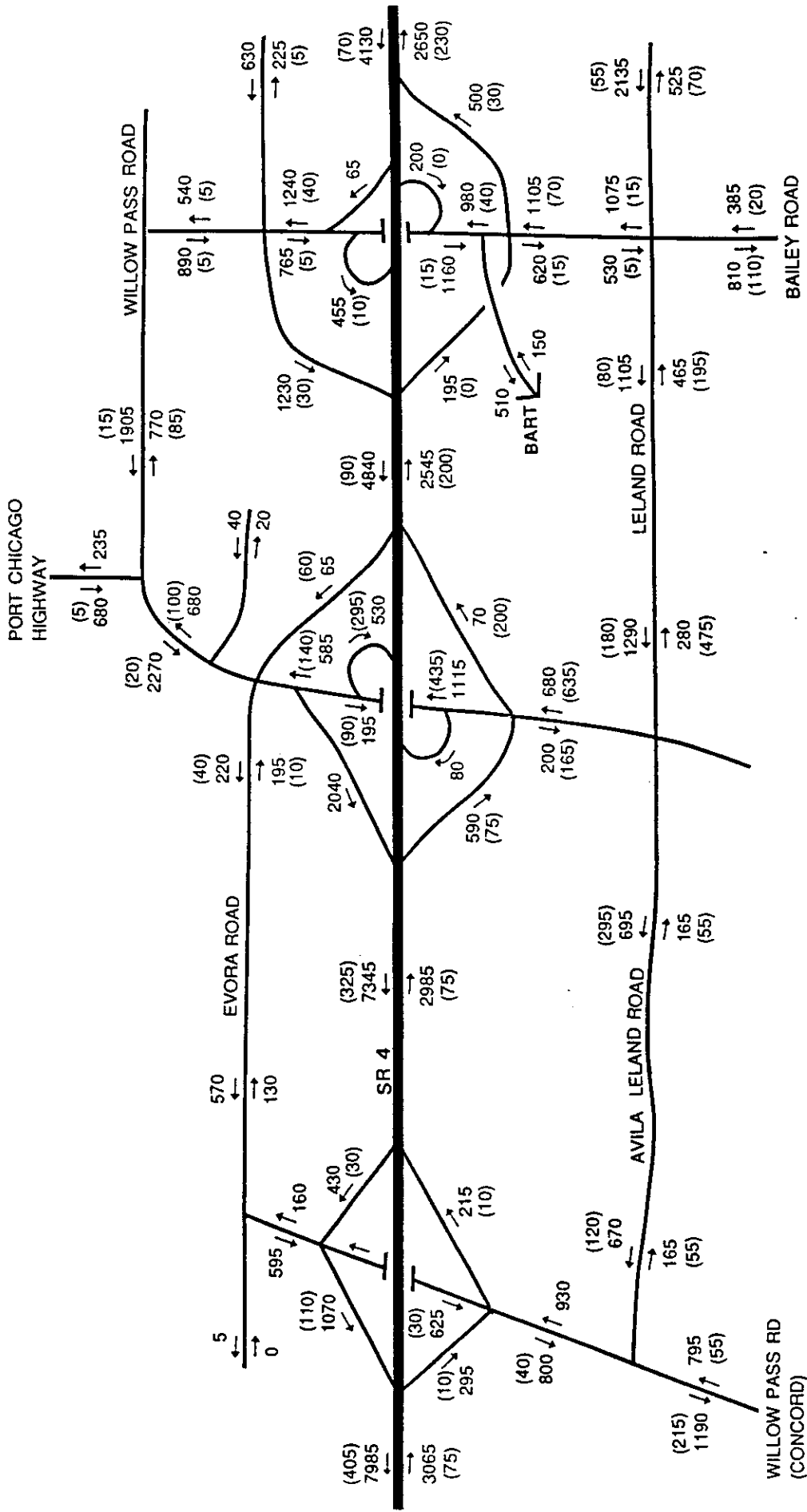


**Figure 21**  
**PROJECTED OFFSITE TRAFFIC**  
**VOLUMES--PHASE II, AM**

**SOURCE: Crane Transportation Group**





# LEGEND

100 = Year 2005 Base Volumes (w/o project)

(10) = San Marco (Phases I, II & III)

SOURCE: Crane Transportation Group

**Figure 23**  
**PROJECTED OFFSITE TRAFFIC**  
**VOLUMES--PHASE III, AM**

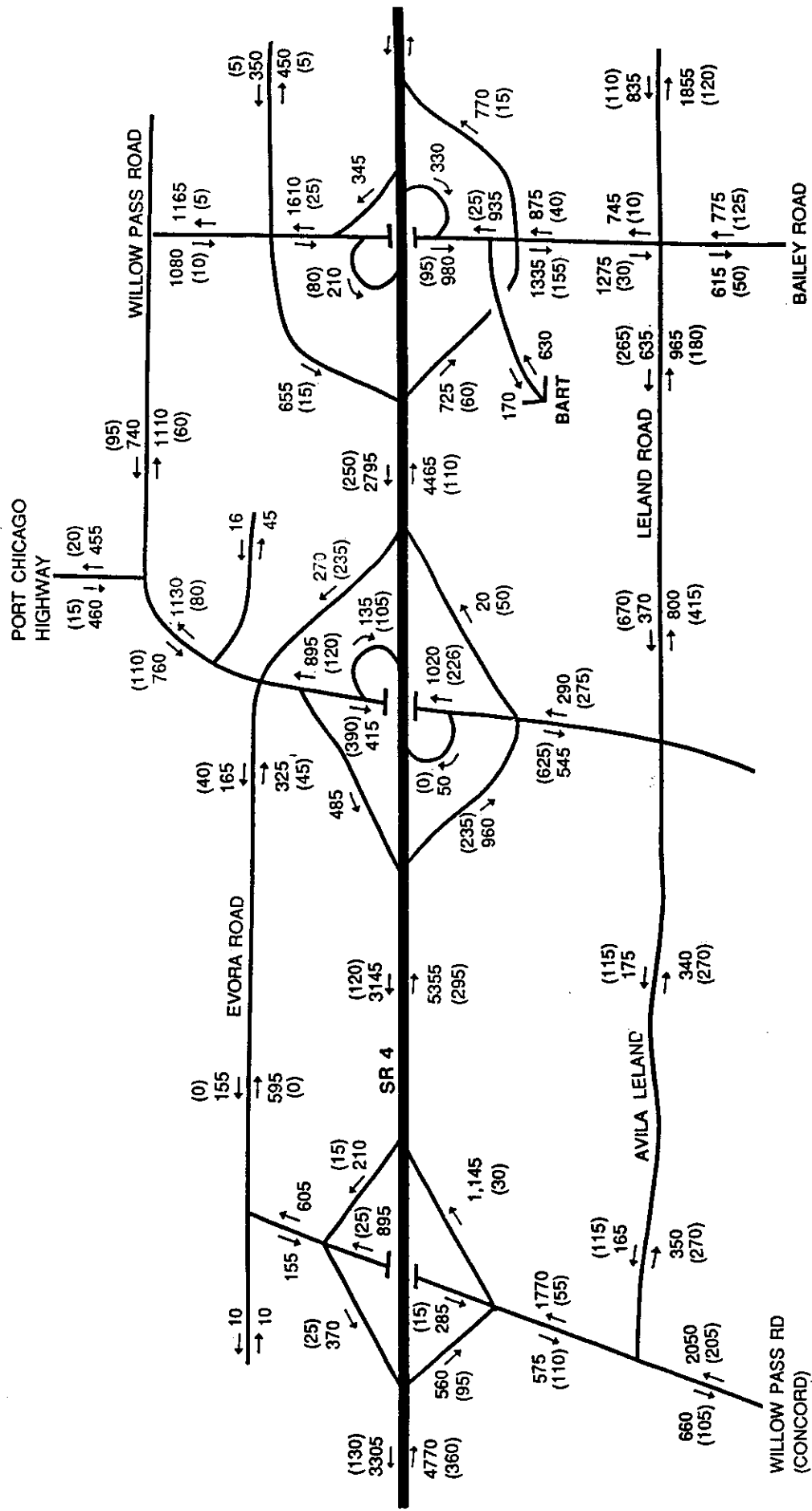


**Figure 24**  
**PROJECTED OFFSITE TRAFFIC**  
**VOLUMES--PHASE III, P.M.**

e. Base Case Traffic Conditions for Each San Marco Development Phase

(1) Local Base Case Considerations. At the direction of city staff, this SEIR transportation impact analysis examines the impact of project traffic on cumulative "base case" traffic conditions that would be expected by the end of each of the three assumed San Marco development phases (Phases I, II, and III) described in section 2.a(1) and Table 16 herein.

Other, specific land and transportation "base case" developments in the project vicinity which warrant consideration in this transportation impact analysis were identified and are listed in Table 19, along with their anticipated development levels, expected completion dates (i.e., corresponding project phase), and projected trip generation.

(2) Citywide and Countywide Base Case Considerations. In addition to these specific local citywide area projects, additional citywide and countywide growth would also be expected by the end of each San Marco phase that would also add through traffic to the street system near the San Marco development. After investigation of several sources of future year (2005) traffic projections (1988 projections from the Contra Costa County General Plan Circulation Element [EMME 2 model]) versus 1990 and 1991 updated year 2000 projections used in the Highway 4 widening and Bailey Road interchange reconstruction studies), it was decided to use the more recent projections since they would more accurately represent current land use trends. Also, the more current projections have assumed development of the San Marco project and the impact of a West Pittsburgh end-of-line BART station, whereas the County General Plan *Circulation Element* modeling projections did not.

(3) Combined Base Case Projections. Once year 2005 base case volume projections were developed for the street system under analysis, intermediate year 1998 and 2000 projections (to match the end of San Marco Phases I and II) were developed using an approximate straight line relationship for growth in through traffic. Figures 19, 21, and 23 show AM peak hour base case and San Marco volumes for Phase I, II and III, respectively, while Figures 20, 22, and 24 show PM peak hour base case and San Marco volumes for Phase I, II and III, respectively.

f. Base Case Traffic Impacts (without Project)

(1) Highway 4 Freeway and Ramps. Table 20 presents base case traffic conditions without the project for east- and westbound Highway 4 freeway segments from east of the Bailey Road interchange to west of the Willow Pass Road-Concord interchange. The planned widening of Highway 4 has been assumed completed by the end of the San Marco project Phase I time period (1998) in these results (i.e., four lanes east of Bailey Road, six lanes from the Bailey Road to Willow Pass Road-Pittsburg interchanges as well as west of the Willow Pass Road-Concord interchange, and eight lanes between the two Willow Pass Road interchanges).

Table 19  
**CUMULATIVE TRIP GENERATION--IMMEDIATE AREA DEVELOPMENT**

| Use                            | Size            | Daily Two-Way Trips |      | AM Peak Hour |      |      |     | PM Peak Hour |     |      |      |
|--------------------------------|-----------------|---------------------|------|--------------|------|------|-----|--------------|-----|------|------|
|                                |                 | Rate                | Vol  | In           |      | Out  |     | In           |     | Out  |      |
|                                |                 |                     |      | Rate         | Vol  | Rate | Vol | Rate         | Vol | Rate | Vol  |
| Phase I (1998)                 |                 |                     |      |              |      |      |     |              |     |      |      |
| Oak Hills South                | 450 SF Units    | 9.55                | 4300 | .19          | 90   | .55  | 250 | .66          | 300 | .35  | 160  |
| Alves                          | 250 SF Units    | 9.55                | 2390 | .19          | 50   | .55  | 140 | .66          | 165 | .35  | 90   |
| Oak Hills Mid-92 to Completion | 180 SF Units    | 9.55                | 1720 | .19          | 35   | .55  | 100 | .66          | 120 | .35  | 65   |
| BART Station                   |                 |                     |      |              | 1050 |      | 210 |              | 220 |      | 1100 |
| County Landfill                |                 |                     |      |              | 26   |      | 26  |              | 26  |      | 26   |
| Phase II (2000)                |                 |                     |      |              |      |      |     |              |     |      |      |
| Alves                          | 250 SF Units    | 9.55                | 2390 | .19          | 50   | .55  | 140 | .66          | 165 | .35  | 90   |
| DeBonneville                   | Animal Facility | *                   | *    | *            | 15   | *    | 5   | *            | 15  | *    | 25   |
| BART Phase II Increment        |                 |                     |      |              | 105  |      | 20  |              | 20  |      | 110  |
| Phase III (2005)               |                 |                     |      |              |      |      |     |              |     |      |      |
| BART Phase III Increment       |                 |                     |      |              | 105  |      | 20  |              | 20  |      | 110  |
| TOTALS                         |                 |                     | 9080 |              | 205  |      | 535 |              | 645 |      | 365  |

SOURCE: Trip Generation, 5th edition, by the Institute of Transportation Engineers, 1991. BART projections from Bailey Road Interchange Reconstruction EIR. County Landfill projections from city staff.

\* Volumes estimated. No defined activity levels yet developed for this site and no daily rate available.

*Freeway.* Base case traffic volumes without the project would produce *significant operational impacts* (LOS F operation) at the following freeway locations:

**AM Peak Hour**

- Phases I, II and III time periods (1998, 2000 and 2005):  
Westbound, west of Willow Pass Road-Concord.
- Phase III time period (2005):  
Westbound, east of Bailey Road.

**PM Peak Hour**

- Phases I, II and III time periods (1998, 2000 and 2005):  
Eastbound, east of Bailey Road.

*Ramps.* Base case traffic volumes would produce *significant operational impacts* at the following freeway ramps:

**AM Peak Hour**

- Phases I, II and III time periods (1998, 2000 and 2005):  
Westbound on-ramp from southbound Willow Pass Road-Pittsburg.

**PM Peak Hour**

- Phases I, II and III time periods (1998, 2000 and 2005):  
No locations.

(2) Local Midblock (Non-Freeway) Roadway Segments. Table 21 presents base case traffic conditions without the project for all critical midblock (non-freeway) roadway segments in the project area. Base case traffic volumes would result in *significant operational impacts* on the following local roadway segments:

**AM Peak Hour**

- Phase III time period (2005):  
Bailey Road, south of Leland Road (borderline operating condition, i.e., approaching unacceptable LOS);  
Westbound Willow Pass Road-Pittsburg, east of Port Chicago Highway (borderline operating conditions).

**PM Peak Hour**

- Phase II time period (2000):  
Bailey Road, south of Leland Road.

Table 20  
HIGHWAY 4 BASE CASE CAPACITY, VOLUMES, AND LEVEL OF SERVICE  
WITHOUT AND WITH THE SAN MARCO PROJECT

| Segment                                                 | Maximum<br>Service<br>Flow<br>Rate<br>Capacity<br>(PCPHPL)* | AM Peak Hour                                          |           |                                                                               |       | PM Peak Hour                                          |       |                                                                               |       |   |
|---------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------|-----------|-------------------------------------------------------------------------------|-------|-------------------------------------------------------|-------|-------------------------------------------------------------------------------|-------|---|
|                                                         |                                                             | Base<br>Volume<br>Service<br>Flow<br>Rate<br>(PCPHPL) | LOS       | Base<br>Volume<br>Plus<br>San<br>Marco<br>Service<br>Flow<br>Rate<br>(PCPHPL) | LOS   | Base<br>Volume<br>Service<br>Flow<br>Rate<br>(PCPHPL) | LOS   | Base<br>Volume<br>Plus<br>San<br>Marco<br>Service<br>Flow<br>Rate<br>(PCPHPL) | LOS   |   |
| Eastbound                                               |                                                             |                                                       |           |                                                                               |       |                                                       |       |                                                                               |       |   |
| West of Willow<br>Pass-Concord                          | 2,000                                                       | I                                                     | 1,035**   | B                                                                             | 1,045 | B                                                     | 1,600 | D                                                                             | 1,660 | D |
|                                                         |                                                             | II                                                    | 1,015***  | B                                                                             | 1,035 | B                                                     | 1,630 | D                                                                             | 1,725 | D |
|                                                         |                                                             | III                                                   | 1,090**** | B                                                                             | 1,120 | C                                                     | 1,695 | D                                                                             | 1,825 | D |
| Willow Pass-<br>Concord to Willow<br>Pass-Pittsburg     | 2,000                                                       | I                                                     | 780       | B                                                                             | 795   | B                                                     | 1,425 | C                                                                             | 1,485 | C |
|                                                         |                                                             | II                                                    | 735       | B                                                                             | 750   | B                                                     | 1,390 | C                                                                             | 1,450 | C |
|                                                         |                                                             | III                                                   | 800       | B                                                                             | 815   | B                                                     | 1,430 | C                                                                             | 1,510 | C |
| Willow Pass-<br>Pittsburg to<br>Bailey Road             | 2,000                                                       | I                                                     | 845       | B                                                                             | 870   | B                                                     | 1,570 | D                                                                             | 1,590 | D |
|                                                         |                                                             | II                                                    | 830       | B                                                                             | 885   | B                                                     | 1,550 | C/D                                                                           | 1,585 | D |
|                                                         |                                                             | III                                                   | 905       | B                                                                             | 975   | B                                                     | 1,590 | D                                                                             | 1,625 | D |
| East of Bailey<br>Road                                  | 2,000                                                       | I                                                     | 1,340     | C                                                                             | 1,380 | C                                                     | 2,110 | F                                                                             | 2,120 | F |
|                                                         |                                                             | II                                                    | 1,345     | C                                                                             | 1,430 | C                                                     | 2,140 | F                                                                             | 2,165 | F |
|                                                         |                                                             | III                                                   | 1,415     | C                                                                             | 1,535 | C                                                     | 2,225 | F                                                                             | 2,265 | F |
| Westbound                                               |                                                             |                                                       |           |                                                                               |       |                                                       |       |                                                                               |       |   |
| East of Bailey<br>Road                                  | 2,000                                                       | I                                                     | 1,930     | E                                                                             | 1,945 | E                                                     | 1,325 | C                                                                             | 1,395 | C |
|                                                         |                                                             | II                                                    | 1,995     | F                                                                             | 2,025 | E/F                                                   | 1,350 | C                                                                             | 1,470 | C |
|                                                         |                                                             | III                                                   | 2,200     | F                                                                             | 2,240 | F                                                     | 1,440 | C                                                                             | 1,605 | D |
| Bailey Road to<br>Willow Pass-<br>Pittsburg             | 2,000                                                       | I                                                     | 1,505     | C                                                                             | 1,520 | C                                                     | 915   | B                                                                             | 950   | B |
|                                                         |                                                             | II                                                    | 1,555     | B/C                                                                           | 1,585 | D                                                     | 930   | B                                                                             | 990   | B |
|                                                         |                                                             | III                                                   | 1,720     | D                                                                             | 1,755 | D                                                     | 995   | B                                                                             | 1,080 | B |
| Willow Pass-<br>Pittsburg to<br>Willow Pass-<br>Concord | 2,000                                                       | I                                                     | 1,850     | D/E                                                                           | 1,915 | E                                                     | 820   | B                                                                             | 850   | B |
|                                                         |                                                             | II                                                    | 1,810     | D                                                                             | 1,870 | 3                                                     | 790   | B                                                                             | 810   | B |
|                                                         |                                                             | III                                                   | 1,960     | E                                                                             | 2,045 | F                                                     | 845   | B                                                                             | 875   | B |
| West of Willow<br>Pass-Concord                          | 2,000                                                       | I                                                     | 2,520     | F                                                                             | 2,580 | F                                                     | 1,095 | B/C                                                                           | 1,120 | C |
|                                                         |                                                             | II                                                    | 2,565     | F                                                                             | 2,670 | F                                                     | 1,105 | B/C                                                                           | 1,135 | C |
|                                                         |                                                             | III                                                   | 2,840     | F                                                                             | 2,985 | F                                                     | 1,180 | C                                                                             | 1,220 | C |

SOURCE: Crane Transportation Group

- \* (PCPHPL) = Passenger car equivalents per hour per lane
- \*\* Phase I (1998)
- \*\*\* Phase II (2000)
- \*\*\*\* Phase III (2005)



- Phase III time period (2005):  
Bailey Road, south of Leland Road;  
Willow Pass Road-Concord (borderline operating conditions).

(3) Intersection Level of Service. Tables 14 and 15 show that during the AM and PM peak traffic hours, respectively, base case traffic volumes without the project would result in *significant operational impacts* at the following intersections:

**AM Peak Hour** (see Table 14)

- Phase II time period (2000):  
Willow Pass Road-Concord/Avila-Leland Road (unacceptable delay for left turns from Avila-Leland Road).
- Phase III time period (2005):  
Same as for Phase II.

**PM Peak Hour** (see Table 15)

- Phase II time period (2000):  
Willow Pass Road-Concord/Avila-Leland Road (unacceptable delay for left turns from Avila-Leland Road).
- Phase III time period (2005):  
Same as for Phase II.

(4) Off-Site Intersection Signalization Warrants. Table 22 shows that at future traffic horizons, base case traffic volumes without the project would exceed signal warrant criteria levels and produce *significant impacts* at the following unsignalized intersections:

- Phase I time period (1998):  
Willow Pass Road Extension-Pittsburg/Highway 4 Eastbound Ramps.
- Phase II time period (2000):  
Willow Pass Road-Concord/Avila-Leland Road.
- Phase III time period (2005):  
No additional locations.

**g. Project Traffic Impacts--Offsite**

(1) Highway 4 Freeway and Ramps. Table 20 presents impacts due to the addition of San Marco traffic to base case traffic for east- and westbound traffic flow on the Highway 4 freeway in the vicinity of the project site. The table indicates the following project impacts on Highway 4 freeway segments and ramps:

Table 21

VICINITY ROADWAY LINKS OPERATION BASE CASE, WITHOUT AND WITH THE PROJECT--AM PEAK HOUR

| Roadway                                                 | Capacities     |              |         | AM Peak Hour             |                |                         | PM Peak Hour |                |                         |
|---------------------------------------------------------|----------------|--------------|---------|--------------------------|----------------|-------------------------|--------------|----------------|-------------------------|
|                                                         | Four-Lane VLPH | Two-Lane VPH | Two-Way | Base <sup>1</sup> Volume | Acceptable LOS | Base Volume + San Marco | Base Volume  | Acceptable LOS | Base Volume + San Marco |
| Leland Road-East of Bailey                              | 1,200          |              |         | I 905 <sup>2</sup>       | Yes            | 920                     | Yes          | Yes            | 810                     |
|                                                         |                |              |         | II 960 <sup>3</sup>      | Yes            | 985                     | Yes          | Yes            | 875                     |
|                                                         |                |              |         | III 1,070 <sup>4</sup>   | Yes            | 1,095                   | Yes          | Yes            | 990                     |
| Leland Road-West of Bailey                              | 1,200          |              |         | I 460                    | Yes            | 485                     | Yes          | Yes            | 455                     |
|                                                         |                |              |         | II 505                   | Yes            | 540                     | Yes          | Yes            | 525                     |
|                                                         |                |              |         | III 555                  | Yes            | 595                     | Yes          | Yes            | 575                     |
| Leland Road-East of Willow Pass Extension               | 1,200          |              |         | I 325                    | Yes            | 370                     | Yes          | Yes            | 385                     |
|                                                         |                |              |         | II 455                   | Yes            | 530                     | Yes          | Yes            | 520                     |
|                                                         |                |              |         | III 645                  | Yes            | 735                     | Yes          | Yes            | 610                     |
| Leland Road-West of Willow Pass Extension               | 1,200          |              |         | I ---                    | ---            | ---                     | ---          | ---            | ---                     |
|                                                         |                |              |         | II 195                   | Yes            | 300                     | Yes          | Yes            | 235                     |
|                                                         |                |              |         | III 350                  | Yes            | 495                     | Yes          | Yes            | 305                     |
| Avila-Leland East of Willow Pass Concord                | 1,500          |              |         | I ---                    | ---            | ---                     | ---          | ---            | ---                     |
|                                                         |                |              |         | II 505                   | Yes            | 760                     | Yes          | Yes            | 715                     |
|                                                         |                |              |         | III 835                  | Yes            | 1,185                   | Yes          | Yes            | 900                     |
| Bailey Road-North of Leland                             | 1,000          |              |         | I 490                    | Yes            | 490                     | Yes          | Yes            | 525                     |
|                                                         |                |              |         | II 505                   | Yes            | 510                     | Yes          | Yes            | 560                     |
|                                                         |                |              |         | III 540                  | Yes            | 545                     | Yes          | Yes            | 655                     |
| Bailey Road-South of Leland                             | 1,200          |              |         | I 1,010                  | Yes            | 1,065                   | Yes          | Yes            | 1,220                   |
|                                                         |                |              |         | II 1,055                 | Yes            | 1,150                   | Yes          | No             | 1,410                   |
|                                                         |                |              |         | III 1,195                | Border         | 1,325                   | No           | No             | 1,565                   |
| Willow Pass Road-Pittsburg East of Port Chicago Highway | 950            |              |         | I 895                    | Yes            | 895                     | Yes          | Yes            | 515                     |
|                                                         |                |              |         | II 925                   | Yes            | 925                     | Yes          | Yes            | 560                     |
|                                                         |                |              |         | III 955                  | Border         | 960                     | Border       | Yes            | 585                     |

Table 21 (continued)

|                              |                |       |       |     |       |     |       |     |       |     |                     |
|------------------------------|----------------|-------|-------|-----|-------|-----|-------|-----|-------|-----|---------------------|
| Willow Pass Road-<br>Concord | I<br>II<br>III | 2,700 | 1,825 | Yes | 1,915 | Yes | 2,465 | Yes | 2,575 | Yes | Yes<br>Border<br>No |
|                              |                |       | 1,865 | Yes | 2,040 | Yes | 2,515 | Yes | 2,750 | Yes |                     |
|                              |                |       | 1,985 | Yes | 2,255 | Yes | 2,710 | Yes | 3,020 | Yes |                     |
| Evora Road                   | I<br>II<br>III | 1,500 | 735   | Yes | 735   | Yes | 690   | Yes | 690   | Yes | Yes<br>Yes<br>Yes   |
|                              |                |       | 670   | Yes | 670   | Yes | 660   | Yes | 660   | Yes |                     |
|                              |                |       | 700   | Yes | 700   | Yes | 750   | Yes | 750   | Yes |                     |

SOURCE: Crane Transportation Group

<sup>1</sup> Peak direction vehicles per lane per hour on four-lane roadway or two-way vehicles per hour on two-lane roadway.

<sup>2</sup> Phase I (1998)

<sup>3</sup> Phase II (2000)

<sup>4</sup> Phase III (2005)

*Freeway segments.* San Marco traffic would be expected to produce *significant operational impacts* at the following freeway locations:

***AM Peak Hour***

- Phase III time period (2005):  
Westbound, Willow Pass Extension-Pittsburg to Willow Pass Road-Concord (LOS E to LOS F); and

Westbound, west of Willow Pass Road-Concord (more than a five percent increase in a pre-existing LOS F operation).

***PM Peak Hour***

- No Location.

*Ramps.* The additional project traffic would produce no significant impacts on any freeway ramps in the project area during either commute time period.

(2) Local Midblock (Non-Freeway) Roadway Segments. Table 21 presents impacts due to the addition of San Marco peak hour traffic to base case traffic conditions. San Marco traffic would be expected to produce *significant operational impacts* on the following local roadway segments:

***AM Peak Hour***

- Phase III (2005):  
Bailey Road, south of Leland Road.

***PM Peak Hour***

- Phase I (1998):  
Bailey Road, south of Leland Road (borderline operating conditions).
- Phase II (2000):  
Bailey Road, south of Leland road (more than a five percent addition of traffic to an already pre-existing LOS E operation).
- Phase III (2005):  
Bailey Road, south of Leland Road (more than a five percent addition of traffic to an already pre-existing LOS E operation); and  
  
Willow Pass Road-Concord, south of Avila Road (LOS D/E to LOS E/F operation).

**(3) Off-Site Intersection Level of Service.** Tables 14 and 15 show that during the AM and PM peak traffic hours, respectively, project traffic would produce *significant operational impacts* at the following locations:

**AM Peak Hour** (see Table 14)

- No locations, although San Marco traffic would aggravate pre-existing unacceptable operation at the Willow Pass Road-Concord/Avila-Leland Road intersection.

**PM Peak Hour** (see Table 15)

- Phase III (2005):  
Bailey Road/Leland Road (LOS D to LOS E).
- San Marco traffic would also aggravate pre-existing unacceptable PM peak hour operation during Phases II and III at the Willow Pass Road-Concord/Avila-Leland Road intersection.

**(4) Intersection Signalization Warrants.** Table 22 shows that the addition of San Marco traffic alone would not increase volumes at any analyzed off-site unsignalized intersection above signal warrant criteria levels. However, San Marco traffic would significantly aggravate the pre-existing need for signals at the locations listed below. These would be considered *significant operational impacts*.

- Phase I (1998):  
Willow Pass Road Extension-Pittsburg/Highway 4 Eastbound Ramps.
- Phase II (2000):  
Willow Pass Road-Concord/Avila-Leland Road.
- Phase III (2005):  
No new off-site intersections.

**(5) Regional Roadway Impacts.** San Marco buildout traffic volume impacts have been determined at four select locations on the regional roadway network in northern Contra Costa County in order to comply with state AB-40 reporting criteria.<sup>1</sup> Locations selected were: Highway 4 in Antioch west of Sommersville Road, Highway 4 west of Hillcrest Avenue, Highway 4 in central Martinez just east of Morello Avenue, and Kirker Pass Road just north of Concord and Clayton. Future (year 2005) projections for these roadways were available from the Contra Costa County General Plan Circulation Element traffic model (EMME 2) for this time period. However, due to county and City of Concord staffs' general concerns regarding the reliability of these EMME 2 projections and the availability of new,

---

<sup>1</sup>State Assembly Bill 40 sets forth statewide requirements for analysis of traffic impacts on regional highway networks.

r more recent information relating to the traffic generation characteristics of land uses  
r contributing traffic to Highway 4,<sup>1</sup> a set

---

r <sup>1</sup>Draft Subsequent Environmental Impact Report for the Widening and Lowering of Highway 4  
r between Willow Pass Road in Concord and Bailey Road in Pittsburgh, April 1991.



Table 22

**INTERSECTIONS MEETING PEAK HOUR SIGNAL WARRANT CRITERIA--BASE CASE  
WITHOUT AND WITH PROJECT**

---

***Locations Meeting Peak Hour Warrant Met with Base Case Traffic (without Project):***

- Phase I time period (1998):  
Willow Pass Road-Pittsburg/Highway 4 Eastbound Ramps.
- Phase II time period (2000):  
All Intersections listed for Phase I; plus  
Willow Pass Road-Concord/Avila-Leland Road.
- Phase III time period (2005):  
All intersections listed for Phase II.

***Locations Meeting Peak Hour Warrant with Addition of San Marco Traffic to Base  
Volume Traffic:***

- Phase I time period (1998):  
No additional locations, although San Marco traffic would contribute to the pre-existing need for a signal at Willow Pass-Pittsburg/Highway 4 Eastbound Ramps.
- Phase II time period (2000):  
No additional locations, although San Marco traffic would contribute to pre-existing need for signal at Willow Pass Road-Concord/Avila-Leland Road.
- Phase III time period (2005):  
No additional locations.

---

SOURCE: Crane Transportation Group



of revised projections has been developed for the four analysis locations evaluated for this SEIR study by applying a reduction factor to the county general plan projections. This reduction factor was developed based upon the 1990 revised year 2005 traffic projections for Highway 4 between Pittsburg and Concord (Highway 4 Widening EIR) versus those developed for the county general plan. The more current projections for Highway 4 in this area show approximately a 44 percent decrease in traffic over those projected for the county general plan. One quarter of this decrease (11 percent) was used at all other locations in this SEIR analysis.

Table 23 shows that San Marco project traffic would not, by itself, produce a significant impact at any of the remote locations analyzed. It would, however, incrementally add to the base case pre-existing need for widening of Highway 4 through the Antioch area from four to six lanes. The project's impact on the need for future widening of Kirker Pass Road would be insignificant. Highway 4 through Martinez would be operating acceptably with or without San Marco traffic.

(6) Project Impacts on Other Citywide Roadways. The project would contribute to traffic impacts throughout the citywide roadway system beyond the specific intersection and roadway segments analyzed in this SEIR. Although the project itself would not create significant impacts to these other intersection and road segments, it would contribute to cumulative significant traffic impacts at several locations described in the Pittsburg Traffic Mitigation Fee Study (March 1992).

h. San Marco Traffic Impacts--Onsite

Figures 25 and 26 show AM and PM peak hour base case and San Marco traffic volumes on the project roadway system for Phase I. Figures 27 and 28 show AM and PM peak hour San Marco and base case traffic volumes on the project roadway system for Phase II. Figures 29 and 30 show the same information for Phase III.

(1) Onsite Roadway Impacts. As previously determined (and reported) in sections 2f(2) and 2g(2) of this SEIR chapter, the Leland Road extension would be operating well under capacity with San Marco and base traffic volumes for all time periods and phases. The four-lane Willow Pass Road extension south of Leland Road would also be operating well under capacity with San Marco traffic for all time periods and all phases (volumes would be lower than on Leland Road). All on-site collector and residential streets would also have volume levels within acceptable limits.

Proposed roadway alignments appear acceptable in all areas with the exception of the Village A connection to Avila-Leland Road near the Willow Pass Extension intersection. Turn movements to and from this minor intersection would conflict with vehicular movements at the adjacent major intersection and could cause *significant safety problems*.

(2) Onsite Intersection Levels of Service. Tables 24 and 25 present AM and PM peak hour intersection levels of service analysis results, respectively, for the major intersections planned along Avila-Leland Road and the Willow Pass Road extension through the San Marco site.

Table 24 indicates that, during the AM peak traffic hour, all major onsite intersections would be operating acceptably through Phase II development. This assumes that no intersections would be signalized and that the Avila-Leland Road/Willow Pass Road extension intersection would be an all-way stop. By completion of Phase III, however, this all-way stop intersection would be operating at an unacceptable level (LOS E). This would represent a *significant operational impact*.

Table 25 indicates that, during the PM peak traffic hour, all major onsite intersections would be operating acceptably through Phase II development. By completion of Phase III, however, four onsite intersections would be experiencing unacceptable operation: Avila-Leland Road/Willow Pass Road extension (LOS F), Avila-Leland Road/Village A and M access (LOS F operation for the stop sign controlled left turn from Village M), Avila-Leland Road/Village B-Park Access (LOS F operation for the stop sign controlled left turn from Village B) and Avila-Leland Road/B Street-Village C Access (LOS F operation for the stop sign controlled left turn from Village C). These would represent *significant operational impacts*.

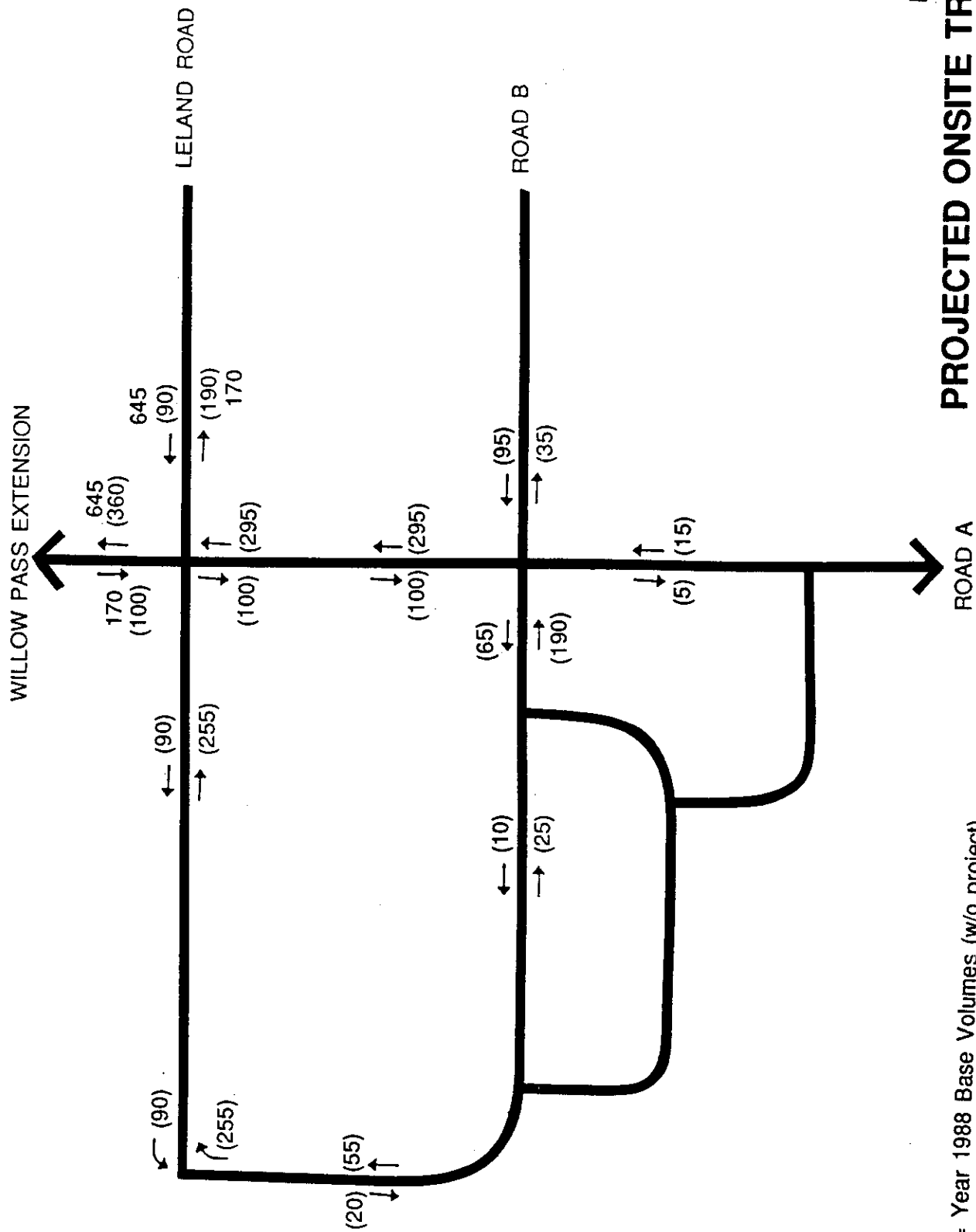
(3) Onsite Intersection Signalization Warrants. The Avila-Leland/Willow Pass Road extension intersection would have PM peak volumes exceeding signal warrant criteria levels by the end of Phase I San Marco development. AM volumes at this intersection would exceed signal warrant criteria levels by the end of Phase II development. As an all-way stop, this intersection would be approaching unacceptable operation by the end of Phase II, and therefore, signalization needs here would be considered to represent a *significant operational impact* by that time.

The Avila-Leland/B Street intersection would have both AM and PM peak volumes exceeding signal warrant criteria levels by the end of Phase III development. Also, the Avila-Leland/Villages A and M Access intersection would have volumes meeting or exceeding signal warrant criteria levels by the end of this same phase. These signalization needs would be considered to represent *significant operational impacts*.

### **3. MITIGATION MEASURES**

#### a. Existing Conditions

Provision of planned local area roadway system improvements (see Figure 16) would reduce identified existing unacceptable operating conditions to a level of insignificance at all



100 = Year 1988 Base Volumes (w/o project)  
 (10) = San Marco (Phase I)

**Figure 25**  
**PROJECTED ONSITE TRAFFIC**  
**VOLUMES--PHASE I, AM**

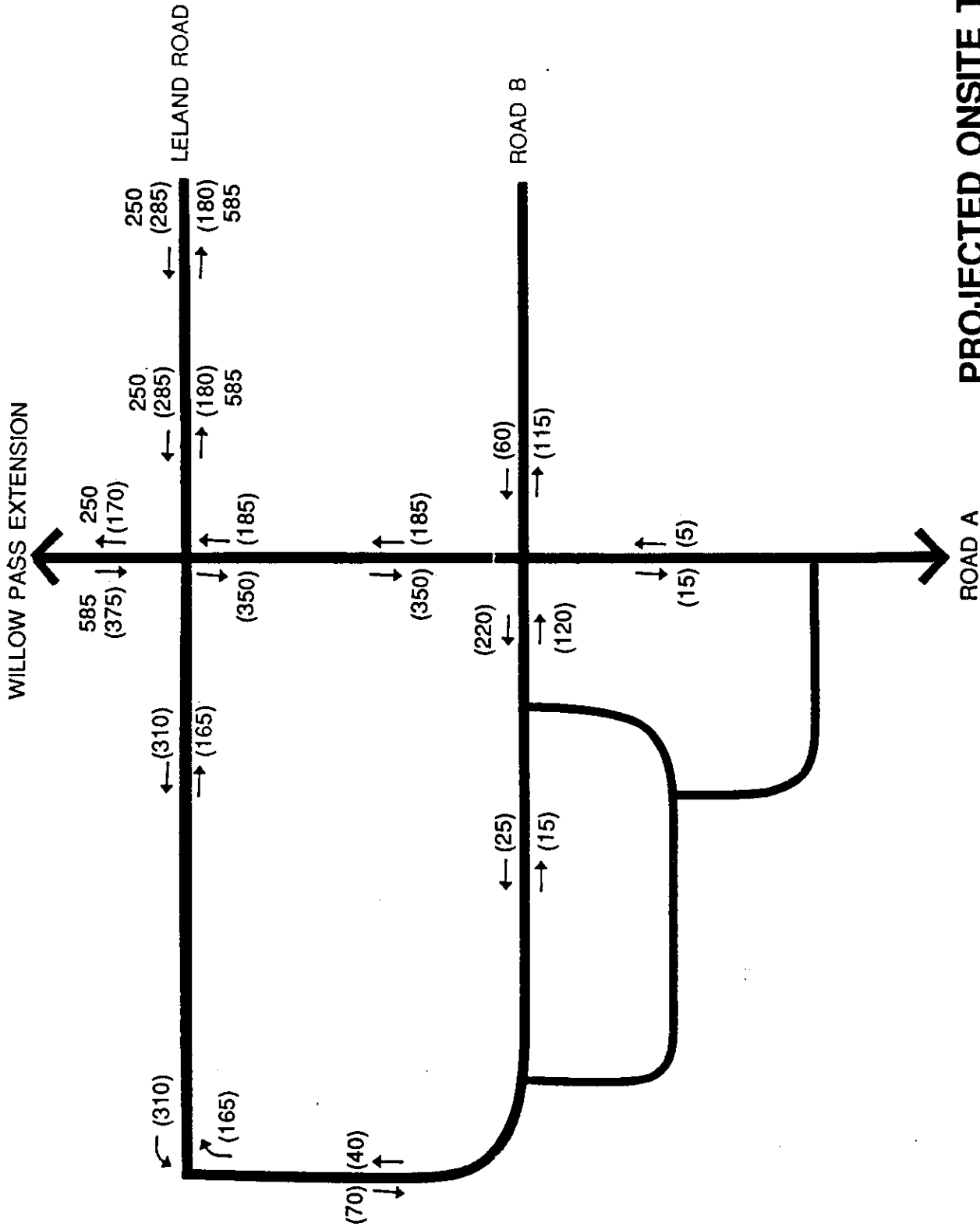
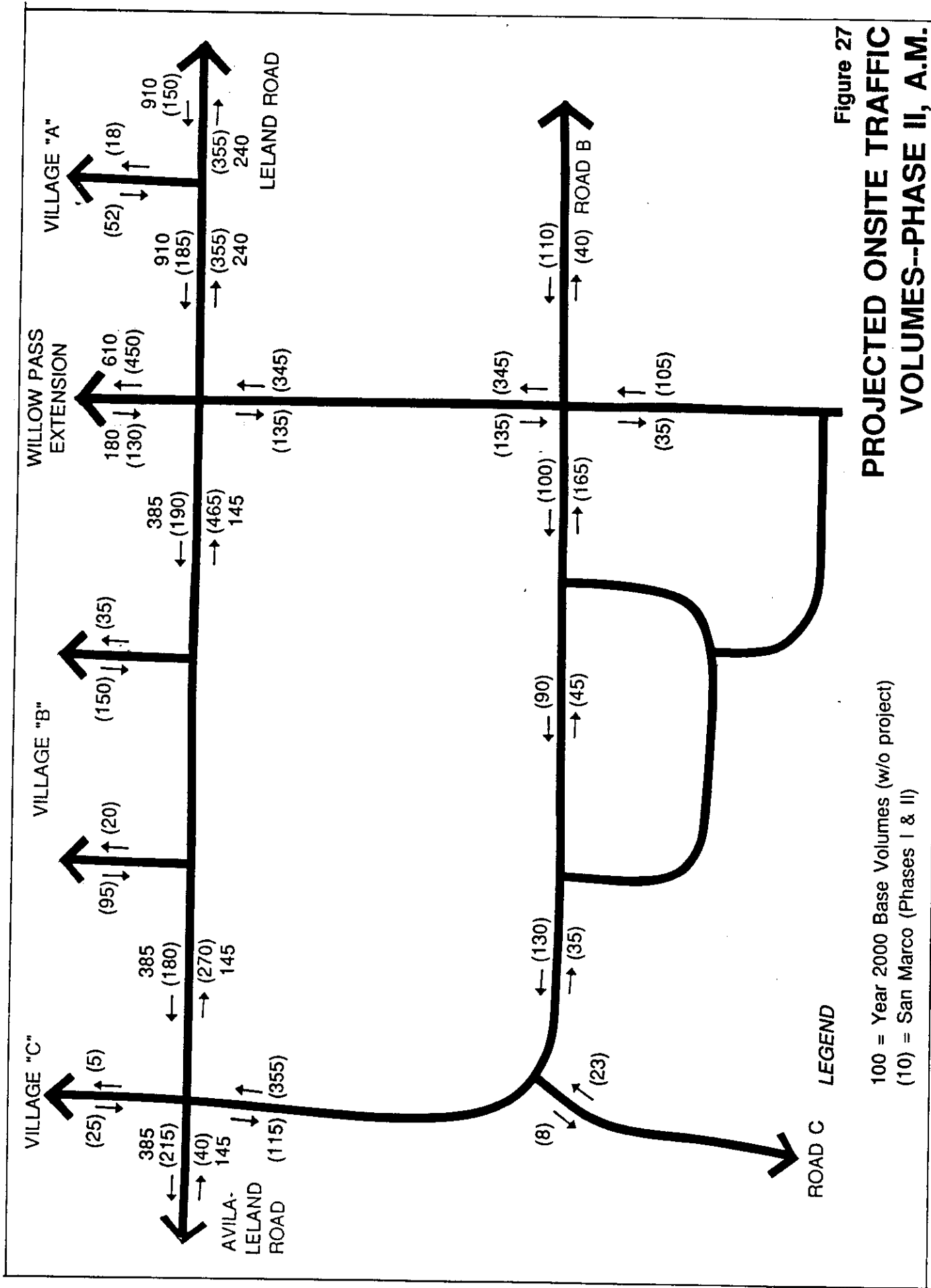
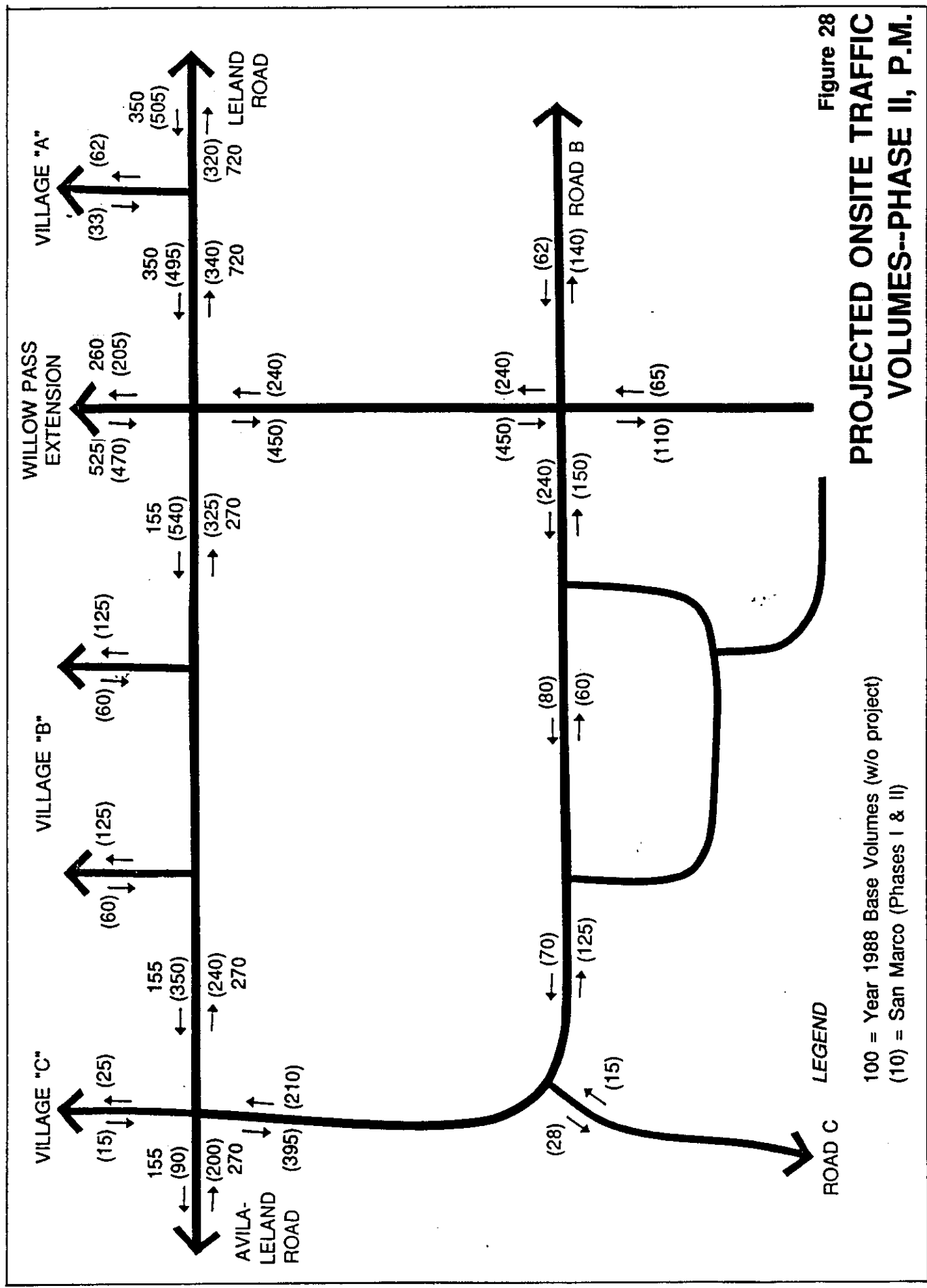


Figure 26  
PROJECTED ONSITE TRAFFIC  
VOLUMES--PHASE I, P.M.





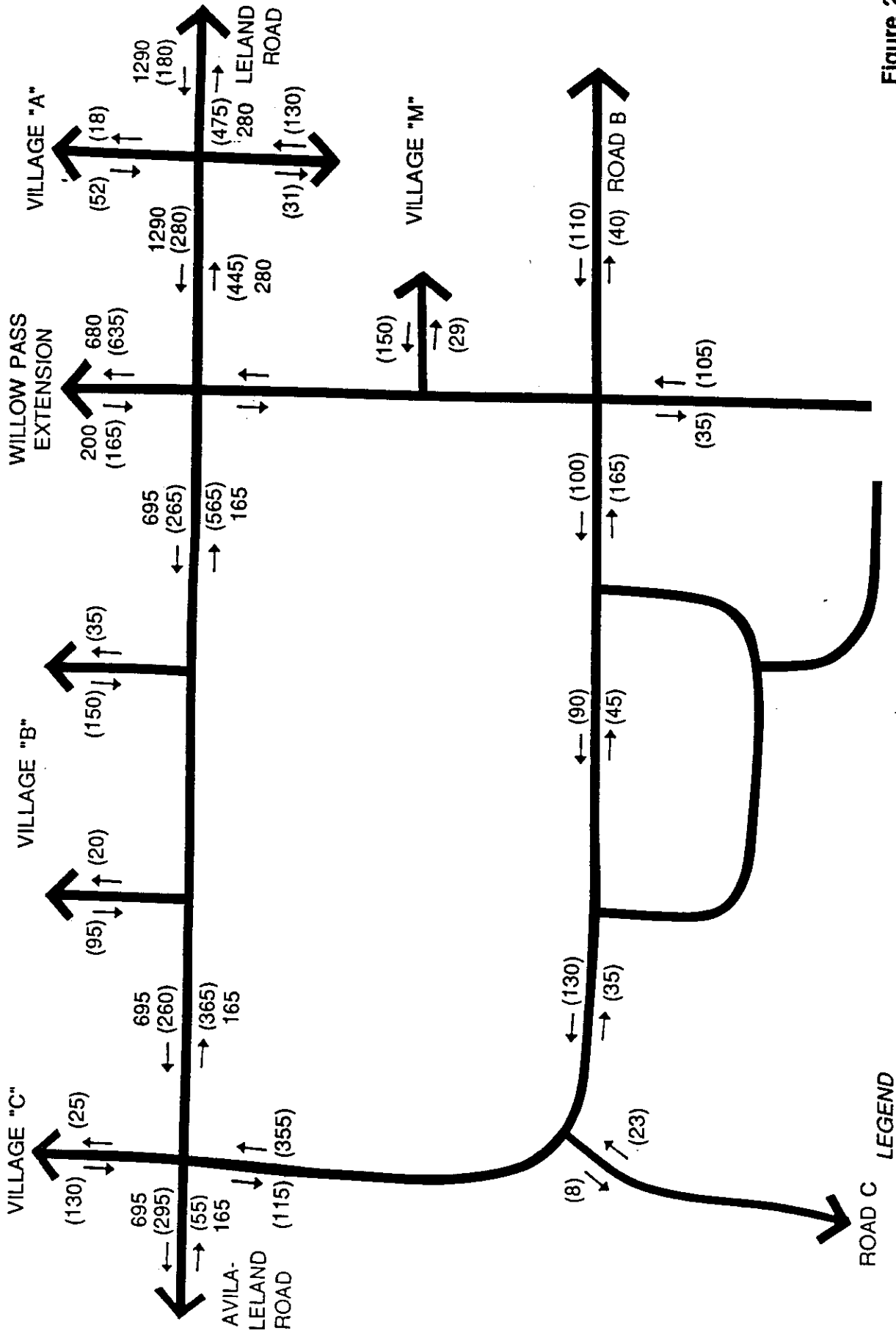


Figure 29  
**PROJECTED ONSITE TRAFFIC VOLUMES--PHASE III, A.M.**

100 = Year 2005 Base Volumes (w/o project)  
 (10) = San Marco (Phases I, II & III)

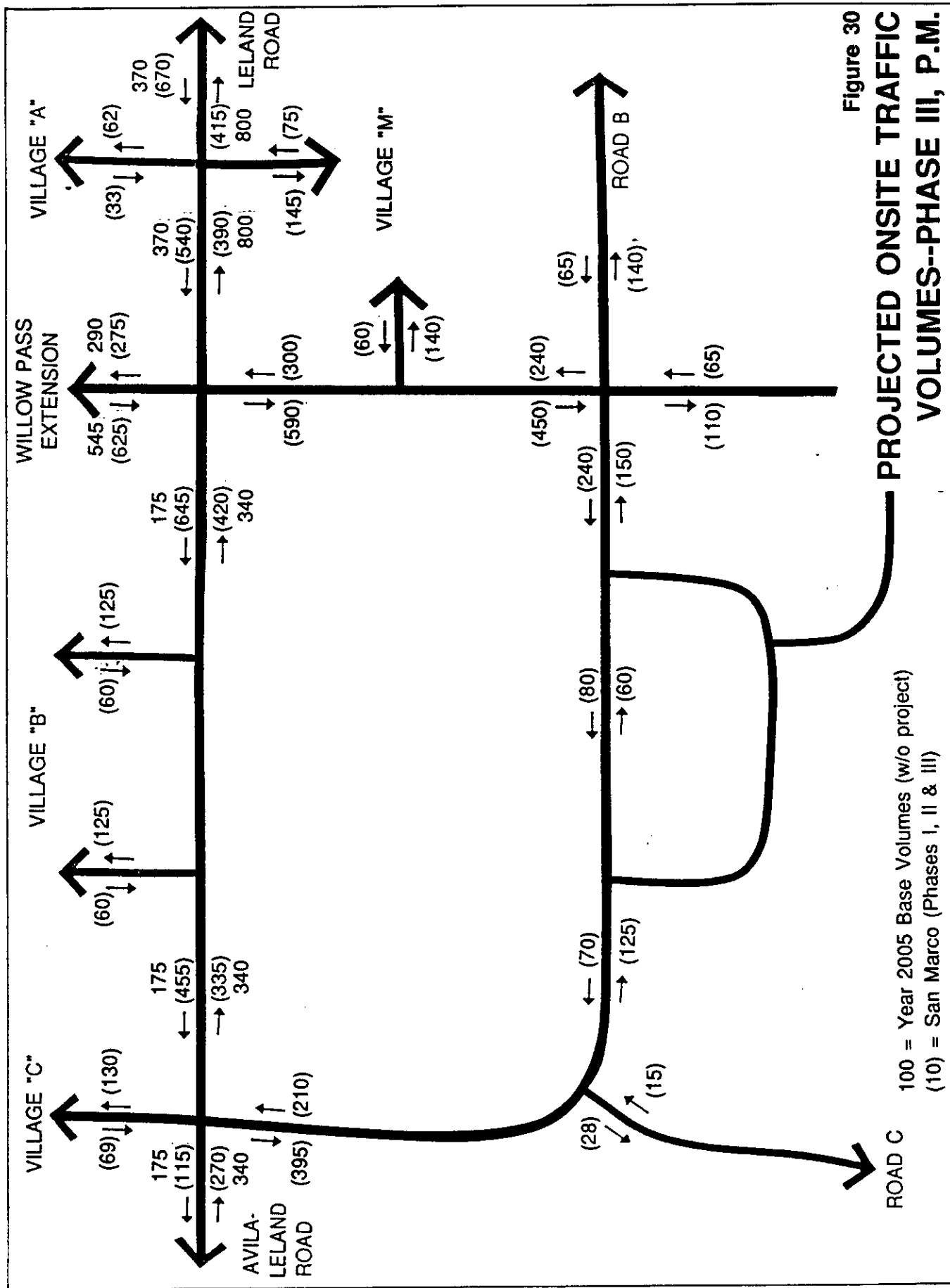


**Figure 30**  
**PROJECTED ONSITE TRAFFIC**  
**VOLUMES--PHASE III P.M.**



Table 23  
**PROJECT IMPACTS ON REGIONAL ROADWAY LINKS--2005**

| <u>Location</u>                                  | <u>AM Peak Hour</u> |                                                 |                                           |                                                                                |
|--------------------------------------------------|---------------------|-------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------|
|                                                  | <u>Base Volume</u>  | <u>Acceptable<br/>Base Volume<br/>Operation</u> | <u>San Marco<br/>Volume<br/>Increment</u> | <u>Acceptable<br/>Operation<br/>With Addition<br/>of San Marco<br/>Traffic</u> |
| Highway 4 (Martinez) East of<br>Morello Avenue   |                     |                                                 |                                           |                                                                                |
| Eastbound                                        | 2,710               | Yes                                             | 20                                        | Yes                                                                            |
| Westbound                                        | 3,120               | Yes                                             | 100                                       | Yes                                                                            |
| Highway 4 (Antioch) West of<br>Sommersville Road |                     |                                                 |                                           |                                                                                |
| Eastbound                                        | 1,330               | Yes                                             | 150                                       | Yes                                                                            |
| Westbound                                        | 5,925               | No (4-lane fwy)<br>Yes (6-lane fwy)             | 40                                        | No (4-lane fwy)<br>Yes (6-lane fwy)                                            |
| Highway 4 (Antioch) West of<br>Hilicrest Avenue  |                     |                                                 |                                           |                                                                                |
| Eastbound                                        | 1,170               | Yes                                             | 20                                        | Yes                                                                            |
| Westbound                                        | 4,580               | No (4-lane fwy)<br>OR<br>Yes (6-lane fwy)       | 80                                        | No (4-lane fwy)<br>Yes (6-lane fwy)                                            |
| Kirker Pass Road (just north<br>of Concord)      |                     |                                                 |                                           |                                                                                |
| Northbound                                       | 790                 | Yes                                             | 5                                         | Yes                                                                            |
| Southbound                                       | 3,250               | No (4-lane road)<br>Yes (6-lane road)           | 15                                        | No (4-lane road)<br>Yes (6-lane road)                                          |
| Highway 4 (Martinez) East of<br>Morello Avenue   |                     |                                                 |                                           |                                                                                |
| Eastbound                                        | 3,420               | Yes                                             | 90                                        | Yes                                                                            |
| Westbound                                        | 3,070               | Yes                                             | 35                                        | Yes                                                                            |
| Highway 4 (Antioch) West of<br>Sommersville Road |                     |                                                 |                                           |                                                                                |
| Eastbound                                        | 5,550               | No (4-lane fwy)<br>Yes (6-lane fwy)             | 40                                        | No (4-lane fwy)<br>Yes (6-lane fwy)                                            |
| Westbound                                        | 1,910               | Yes                                             | 155                                       | Yes                                                                            |
| Highway 4 (Antioch) West of<br>Hilicrest Avenue  |                     |                                                 |                                           |                                                                                |
| Eastbound                                        | 4,800               | No (4-lane fwy)<br>Yes (6-lane fwy)             | 20                                        | No (4-lane fwy)<br>Yes (6-lane fwy)                                            |
| Westbound                                        | 2,560               | Yes                                             | 70                                        | Yes                                                                            |
| Kirker Pass Road (just North of<br>Concord)      |                     |                                                 |                                           |                                                                                |
| Northbound                                       | 2,890               | No (4-lane road)<br>Yes (6-lane road)           | 15                                        | No (4-lane road)<br>Yes (6-lane road)                                          |
| Southbound                                       | 1,250               | Yes                                             | 10                                        | Yes                                                                            |

SOURCE: Crane Transportation Group

Table 24

**PROJECT INTERNAL INTERSECTION LEVEL OF SERVICE--AM PEAK HOUR**

| <u>Intersection</u>                          | <u>Phase I<br/>with<br/>Project</u>    | <u>Phase II<br/>without<br/>Project</u> | <u>Phase II<br/>with<br/>Project</u> | <u>Phase III<br/>without<br/>Project</u> | <u>Phase III<br/>with<br/>Project</u> |
|----------------------------------------------|----------------------------------------|-----------------------------------------|--------------------------------------|------------------------------------------|---------------------------------------|
| Willow Pass<br>Extension/Avila-Leland        | A - .59 <sup>1</sup><br>C <sup>2</sup> | B                                       | C - .72 <sup>1</sup><br>D            | A - .48 <sup>1</sup><br>C                | D - .88 <sup>1</sup><br>F             |
| Willow Pass Extension/<br>B Street           | AAA/AAA/AA <sup>3</sup>                |                                         | AAA/BAA/AA                           |                                          | AAA/BAA/AA                            |
| Avila-Leland/Village A<br>Access             |                                        |                                         | EA/C <sup>4</sup>                    |                                          | FEA/EEA/DA <sup>5</sup><br>A - .51    |
| Avila-Leland/Village B<br>Access/Park Access |                                        |                                         | EA/A <sup>4</sup>                    |                                          | FA/BA <sup>6</sup>                    |
| Avila-Leland/Village B/C                     |                                        |                                         | DA/A <sup>4</sup>                    |                                          | EA/B                                  |
| Avila-Leland/Village C-B<br>Street           |                                        |                                         | DBA/DBA/AA <sup>5</sup>              |                                          | EDA/FDA/BA<br>A - .47                 |
| Willow Pass Extension/<br>Village M Access   |                                        |                                         |                                      |                                          | AA/A <sup>7</sup>                     |

SOURCE: Crane Transportation Group

Signalized level of service results are presented when volume levels at intersections exceed peak hour signal warrant criteria levels for either AM or PM peak conditions.

<sup>1</sup> Signalized Level of Service - Volume to Capacity Ratio

<sup>2</sup> All-Way Stop

<sup>3</sup> Westbound Left, Through, Right/Eastbound Left, Through, Right/Northbound Left, Southbound Left

<sup>4</sup> Southbound Left, Southbound Right/Eastbound Left

<sup>5</sup> Northbound Left, Through, Right/Southbound Left, Through, Right/Eastbound Left, Westbound Left

<sup>6</sup> Southbound Left, Southbound Right/Eastbound Left, Westbound Left

<sup>7</sup> Westbound Left, Westbound Right/Southbound Left

Table 25

PROJECT INTERNAL INTERSECTION LEVEL OF SERVICE--PM PEAK HOUR

| <u>Intersection</u>                          | <u>Phase I<br/>with<br/>Project</u>    | <u>Phase II<br/>without<br/>Project</u> | <u>Phase II<br/>with<br/>Project</u> | <u>Phase III<br/>without<br/>Project</u> | <u>Phase III<br/>with<br/>Project</u> |
|----------------------------------------------|----------------------------------------|-----------------------------------------|--------------------------------------|------------------------------------------|---------------------------------------|
| Willow Pass<br>Extension/Avila-Leland        | A - .60 <sup>1</sup><br>C <sup>2</sup> | B                                       | B - .67 <sup>1</sup><br>D            | A - .47 <sup>1</sup><br>B                | C - .72 <sup>1</sup><br>E             |
| Willow Pass Extension/<br>B Street           | AAA/AAA/AA <sup>3</sup>                |                                         | AAA/AAA/AA                           |                                          | AAA/AAA/AA                            |
| Avila-Leland/Village A<br>Access             |                                        |                                         | EA/B <sup>4</sup>                    |                                          | EEA/EEA/BD <sup>5</sup><br>A - .44    |
| Avila-Leland/Village B<br>Access/Park Access |                                        |                                         | DA/A <sup>4</sup>                    |                                          | EA/AA <sup>6</sup>                    |
| Avila-Leland/Village B/C                     |                                        |                                         | DA/A <sup>4</sup>                    |                                          | EA/A                                  |
| Avila-Leland/Village C-B<br>Street           |                                        |                                         | EDA/EDA/AB <sup>5</sup>              |                                          | EEA/EEA/AC<br>A - .41                 |
| Willow Pass Extension/<br>Village M Access   |                                        |                                         |                                      |                                          | BA/A <sup>7</sup>                     |

SOURCE: Crane Transportation Group

Signalized level of service results are presented when volume levels at intersections exceed peak hour signal warrant criteria levels for either AM or PM peak conditions.

<sup>1</sup> Signalized Level of Service - Volume to Capacity Ratio

<sup>2</sup> All-Way Stop

<sup>3</sup> Westbound Left, Through, Right/Eastbound Left, Through, Right/Northbound Left, Southbound Left

<sup>4</sup> Southbound Left, Southbound Right/Eastbound Left

<sup>5</sup> Northbound Left, Through, Right/Southbound Left, Through, Right/Eastbound Left, Westbound Left

<sup>6</sup> Southbound Left, Southbound Right/Eastbound Left, Westbound Left

<sup>7</sup> Westbound Left, Westbound Right/Southbound Left

locations with the exception of the need for signals at the Willow Pass-Concord interchange ramp intersections. To mitigate this remaining impact, Caltrans or Contra Costa County should provide signals at the Highway 4 east- and westbound off-ramp intersections with Willow Pass Road-Concord. Resultant existing operation would be LOS A at both locations during both peak traffic periods.

**b. Base Case Traffic Impacts (without Project)**

**(1) Needed Improvements to Highway 4 Freeway and Ramps.** City implementation of the following measures would reduce all identified significant impacts identified for anticipated base case future traffic conditions on Highway 4 (without the project) to less than significant levels.

By the end of the Phase I time period (1998):

- Require fair-share contributions from all "base case" developments for one additional freeway lane in each direction on Highway 4 west of the Willow Pass Road-Concord interchange to Port Chicago interchange.
- Require fair-share contributions from all "base case" developments for one additional freeway lane in each direction on Highway 4 east of the Bailey Road interchange to Railroad Avenue or beyond.
- Require fair-share contributions from all "base case" development projects for a second southbound Willow Pass Road-Pittsburg to westbound Highway 4 on-ramp lane to accommodate AM peak flows. A short additional auxiliary lane should be provided to the west of the on-ramp merge area with the freeway mainline.

**(2) Local Midblock (Non-Freeway) Roadway Segments.** City implementation of the following measures would reduce base case impacts on local roadway segments to less than significant levels.

By the end of the Phase II time period (2000):

- Require fair-share contributions from all "base case" developments to improve Bailey Road between Leland Road and the City of Concord. Improvements should entail at a minimum select realignment to reduce sharp curves and minimize steep grades, provision of wider travel lanes and wide paved shoulders. Ideally, two additional travel lanes should also be provided.

By the end of the Phase III time period (2005):

- Require fair-share contributions from all "base case" developments for widening of Willow Pass Road-Concord from two to four lanes from Avila Road (Highway 4) through the U.S. Naval Weapons Station.

(3) Offsite Intersection Signalization Warrants and Levels of Service. City implementation of the following measures would reduce base case impacts on offsite intersections (signal warrants and LOS) to less than significant levels.

By the end of the Phase I time period (1998):

- Require fair-share contributions from all "base case" developments to the new signal that would be warranted at the Willow Pass Extension/Highway 4 Eastbound Off-Ramp intersection.

By the end of the Phase II time period (2000):

- Require fair-share contributions from all "base case" developments to the signal that would be warranted at the Avila-Leland/Willow Pass Road-Concord intersection. Also, require fair-share contributions to construction of the left and right turn deceleration lanes that would be needed on the Willow Pass Road-Concord intersection approaches as well as the widening that would be needed on the Avila-Leland intersection approach to provide separate right and left turn lanes.

By the end of the Phase III time period (2005):

- Require fair-share contributions from all "base case" developments for the new signal that would be warranted at the Avila-Leland Road/Willow Pass Extension intersection.

(4) Needed Improvements to Regional Roadways. Require all new development to pay a *traffic impact mitigation fee* that should be established by the Contra Costa Transportation Authority (CCTA) and collected locally to fund CCTA-identified regional roadway improvement needs. These fees, in combination with state and federal funding, should be utilized for provision of freeway/arterial widening as well as provision of reliable transit operation and other measures to reduce the use of the automobile.

(5) Needed Improvements to Citywide Roadways. Require development to pay a Traffic Mitigation Fee, being considered for adoption by city council in June of 1992. These fees are to mitigate city-wide development traffic impact as described in the Pittsburg Traffic Mitigation Fee Study (March 1992).

c. Project Traffic Impacts--Offsite

(1) Base Case Mitigation Needs. Provide a project fair-share contribution to all base case mitigation needs identified under section b above.

(2) Needed Additional Improvements to Highway 4 Freeway and Ramps. City and project implementation of the following additional measures would reduce identified project impacts on freeway traffic volumes to less than significant levels.

By the end of Phase III (2005), the project should:

- Provide a 200- to 300-space *park-and-ride lot* (two to three acres) adjacent to or near the Willow Pass Road-Pittsburg/Highway 4 interchange to encourage use of alternative transportation modes. The facility could be provided onsite, on an offsite location on either side of the freeway (which might use some of the freeway or freeway interchange/Evora Road reconstruction right-of-way), or through some combination of these possibilities.
- Coordinate internal street design with local transit companies to provide bus stops (including shelters) at frequent locations throughout the project.
- Provide TSM/TDM information to all new residents informing them of local transit options and schedules as well as car and vanpool information.

By the end of Phase III (2005), the city should:

- r ■ If the CCTA project provides sufficient pavement width for eight lanes, plus auxiliary  
r lanes along Highway 4 between Willow Pass Road in Concord and Willow Pass Road  
r in Pittsburg, no additional mitigation would be required.<sup>1</sup> If the CCTA project provided  
r only pavement width for six lanes plus auxiliary lanes, require a fair-share contribution  
from the San Marco project and all other benefitting developments towards the addition  
of one freeway lane in each direction (possibly an HOV lane) from the Willow Pass  
Road-Pittsburg interchange to west of the Willow Pass Road-Concord interchange.  
This contribution could be established cooperatively by the cities of Pittsburg and  
Concord in consultation with Caltrans and collected locally, or could be developed by  
the CCTA or some other regional organization that would be empowered to develop  
off-site mitigation fees to be assessed to developments over a specified size in each  
r local jurisdiction for regional roadway improvements. If such a mitigation fee structure  
r is not established and implemented prior to issuance of all San Marco building permits,  
r then the impacts of those pre-fee project building permit approvals on Highway 4 and  
r other roadway system components outside of the City of Pittsburg would be considered  
r unmitigable significant adverse impacts of the project.

(3) Needed Improvements to Local Midblock Roadway Segments. City implementation of the following measures would reduce project impacts on local roadways to less than significant levels.

By the end of Phase II (2000), the city should:

---

r <sup>1</sup>A CCTA letter to Randy Jerome, dated August 7, 1992 states that the widening project would  
r include widening to eight lanes, plus auxiliary lanes.

- Require fair-share contributions from the project and other benefitting developments towards the widening/improvements that would be needed along Bailey Road from Leland Road to the City of Concord. Other mitigation measures described under (2) above to reduce vehicular use by project residents (park-and-ride lot, transit, TSM, TDM) would also be appropriate.

By the end of Phase III (2005), the city should:

- Require fair-share contributions from the project and other benefitting developments towards the widening that would be needed along Willow Pass Road-Concord from two to four lanes south of Avila Road. Other mitigation measures described under (2) above to reduce vehicular use by project residents would also be appropriate.





(4) Needed Improvements to Offsite Intersections. Project implementation of the following measures would reduce project impacts to offsite intersections (signal warrants and LOS) to less than significant levels.

By the end of Phase I (1998):

- Provide a project fair-share remaining contribution towards the signalization of the Willow Pass Road-Pittsburg/Highway 4 Eastbound Ramps Intersection (a base case mitigation need described under b(2) herein).

By the end of Phase II (2000):

- Provide a project fair-share contribution towards the signalization and geometric improvements needed at the Avila-Leland/Willow Pass Road-Concord intersection (a base case mitigation need described under b(2) herein).

By the end of Phase III (2005):

- Provide a right turn lane on the eastbound Leland Road approach to Bailey Road. Resultant PM peak hour operation would be improved from LOS E to LOS D.

(5) Regional Roadway Impacts. As explained under mitigation c(2) above, a regional traffic impact mitigation fee structure should be developed by the Contra Costa Transportation Authority in cooperation with the City of Pittsburg, other adjacent jurisdictions, and the TRANSPLAN committee. The project should be required to pay such a fee. These fees, in combination with state and federal funding, should be utilized for provision of freeway/arterial widening as well as provision of reliable transit operations and other measures to reduce use of the automobile. Implementation of this fee by the CCTA and fair-share payment by the project would reduce project impacts on regional roadways to less than significant levels. As also stated under C(2) above, failure to implement such a fee prior to approval of all project building permits would result in project impacts on the regional roadway system which are unmitigable significant impacts.

d. Project Traffic Impacts--Offsite

Implementation of the measures listed below would reduce identified impacts related to onsite circulation to less than significant levels with the following exception: the Avila-Leland Road intersection with the easterly Village B access would not meet peak hour warrants for signalization. Therefore, resultant PM peak hour unacceptable operation for the stop sign controlled outbound left turn movement from the Village B driveway would remain. This impact could not be reduced to a level of insignificance.

The measures which should be implemented are as follows:

At the beginning of Phase I:

- r ■ Construct Leland Road through the Alves property. (Project approval should be  
r conditioned upon completion of this roadway extension.)
- Redesign the project site plan to eliminate the Village A street connection to Avila-Leland near the Willow Pass Road extension intersection.



- Provide an interim emergency access connection from the west end of Leland Road or the south end of Willow Pass Road on the San Marco site to the existing local (non-San Marco) street system (possibly to the new Alves development street system, if it exists by this time).

By the end of Phase II (2000):

- Signalize, when warranted, the Avila-Leland/Willow Pass Road extension intersection. Resultant operation would be LOS A during all peak time periods.

By the end of Phase III (2005):

- Signalize, when warranted, the Avila-Leland Road intersections with Street B/Village C Access and with the Village A and M access drives. Resultant operation would be LOS A during all peak time periods at both intersections.

---

## D. SOILS AND GEOLOGY

---

This section describes existing geologic and soils conditions on the project site, possible impacts of the project in light of these conditions, and measures warranted to mitigate significant adverse environmental effects. The descriptions are based on peer review of a previously performed geotechnical report for the site,<sup>1</sup> selected geologic literature and maps pertaining to the project area, and on surface geological field reconnaissance and analysis of the project site by Herzog Associates, EIR geoscientists.

### 1. SETTING

#### a. Regional Geologic Setting

The project site lies within the easterly edge of the Coast Range Geomorphic Province, which in the project vicinity is characterized by northwest-southeast trending, folded and faulted, low mountain ranges that separate the San Joaquin Valley from the Pacific Ocean. Generally, this province is a complex system of sub-parallel ranges and valleys whose structural trends are controlled by the San Andreas fault system. Existing geomorphic features have been created by, or are related to, the development of Mount Diablo and continuing activity within several major fault zones.<sup>2</sup> The region is underlain by Cretaceous volcanic and sedimentary basement rocks and a series of Tertiary Sedimentary strata.<sup>3</sup>

#### b. Site Topography

The 639 acre site is situated on the edge of a series of northwest-trending mountain chains. Elevations on the site range from approximately 150.5 feet above sea level near the northeast corner of the property to approximately 867.0 feet above sea level at the summit of a ridge in the southwest quarter of the site.

---

<sup>1</sup>Engeo, Inc., Geotechnical Feasibility Exploration for the San Marco Development, Pittsburg, California, April 2, 1991.

<sup>2</sup>R. D. Brown, Jr., Faults That Are Historically Active or That Shown Evidence of Geologically Young Surface Displacement, San Francisco Bay Region: A Progress Report, October, 1970 (USGS Open File Report).

<sup>3</sup>J. L. Sims, Preliminary Geologic Map of Solano County, and Parts of Napa and Contra Costa Counties, California, 1973 (USGS Open File Report).

Site topography is shown on Figure 4 in section III of this EIR (Project Description). The site consists of rolling foothill terrain dominated by three drainage courses that trend northerly between intervening hills and ridges. The principal channels of these drainage courses are deeply incised toward the south (see photo on page IV.A--2), but as the channel gradients decrease toward the north, broad alluvial plains bordered by terraces appear. The upper reaches of the major stream channels are fed by seasonally-recharged secondary ravines that form "dendritic" or tree shaped drainage patterns.

Slopes on the site hillsides range from gradual to steep, generally ranging from less than five percent along the lower reaches of the stream channels and bordering terraces to 60 percent along ridge flanks. At and near bedrock outcrops, slopes are as steep as 90 percent.

#### c. Site Geologic Conditions

Site geologic conditions are mapped on Figure 31. The site is underlain by Tertiary sedimentary strata. The Tertiary sedimentary strata is, in turn, underlain by Cretaceous volcanic and sedimentary basement rocks. The Cretaceous rocks consisting primarily of marine sandstone, shale, and conglomerate which were deposited about 70 to 135 million years ago and are of the Great Valley Sequence.<sup>1</sup>

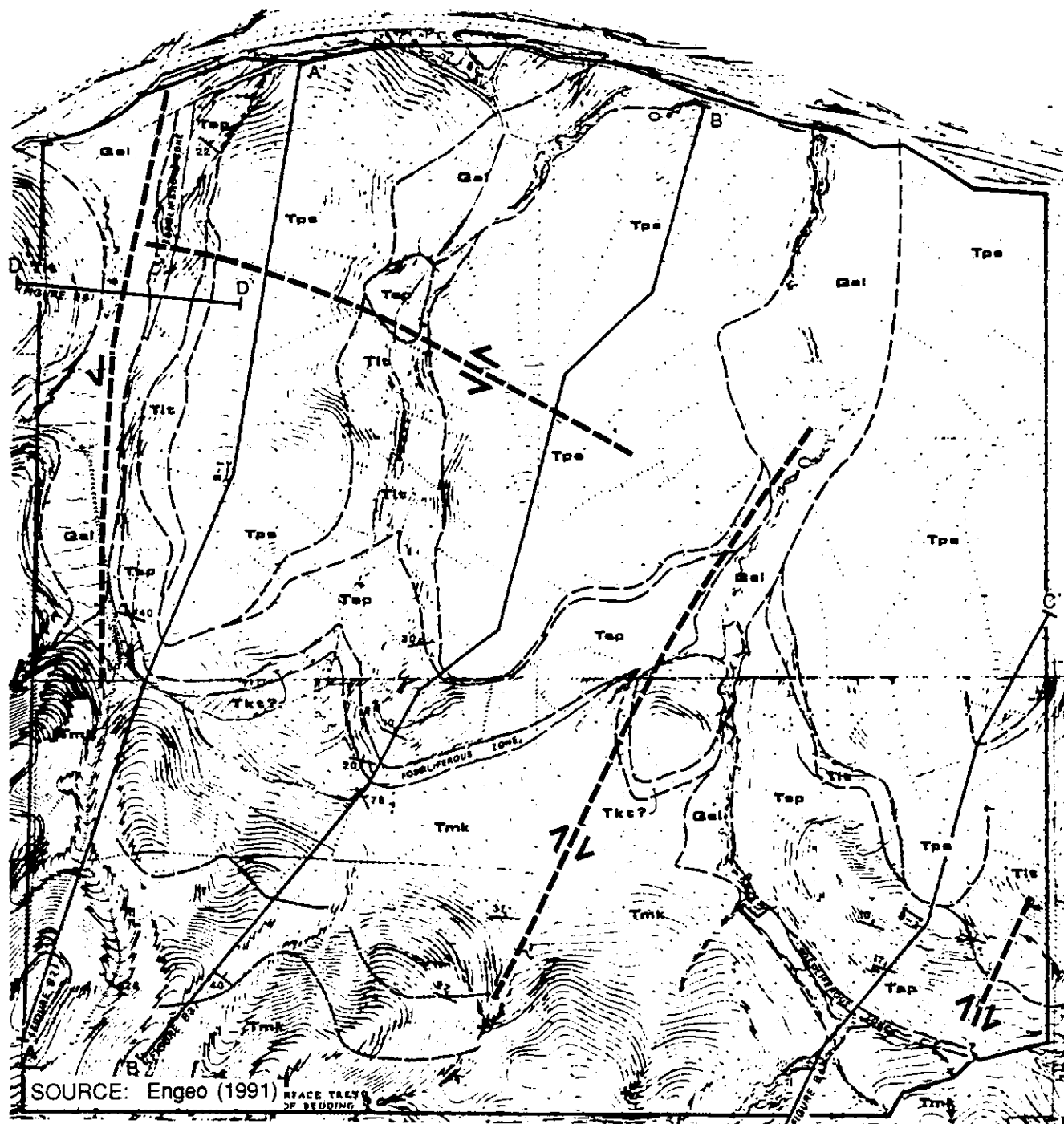
The Tertiary rocks consist of several formations as old as 60 million years. Among the formations and geologic periods are: the Markey Formation, containing predominantly sandstone deposited during the Eocene age (40 to 60 million years old); the Kirker Tuff, predominantly volcanoclastic and fossiliferous sedimentary deposits of Oligocene age (25 to 40 million years old); the San Pablo Group, predominantly sandstone and subordinate shale of the Cierbo and Neroly Formations of the Miocene age (11 to 25 million years old); the Lawler Tuff, principally pumice from the Pliocene age (one to 11 million years old); and the Tahama Formation, composed of siltstone, sandstone, claystone, and conglomerate, also of the Pliocene age.

The series of Tertiary layers forms the local Los Medanos Homocline geologic unit that dips gently downward to the northeast at approximately 10 to 30 degree angles.<sup>2</sup> Adversely-oriented bedding (i.e., where the rock strata extends out of the slope at an angle that is flatter than the slope itself), occurs on northeast-facing slopes as well as at many other onsite locations (see Figure 3, the aerial photograph, and the first photo on page IV.A--2).

---

<sup>1</sup>E. E. Brabb, Geologic Map of the Mount Diablo-Byron Area, 1971 (USGS Open File Report).

<sup>2</sup>T. W. Dibblee, Preliminary Geologic Map of the Honker Bay 7-1/2 Minute Quadrangle, Contra Costa County, California, 1980 (USGS Open File Report).



SOURCE: Engeo (1991)



FAULT-LIKE FEATURE, SHOWING DIRECTION OF POSSIBLE MOVEMENT



QUATERNARY ALLUVIUM



TERTIARY TEHAMA FORMATION



TERTIARY LAWLER TUFF



TERTIARY SAN PABLO GROUP



TERTIARY KIRKER TUFF



TERTIARY MARKLEY FORMATION



STRIKE AND DIP OF BEDDING

SCALE IN FEET

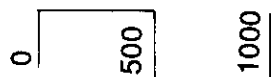


Figure 31  
**GEOLOGIC MAP**

San Marco Project City of Pittsburgh

The rock formations are overlain by recent deposits of variable composition and origin.<sup>1</sup> Terrace deposits form alluviated benches along prominent drainageways that have been rejuvenated by regional uplift associated with movements on nearby active faults. More recent alluvial deposits are confined to the major stream channels. Alluvial fan deposits, caused by accumulations on past debris flows, exist at isolated locations. Colluvial deposits, created by the slow down-slope accumulation of soils under the influences of gravity and saturation, occupy most of the broader areas between ridges and most of the swales. Small areas of artificial fill created for access roads, gas well pads, and dams for stock watering ponds, are present at several locations throughout the site.

#### d. Soils

(1) General. Soil characteristics on the site are shown on Figure 32. Recent grading for the construction of roads, gas well pads and other improvements may have changed the surface soil conditions at isolated, limited locations on and adjacent to the site.

Outside the limits of the major stream channels, the native surface soil types onsite consist of clays derived by in-place weathering of the underlying parent bedrock. These soils are differentiated by the inclinations of slopes on which they are located.

The Altamont Series are well-drained soils distributed over higher elevations. The Capay Series are moderately well-drained soils found on lower margins of valleys and terraces. The Diablo Series consists of well-drained soils derived primarily by in-place weathering of underlying bedrock. The Lodo Series consists of rapidly draining soils on uplands.

Over most areas of the site, the depth to bedrock is relatively shallow and rock outcrops break the surface in many areas. The only exceptions where the depth to bedrock may be relatively deep are in areas of alluvial or colluvial soils, landslides, or fan deposits. These areas are shown on Figure 32 as underlain by the Lodo Rock Outcrop Complex. Soils on the site were classified by the U.S. Department of Agriculture in 1966 as calcareous silty clay of the Altamont Series, calcareous clay or calcareous heavy silty clay loam of the Capay Series, calcareous clay and calcareous silty clay of the Diablo Series, and acidic clay loam of the Lodo Series.

A summary of the properties of onsite soils is provided in Table 26.

(2) Expansive Earth Materials. Most of the surface soils as well as some bedrock constituents on the site have a high expansion potential, i.e., the tendency for changes in

---

<sup>1</sup>T. H. Nilsen, Preliminary Photointerpretation Map of Landslides and other Surficial Deposits of the Honker Bay 7-1/2 Minute Quadrangle, California, 1975 (USGS Open File Map).



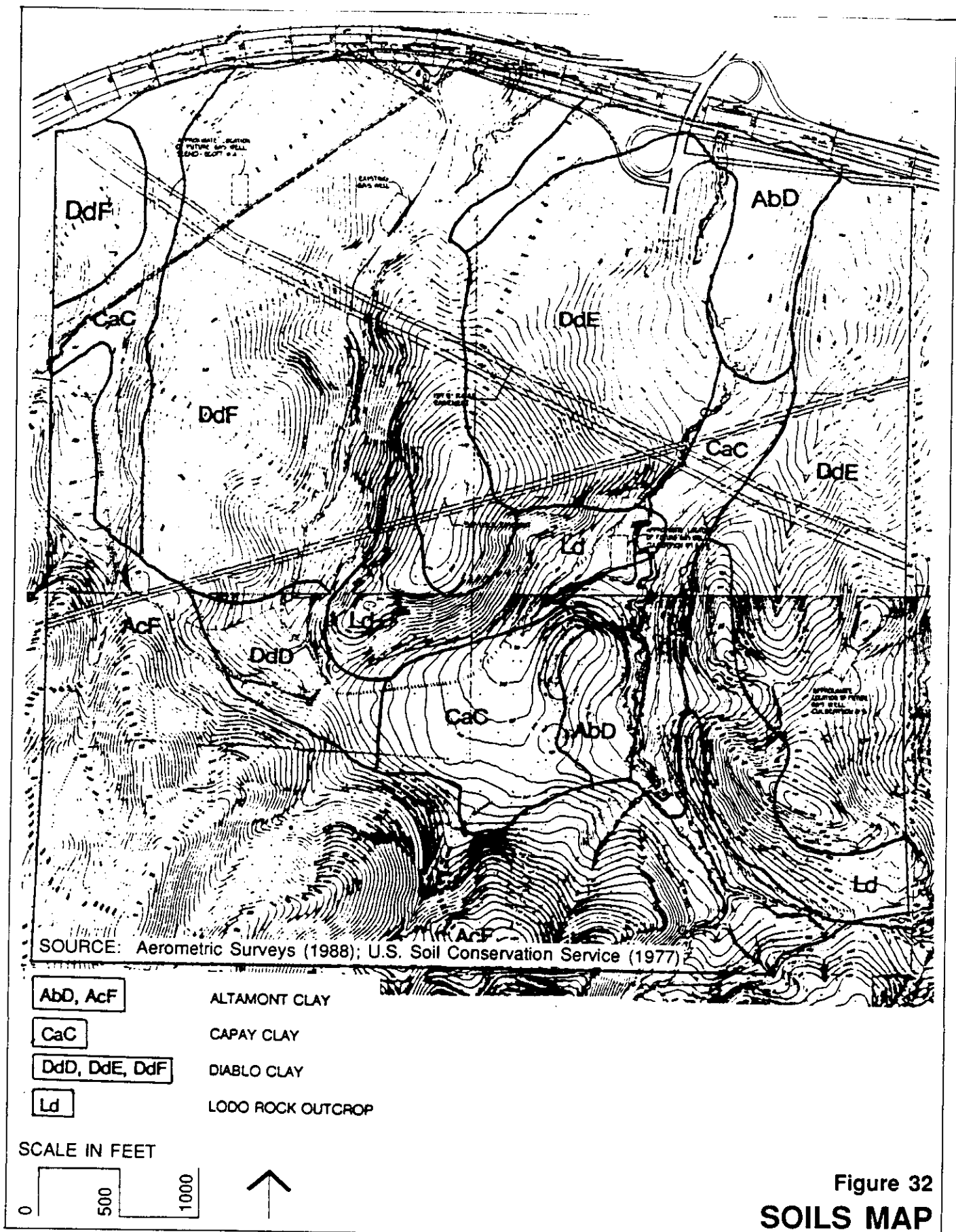


Figure 32  
**SOILS MAP**

San Marco Project City of Pittsburgh

volume due to seasonal changes in moisture content, commonly referred to as "shrink-swell," a condition which is found throughout the Bay Area. Expansive soil contributes to site soil creep tendencies and can cause significant damage to structures, including cracking of concrete foundations and slabs, and pavements, and damage to utility lines, unless specific precautions are undertaken.

(3) Erosion Potential. Soils on slopes exceeding 30 percent in steepness are particularly susceptible to erosion and sedimentation; i.e., the transport of mineral particles of soil and rock by the action of flowing water. The steeper soils on the site are susceptible to both sheet erosion and gullyng.

Stream flow in swales and gullies that cross the project site are seasonal (see section IV.E, Drainage and Water Quality). Base flows generally decrease following the rainy season. In the dry seasons, the groundwater table drops below the stream channel elevations. Consequently, most streams on and near the project site are intermittent and are usually dry during the late summer months.

e. Slope Stability

(1) Existing Landslides. The Southwest Hills area, including the project site, contains a combination of steep slopes and exhibits a history of landslide activity factors which create limitations for development. Studies by the USGS and by Engeo, Inc. identifying existing onsite landslides were considered in preparing this EIR. Figure 33, shows areas where numerous onsite landslide deposits and areas of potentially unstable colluvium have been identified in these previous geotechnical investigations.<sup>1</sup> Additional areas have been further identified by examination of stereopaired aerial photographs and through independent field mapping by the EIR geologists.<sup>2</sup>

Landslide deposits on the site are generally located at the heads and sides of drainage swales or gullies and on the fringe of the site's ridges and knolls. Most of the landslide deposits consist predominantly of displaced soil and some highly weathered bedrock. Some of the landslide areas represent rockfalls. Although the failure surfaces of most of the landslides are probably located at the soil-bedrock interface, some may extend to considerable depth. The landslides on the site generally appear to be at least ten years old.

---

<sup>1</sup>T.H. Nilsen, USGS, 1975; Engeo, Inc., 1991.

<sup>2</sup>Photographs taken by Pacific Aerial Surveys, May 4, 1957; May 27, 1976, and July 19, 1990.

Table 26

**SUMMARY OF ENGINEERING PROPERTIES OF ONSITE SURFICIAL SOILS**

| <u>Map<br/>Symbol</u> | <u>Soil<br/>Series<br/>Name</u> | <u>USDA<br/>Textural<br/>Classi-<br/>fication</u> | <u>US<br/>System<br/>Classi-<br/>fication</u> | <u>Slope<br/>(%)</u> | <u>Perme-<br/>ability</u> | <u>Shrink/<br/>Swell<br/>Potential</u> | <u>Erosion<br/>Hazard</u>   |
|-----------------------|---------------------------------|---------------------------------------------------|-----------------------------------------------|----------------------|---------------------------|----------------------------------------|-----------------------------|
| AbD, AcF              | Altamont<br>clay                | Clay                                              | CL                                            | 9 to 15              | Slow                      | High                                   | Slight to<br>moderate       |
| CaC                   | Capay<br>clay                   | Clay                                              | CL                                            | 2 to 9               | Slow                      | High                                   | Slight                      |
| DdD                   | Diablo<br>clay                  | Clay                                              | CL                                            | 9 to 15              | Slow                      | High                                   | Slight to<br>moderate       |
| DdE                   | Diablo<br>clay                  | Clay                                              | CL                                            | 15 to 30             | Slow                      | High                                   | Moderate                    |
| DdF                   | Diablo<br>clay                  | Clay                                              | CL                                            | 30 to 50             | Slow                      | High                                   | Moderate<br>to high         |
| Ld                    | Lodo<br>rock<br>outcrop         | Mixed<br>sandstone<br>and clay                    | CL                                            | 15 to 75             | Slow to<br>moderate       | Moderate                               | Moderate<br>to very<br>high |

SOURCE: Herzog Associates

The primary causes of these past onsite landslides have probably included some combination of slope steepness, adversely-oriented bedrock strata, soil and bedrock materials of relatively low shear strength, saturation of the soil and rock during periods of heavy rainfall, and erosional forces caused by running water undercutting gully slopes or washing away topsoil.

(2) Soil Creep and Debris Flow. In general, slopes steeper than approximately 50 percent are also subject to *soil creep*. Soil creep, a common phenomenon in the Bay Area, is defined as the slow, more or less continuous, downslope movement of soil and rock particles under gravitational stresses. Soil creep is usually accelerated by constructing fills on slopes, steepening slopes with cuts, heavy rainfall or irrigation, and surface drainage practices which introduce large amounts of water to the slope. Soil creep is usually more prominent on slopes mantled by clayey soils, particularly if they are expansive.



San Marco Project City of Pittsburgh

Most structures built on slopes in the Bay Area are subject to soil creep forces. Soil creep acts very slowly and usually becomes apparent after the passage of several years rather than within a few months or a few years. Soil creep is usually manifested by tilting fences, concrete slabs which settle downslope, warped floors, and cracks in foundations and slabs, which all indicate lateral movement in a downslope direction.

In addition to soil creep, slopes which are underlain by colluvial deposits and are steeper than about 20 percent are susceptible to the development of *debris flows*.<sup>1</sup> Debris flows are the relatively rapid downslope movement of mixed soil and water occurring when the liquid limit is approached for colluvial soils on slopes of 20 percent or more. This condition usually occurs during and shortly following torrential rainfalls. Because the movement of such debris flows is typically rapid, they pose a particular hazard to property and life.

f. Seismicity

(1) Onsite Fault Traces. In the aftermath of the February, 1971 San Fernando earthquake, the California State Legislature enacted a law that authorized the State Geologist and the State Division of Mines and Geology (DMG) to delineate *Special Studies Zones* along all faults that were considered active and sufficiently well defined. The subsequent DMG studies completed for the project vicinity indicated that no surface trace of a known active earthquake fault crosses the site, and therefore, the site is not located within a Special Studies Zone.<sup>2</sup> However, these studies did identify features, including inferred lineations, where faulting could occur at four distinct locations within the confines of the project site.<sup>3</sup> These inferred fault traces are shown on Figure 31.

Following onsite trenching investigations by geologists for the applicant in 1991, it was concluded that these features either represented inactive faults, or were not related to faulting.<sup>4</sup> It is likely that these DMG-identified features represent tectonic shears (tears in rock formation caused by earth movement) along fault systems located in the project region. These features could, however, respond sympathetically during displacement events on nearby active fault systems.

---

<sup>1</sup>Ellen, S.D., Mobilization of Debris Flows from Shallow Slides, 1987; Hollingsworth, R., Soil Slumps and Debris Flows: Prediction and Protection, 1981.

<sup>2</sup>State of California Division of Mines and Geology, Fault-Rupture Hazard Zones in California, 1990.

<sup>3</sup>Patten, P.R., San Pablo Formation North of Mount Diablo, California, 1947; Sims, 1973; and Dibblee, 1980.

<sup>4</sup>Engeo, 1991.

(2) Active Faults in the Region. Earthquakes along several nearby active faults would be expected to cause moderate to strong ground motion on the project site. These nearby active faults include the Clayton, Concord, Green Valley, Antioch, Greenville, Cordelia, Calaveras and Hayward faults, all of which could have a significant seismic impact on the site. The relative seismic parameters of these faults are listed in Table 27.

Earthquakes are measured by the amount of ground motion they cause, which is usually referred to as the "magnitude" of the earthquake. The most common earthquake magnitude scale is the Richter Scale. This scale is logarithmic; each successively higher magnitude reflects an increase of 31.5 times the amount of energy released by the earthquake. Another measure of earthquake intensity is ground acceleration, where 0.5 g represents one half the force of gravity. Table 27 lists the relative earthquake magnitude and ground acceleration which could be expected at the project site from seismic events anticipated on nearby "active" faults.

(3) Anticipated Groundshaking Hazards Intensity at the Project Site. Groundshaking intensity on the site from an earthquake on the nearby Concord Fault is expected to be "strong" while groundshaking from an earthquake on the Hayward Fault is expected to be "weak."<sup>1</sup> The maximum groundshaking intensity from a great earthquake on any nearby fault is estimated to be "very strong." Moderate to strong intensity shaking has already occurred in the vicinity of and on the site during historic earthquakes on the Concord, Green Valley and Antioch faults. The risk of groundshaking damage to modern wood frame dwellings in the region due to such groundshaking, in terms of percent of total building cost, has been estimated to be 0.3 to 1.00 percent.

The earthquake intensity which conventional buildings of ordinary construction in a particular region should be designed to withstand is generally considered to be an event which has a ten percent chance of exceedance in 50 years.<sup>2</sup> This corresponds to an annual risk of about 0.2 percent. Related probabilities for peak bedrock accelerations and associated magnitudes at the San Marco project site are shown in Table 28.<sup>3</sup> The design earthquake Richter magnitude for the project site would be about 6.2, which would produce a peak bedrock acceleration of approximately 0.492 g.

---

<sup>1</sup>Association of Bay Area Governments, Seismic Hazard Maps, 1988.

<sup>2</sup>American Technology Council, Tentative Provisions for the Seismic Resistant Design of Buildings, 1982.

<sup>3</sup>McGuire, R.K. EQRISK, Evaluation of Earthquake Risk to Site, (USGS Open File Report 76-67), 1976.

Table 27

SUMMARY OF SEISMIC PARAMETERS FOR NEARBY ACTIVE FAULTS

| <u>Earthquake Fault</u> | <u>Closest<br/>Distance from<br/>Site (Miles)</u> | <u>Maximum Credible<br/>E.Q. Magnitude<br/>(Richter)</u> | <u>Maximum<br/>Acceleration<br/>in Bedrock (g)</u> |
|-------------------------|---------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|
| Clayton                 | 1                                                 | 6.0                                                      | 0.42                                               |
| Concord                 | 4                                                 | 7.50                                                     | 0.31                                               |
| Green Valley            | 7                                                 | 7.00                                                     | 0.29                                               |
| Antioch                 | 8                                                 | 6.25                                                     | 0.19                                               |
| Greenville              | 12                                                | 6.50                                                     | 0.18                                               |
| Cordelia                | 14                                                | 6.75                                                     | 0.18                                               |
| Calaveras               | 15                                                | 7.25                                                     | 0.23                                               |
| Hayward                 | 19                                                | 7.25                                                     | 0.19                                               |

SOURCE: Herzog Associates

Table 28

SUMMARY OF EARTHQUAKE GROUNDSHAKING RISKS TO THE PROJECT SITE

| <u>Chance of Exceedance<br/>per Year (%)</u> | <u>Earthquake Magnitude<br/>(Richter)</u> | <u>Peak Bedrock<br/>Acceleration at Site (g)</u> |
|----------------------------------------------|-------------------------------------------|--------------------------------------------------|
| 5.00                                         | 5.33                                      | 0.210                                            |
| 2.00                                         | 5.60                                      | 0.276                                            |
| 1.40                                         | 5.70                                      | 0.304                                            |
| 1.00                                         | 5.79                                      | 0.333                                            |
| 0.70                                         | 5.89                                      | 0.367                                            |
| 0.50                                         | 5.98                                      | 0.402                                            |
| 0.20                                         | 6.18                                      | 0.492                                            |
| 0.10                                         | 6.33                                      | 0.571                                            |

SOURCE: Herzog Associates

Ground rupture could occur as a result of sympathetic displacement along one or more of the site's tectonic shears (inferred fault traces on Figure 31) due to an earthquake on the Clayton Fault. Other hazards that are likely to occur onsite due to regional earthquake activity include the appearance of fissures on steep ridge slopes, and liquefaction (i.e., sudden loss of shear strength caused by strong groundshaking) in areas underlain by saturated alluvial deposits.

The probability of each particular category of seismic hazard at the site is listed in Table 29.

g. Groundwater

Groundwater is generally located within 30 feet of the ground surface within low-lying terrain on the project site.<sup>1</sup> However, some areas of more shallow groundwater may be present in the stream cut valleys. In addition to containing permeable soil deposits, sandstone strata on the site can transmit significant amounts of groundwater through pores and interconnected joints and fractures within the bedrock.

h. Reactive Earth Materials

The bedrock and soils on the site may contain significant concentrations of gypsum, anhydrite, and salts which are commonly found in the Pittsburgh-Antioch-Brentwood area. Concentrations of gypsum and anhydrite can progressively deteriorate concrete. Concentrations of acidic salts can cause severe corrosion of unprotected steel.

i. Land Subsidence

Since the site is underlain by a natural gas field, the site could be subject to local land subsidence as a result of the extraction of gas, water, or petroleum products.

**2. IMPACTS**

a. Proposed Grading Plan

The preliminary project site plan shown on Figure 5 indicates that the proposed development will consist of 2,938 residential units, including detached single-family homes, apartments, and townhouses. The preliminary grading information on the project Tentative Map shows that mass grading is proposed for most of the 639-acre site in order to realize this development capacity and repair existing landslides. The proposed grading plan is

---

<sup>1</sup>Engeo, Inc., 1991.



Table 29

EARTHQUAKE HAZARDS--PROBABILITY OF OCCURRENCE ON PROJECT SITE

| <u>Earthquake Hazard</u>                          | <u>Probability of Occurrence</u> |
|---------------------------------------------------|----------------------------------|
| Groundshaking                                     | High                             |
| Ground Fissuring                                  | High                             |
| Seismically-Induced Landslides                    | Moderate to High                 |
| Liquefaction                                      | Moderate to High                 |
| Differential Compaction and/or Seismic Settlement | Low                              |
| Ground Displacement Along Active Fault            | None                             |

SOURCE: Herzog Associates

expected to involve cuts up to 120 feet deep and 180 feet high, and fills up to about 125 feet deep and 130 feet high. The maximum inclination of both cut-and-fill slopes is expected to be 3:1.

No terrace drains are proposed on either cut or fill slopes. Elevated, perimeter maintenance benches are planned at the bases of all cut, fill, and natural slopes adjoining subjacent improvements. A detention basin system designed to retard off-site runoff discharge is planned within a community park area on both sides of the central natural drainageway (see Figure 36 in section IV.E, Drainage and Water Quality).

Earthwork volumes for the proposed grading have not yet been computed. Minus these computations, the project applicant estimates that between 7.5 and nine million cubic yards of earth would be moved to accommodate the project.<sup>1</sup> Structural foundations are tentatively planned to consist of pier and grade beam systems or post-tensioned slabs on grade.

---

<sup>1</sup>Al Stanley, Seecon Corporation, personal communication, June 3, 1992.

The potential geotechnical impacts of this proposed grading plan are linked to a combination of factors, including site soil characteristics, slope stability conditions, settlement potentials, seismic hazards, groundwater conditions, reactive earth materials, and erosion and sedimentation potentials. These impact potentials are described below.

**b. Soils**

**(1) Expansive Earth Materials.** Soils and bedrock on the site contain moderate to high expansion potentials (see Table 26). Soils and in particular, fill soils, with moderate to high expansion potentials may shrink (i.e., settle) when the soil moisture content decreases, or swell (i.e., heave) when the soil moisture content increases. Structures constructed on expansive soil with improper subsurface drainage facilities, and in particular, structures constructed atop expansive fill soils which are not properly engineered and placed, may be damaged by shrink-swell earth movement. The proposed post-tensioned slab-on-grade residential foundation systems design which is proposed for this project may not adequately mitigate these potentially detrimental soil swelling and shrinking pressures. Significant damage to superstructural elements could occur without special design considerations. Roadway pavements, concrete slabs-on-grade, curbs and gutters, sidewalks, driveways and other flatwork could also suffer severe distress. If these various project elements are not properly engineered, substantial damage to project homes, roads, and service infrastructure could occur, representing a *significant adverse impact*.

**(2) Erosion.** The soils and bedrock on the site are sensitive to erosion and sediment transport because of their weak composition. In particular, the soils on the site's steeper slopes are susceptible to severe stream, gully, and sheet (surface) erosion when exposed to concentrated surface flow. Consequently, runoff from roof gutters and other paved surfaces may cause significant gullying and erosion impacts on side slopes. In particular, severe rainfalls or overwatering of landscaping could destabilize these project cut-and-fill areas proposed atop steep natural slopes.

Stream erosion would include the deepening of creek channels and the cutting of the outside banks of creeks. Gully erosion could result from deep cuts made in surface soil from storm surface runoff. Sheet erosion could involve the loss of soil over the entire site area due to grading exposure. Erosion, especially in creeks, can cause landslides and sedimentation build-up in creeks and other drainageways. These various stream, gully, and surface erosion potentials would represent *significant adverse impacts*.

The potential for surface erosion would be highest during project construction operations when bare, loose soil would be exposed to wind, rainfall and overland runoff. When vegetation is removed in hilly areas, and the soil mantle is disturbed, the extent of soil loss due to erosion typically increases.

The project grading plan includes extensive fill slopes, as well as road subgrades, building pads, and other graded surfaces that may be rough-graded in the first project construction phases, but would not be finish-graded and covered with pavement, structures, or landscaping until subsequent project phases. These grading activities could result in extensive exposed (unvegetated) surfaces and alterations of existing drainage patterns during the project construction period. This possible construction period combination of heavy rainfall, grading-related soil exposure, particularly on the steeper slopes, and other drainage changes represents a high potential for *significant adverse erosion impacts*. Until vegetation is reestablished, project exposed surfaces and drainage channels could be subject to filling, rutting, and general erosion, with subsequent siltation and sediment transport downstream.

Erosion could lead to transport and deposition of sediments within drainage ditches and pipes in excess of the system's carrying capacity which would increase the risk of flooding. These significant impacts could also persist after construction unless measures were implemented to stabilize the land surface, particularly on steep cut-and-fill slopes.

#### c. Slope Stability

As described in the setting section and as shown in Figure 33, the extensive steep hillsides on the project site are prone to slope stability problems such as landslide activity, slope creep, and debris flows.

(1) Landslides. The proposed project grading could reactivate existing landslides, if not properly repaired. The proposed grading could also instigate new landslides in areas of high cut slopes and deep fills, and in areas where cut slopes are proposed for areas of adversely-oriented bedding. Structures such as houses; appurtenant structures such as swimming pools, wood decks and patio slabs; retaining walls; roadways; and public infrastructure such as sewer, water, gas and electrical utilities, which are constructed on or near existing landslide deposits could be subject to substantial damage by future slope movement. Consequently, the potential for damage to the project attributable to landslide conditions on the site would represent a *significant adverse impact*.

(2) Soil Creep and Debris Flow. Site slopes steeper than 50 percent are subject to soil creep. All colluvial deposits on the project site on slopes greater than 20 percent constitute potential debris flow source areas. The proposed project grading could aggravate these conditions, resulting in potential substantial damage to project structures including houses, appurtenant structures (such as swimming pools, wood decks and patio slabs), retaining walls, roadways, and public infrastructure (such as sewer, water, gas and electric utilities). Consequently, the potential for damage to the project attributable to soil creep conditions would also represent a *significant adverse impact*.

(3) Cut and Fill Slopes. As a result of the proposed "mass grading" approach, the maximum inclination of both cut and fill slopes is expected to be no greater than 3 to 1, according to the project civil engineer. This slope inclination limitation would be sufficient to mitigate slope stability impacts associated with oversteepening. However, if this slope gradient were exceeded, rain and landscape overwatering could significantly destabilize cut-and-fill slopes, and cause either shallow or deep-seated slope movement in the roadway and residential areas, resulting in a *significant adverse impact*.

Also, if project surface or subsurface drainage improvements at cut and fill slopes were poorly maintained and not regularly cleaned of sediment, vegetation, and other debris, they could cease to function as designed. This condition could, in turn, reduce the long-term stability of graded slopes to a level that would be considered a *significant adverse impact*.

d. Differential Fill Settlement

Fill used to create building pads and streets on the site may settle if not constructed properly. The maximum depth of fill in some areas of the project may be as much as 125 feet. Even a properly compacted ravine fill of such depth could be subject to differential settlement. Under some individual residential structures and roadway segments, the fill thickness may vary substantially. Fills of varying thickness, material type, or compaction could settle unevenly, resulting in significant damage to project structures and infrastructure, including differential settlement and extensive cracking of residential foundations, and damage to roads and utility lines.

Settlement impacts could be further accentuated or exacerbated where fills are constructed over compressible deposits such as colluvium or landslide debris. Infrastructure improvements could also be damaged in those locations where there is an abrupt transition from fill to cut, as occurs when fill is placed in a steep-walled gully or on a steep hillside.

Such differential settlements and associated damage may not become severe until months or years after construction of the project has been completed. These long-term differential settlement potentials represent a *significant adverse impact*.

e. Seismic Hazards

(1) Groundshaking. As described in the Setting section (especially by Tables 27, 28, and 29), a high potential exists for the proposed project to experience the effects of moderate to strong seismic shaking during its lifetime due to a moderate to large magnitude earthquake on an active fault within the Bay Area. Groundshaking associated with an earthquake might cause structural damage to dwellings at the site and induce slope and stream bank failures, particularly in the winter when the site's soils are saturated. These seismic shaking damage potentials represent a *significant adverse impact*.

(2) Groundfailure. A moderate to high potential exists that a moderate to large earthquake with a nearby epicenter would occur on the nearby Concord Fault, Green Valley Fault, or Antioch Fault within the lifetime of the proposed development. During such an event, sympathetic reaction of the fault-related features on the project site could also occur. Such an event might also cause strong ground motions and significant ground failures such as landslides, fill settlement, ground fissures, or liquefaction, and associated substantial damage to project structures and infrastructure. The potential seismic hazards represent a *significant adverse impact*.

f. Groundwater

Project grading and landscape irrigation could result in impacts on existing groundwater conditions beneath the project site, which in turn could have significant geotechnical impacts. These impact relationships are described below and summarized in Table 30.

(1) Filling. Some areas of shallow groundwater may be present in the stream cut valleys traversing the site. Placement of fill over these areas could cause fill saturation and differential settlement of the fill surface, resulting in a *significant adverse impact*.

(2) Cutting. Cuts made during grading operations could expose water bearing units that could adversely affect the performance of the cut and/or adjacent slopes, resulting in a *significant adverse impact*.

(3) Grading. Changes in runoff patterns due to the proposed project grading plan could alter the groundwater flow regime in such a manner that reactivation of some landslides and/or movements of fills could occur on the property. Grading activities could also seal off some aquifers that presently drain to the surface and/or expose other aquifers that presently have no direct connection to the surface. These potential effects would represent a *significant adverse impact*.

(4) Storm Runoff and Landscape Irrigation. Prolonged and excessive landscaping irrigation and/or storm runoff could result in increased infiltration of surface water into the groundwater system, which could, in turn, cause the appearance of new springs, and increase the overall potential for unstable ground conditions. Seepage may appear on cut slopes where permeable beds are exposed. Persistent and uncontrolled seepage can cause slope deterioration and potential structural and infrastructural damage, as well as nuisances to subjacent land. These effects would represent a *significant adverse impact*.

g. Reactive Earth Materials

Concentrations of gypsum and anhydrite in project soil and rock materials could cause progressive deterioration of concrete, unless special precautionary measures are undertaken. Acidic salts found in project site soils and rock material could cause severe

Table 30  
**POTENTIAL GROUNDWATER IMPACTS**

---

| <u>The following<br/>project-related activity:</u> | <u>Could:</u>                                                                                                                                                                 | <u>With the following<br/>groundwater and<br/>geotechnical impacts:</u>                                                                                                                                      |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Filling                                            | <ul style="list-style-type: none"><li>▪ Increase groundwater levels</li></ul>                                                                                                 | <ul style="list-style-type: none"><li>▪ Fill saturation</li><li>▪ Differential saturation</li></ul>                                                                                                          |
| Cutting                                            | <ul style="list-style-type: none"><li>▪ Expose water bearing units</li><li>▪ Expose permeable beds</li></ul>                                                                  | <ul style="list-style-type: none"><li>▪ Slope instability</li><li>▪ Slope instability</li><li>▪ Seepage hazards<br/>(causing nuisances to<br/>subjacent land)</li></ul>                                      |
| Grading                                            | <ul style="list-style-type: none"><li>▪ Alter groundwater flows</li><li>▪ Seal aquifers from surface</li><li>▪ Expose aquifers to surface</li></ul>                           | <ul style="list-style-type: none"><li>▪ Reactivated landslides</li><li>▪ Fill movement</li></ul>                                                                                                             |
| Landscape Irrigation                               | <ul style="list-style-type: none"><li>▪ Increase groundwater levels<br/>(through increased runoff)</li><li>▪ Alter groundwater flows<br/>(through increased runoff)</li></ul> | <ul style="list-style-type: none"><li>▪ Ground instability</li><li>▪ Increased flow of springs</li><li>▪ Increased number of<br/>springs</li><li>▪ Reactivated landslides</li><li>▪ Fill movements</li></ul> |

---

SOURCE: Herzog Associates

corrosion of unprotected steel. These effects could result in potential *significant adverse impacts* to project foundations and infrastructure.

#### h. Soil Transport

The project grading information provided to date does not indicate whether a balanced onsite cut-and-fill program is anticipated, i.e., whether all onsite earth movement will be contained onsite. The proposed project grading plan may require the transport of large amounts of excess dirt on trucks to locations off of the site. During the project grading period, such hauling activity could create disruptive heavy truck traffic and air quality impacts relating to dust particles. These construction period impact issues are addressed in sections IV.C and IV.J of this EIR (Transportation and Air Quality).

### **3. MITIGATIONS**

This section describes mitigations warranted to adequately address the identified impacts of project geotechnical and grading factors.

#### a. Impacts of the Proposed Grading Plan

The impacts of proposed project grading plan manifest themselves as specific problems related to soil characteristics (i.e., expansive soils, erosion), slope stability (i.e., landslides, soil creep, debris flow), differential settlement, seismic hazards, and groundwater conditions. Mitigations are described below for each of these identified impact categories:

#### b. Soils

(1) Expansive Earth Materials. Implementation of the following measures would reduce identified project impacts related to expansive earth materials to less than significant levels.

*Grading/Foundation Design.* A standard soils test geotechnical investigation should be performed by a qualified geotechnical professional on each lot after subdivision grading is completed and prior to issuing building permits. The geotechnical professional should evaluate the expansion potential of native materials and fill on each lot and evaluate the subsurface conditions observed during grading. A report should be issued for each lot or group of lots with similar subsurface conditions along with recommendations for selective lot grading and foundation design and construction. The geotechnical professional should provide foundation design, soil preparation and selective grading recommendations which are appropriate for the on-site soil and geologic conditions observed after mass grading has been completed.

A geotechnical professional should prepare specific recommendations for the modification of the presently-proposed post-tensioned slab-on-grade foundation system to counteract soil swelling and shrinkage and for the treatment of expansive soils in all pavement and flatwork areas to ensure that the effects of soil expansion are minimized.

*(See note at end of this mitigation section regarding future additional determinations.)*

**Drainage Plan.** To avoid impacts of expansive earth materials due to improper surface drainage design, a registered civil engineer should design a surface drainage system for each lot. The drainage system should be compatible with the subdivision's drainage system. The drainage systems for each lot should include the following provisions:

- Portland cement concrete or asphalt concrete lined "V" ditches should be installed at the bases of all slopes greater than 15 feet high and adjacent to building pads. The ditches should drain to a suitable outlet.
- All building pads should be rough graded with a two percent slope toward the streets.
- The surface next to the house and associated structures should be graded with a slope of at least two percent away from the structure for a minimum distance of four feet.
- The lot should be drained with swales which slope two percent and discharge to a suitable outlet.
- All roof downspouts should be connected to a solid pipe collector system which discharges to a suitable outlet.
- The crawl space of each house or unit should be connected to a solid pipe collector system which discharges at a suitable outlet.
- Landscaping and walks should be installed such that the lot drainage system designed by the civil engineer is not disrupted. Water should not be allowed to pond on any lot.

Conditions, covenants and restrictions for the subdivision should include the lot drainage requirements listed above. Specific reference to drainage requirements should also be included in the deed for each lot in order to prevent homeowners from altering drainage on the lot.

The recommendations and plans related to drainage provided by the geotechnical professional and project civil engineer should be carried out completely and correctly by the developer's contractors. The geotechnical consultant and civil engineer should provide continuous inspection during construction in order to ensure that their recommendations and plans are properly implemented.



**(2) Erosion.** To reduce impacts related to erosion to less than significant levels, a project *Erosion Control Plan* should be prepared and implemented by the project civil engineer and a qualified geotechnical professional. This plan should include the following measures:

- Plans and recommendations should include construction of lined "V" ditches on all cut-and-fill slopes within the subdivision and the designation of all drainageways as public storm easements, not to be owned or maintained by any individual homeowner.
- Effective erosion control provisions, as detailed by the Association of Bay area Governments,<sup>1</sup> such as planting and hydroseeding, should be done to prevent surface (sheet) erosion.
- Best-management construction practices, as directed by the city, should be followed during grading operations to control wind and water erosion of excavated and exposed surfaces. After implementation of the *Erosion Control Plan*, on-going monitoring and maintenance should be completed, especially during rainy seasons.

**c. Slope Stability**

**(1) General.** In order to reduce potential impacts related to soil stability to less than significant levels, a qualified geotechnical professional should prepare a detailed map of unstable areas on the site, an analysis of each unstable area, and a detailed slope stabilization program.

**Mapping Program.** A detailed mapping program should be conducted by a qualified geotechnical professional to identify every instance of past landsliding, earthflows, slumps, debris flows, debris basins, and erosional gullies; and every occurrence of colluvial swales, soil creep, rock falls, and adversely-oriented bedding on the site. Unstable and potentially unstable slopes impacting the proposed grading plan should be evaluated for depth and character of unstable materials. Test borings and/or exploration pits should be completed as part of evaluation.

**Slope Stability Analysis.** As part of the requirement for issuance of the Tentative Map, a series of slope stability analyses for critical cut slopes, fill slopes, and natural slopes, should be conducted by a qualified geotechnical professional to determine their stability under long-term static and short-term seismic loads. The analyses should incorporate saturated, residual shear strength parameters obtained from laboratory tests conducted on appropriate samples of earth materials recovered from the test borings and or exploration pits completed per mitigation measure suggested above. The impacts of the unstable conditions should be evaluated with respect to the proposed grading plan as a basis for determining the design, method of construction, extent and schedule of all stabilization measures.

---

<sup>1</sup>ABAG, Manual Standards for Erosion and Sediment Control Measures, 1981.

***Detailed Slope Stabilization Plan.*** In response to the detailed mapping and analysis described above, a qualified geotechnical professional should prepare specific recommendations for stabilization of all unstable areas. The plan should include detailed recommendations for the setbacks of structures from the crest lines of creek banks, cut slopes, fill slopes and natural slopes.

The slope stabilization plan should also include the specific measures relating to grading listed below:

- A qualified geotechnical professional and the project civil engineer should be present to inspect all project grading.
- The geotechnical professional should provide detailed recommendations of the setback of structures from specific onsite crest lines of creek banks, cut slopes, fill slopes, and natural slopes.
- The project civil engineer should ensure that all recommendations of the geotechnical professional are reflected in the grading plan and implemented by the developer.
- Specific recommendations of the geotechnical professional on cut slopes, fill slopes for lot grading, public street construction, infrastructure construction, and slope stabilization should be implemented.
- A geotechnical professional should inspect all proposed cut-and-fill slopes to ensure that they would remain adequately stable and protected from significant erosion. Drainage benches lined with Portland cement concrete or asphalt concrete should be installed if necessary to achieve necessary stability.
- As needed, a qualified geotechnical professional should modify and implement stabilization plans during construction.
- All slope stabilization grading should be documented with as-built drawings and include as-built geologic map.

*(See note at end of this mitigation section regarding future additional determinations.)*

**(2) Landsliding.** The slope stabilization plan described above should pay particular attention to landslide areas. Based on the detailed mapping and stability analysis described above, the geotechnical professional should provide specific recommendations for stabilization of all landslides, potential landslides, and all off-site landslides that may impact on-site development. This work should include preparation of a detailed geologic map and performance of a subsurface investigation within each area with a high potential for future slope movement.

A detailed construction plan should be prepared to stabilize landslides, potential landslide areas (including debris flows and rock fall areas), and off-site landslides. This plan should

include detailed sections and plans showing limits of work and detailed grading specifications for performance of the stabilization work. Implementation of the plan should be completed before the sale of individual project lots.

*(See note at end of this mitigation section regarding future additional determinations.)*

(3) Soil Creep. Using the detailed mapping and stability analysis described above, the geotechnical professional should provide specific recommendations to reduce damage to structures and infrastructure caused by slope creep should be provided, including recommendations for setbacks from the slopes subject to slope creep.

d. Differential Fill Settlement

To reduce impacts related to the settlement of differential fill, the following measures should be implemented.

(1) Fill Settlement Analysis. As a condition of approval of the Tentative Map, a qualified geotechnical professional should be required to conduct a series of settlement analyses based on appropriate laboratory test data obtained as part of the design level geotechnical investigation. Analyses of fill settlement under self weight should be included and the analysis should be based on strain-related parameters only. Particular attention should be paid to those areas where fill thicknesses would change abruptly, and where any underlying compressible soils may be left in place. Both total and differential settlement magnitudes and predicted settlement rates should be calculated and the methods of analysis substantiated. In addition, the relative magnitudes of vertical and horizontal displacements should be evaluated for all critical cases.

*(See note at end of this mitigation section regarding future additional determinations.)*

(2) Fill Placement Requirement. All fill on subdivision lots, roadways and infrastructure should be placed in such a manner so as to minimize differential settlement. Where predicted differential settlements may be intolerable, compensations in lot grading and cambering (i.e., arching) of utility lines should be considered as a means of avoiding structural damage. Any existing fill on the site which was not properly placed or compacted should be removed and replaced with engineered fill. All fill placed on site should be engineered fill placed in accordance with the recommendations of a qualified geotechnical professional and should be subject to continuous inspection during grading operations.

(3) Subsurface Drainage. Subsurface drains should be placed under all proposed fills on-site. The base of the fills should be drained with either a series of trench drains forming a herringbone pattern or with a blanket drain which underlies the entire fill. The drainage systems should discharge into the storm drain system, or into natural drainageways, provided appropriate energy dissipation devices are provided at the discharge points.

(4) Settlement Monitoring. A fill settlement monitoring program should be designed and implemented for areas where fills of greater than 15 feet thick would be constructed. The program should measure fill settlements at various depths throughout the deep fills to provide a basis for determining the rate and magnitude of settlement prior to construction of residential and infrastructure improvements. A qualified geotechnical professional should provide the necessary information to design the fill monitoring program schedule and instrumentation package, should analyze the settlement readings, and should determine what additional mitigation, if any, would be required.

e. Seismic Hazards

The following measures should be implemented to reduce impacts related to seismic hazards to less than significant levels:

(1) Analysis and Mitigation of Seismicity Prone Areas. As a condition of approval of the Tentative Map, a qualified geotechnical professional should analyze the susceptibility of the site to earthquake-induced landsliding, fill settlement due to dynamic forces, development of ground fissures, and potential for liquefaction. This analysis would require drilling test borings and conducting appropriate laboratory tests in areas that could be so affected. Specifically, test borings and/or cone penetration tests should be completed where it is anticipated that fills would be constructed over areas of deep, saturated alluvium that is susceptible to liquefaction; and on any unstable slopes that may affect the proposed development. Recommendations should be made to offset those earthquake-prone hazards. These recommendations could include avoidance or engineering solutions.

*(See note at end of this mitigation section regarding future additional determinations.)*

(2) Fault Related Feature Analysis and Mitigation. In addition, a geotechnical professional should assess the possibility for sympathetic displacements along the fault-related features on the project. The evaluation should include radioisotopic dating of the surface soils or other chronostratigraphic techniques to evaluate the most recent episodes of movement along such features.

Based on the results of the fault-feature activity evaluation, a geotechnical professional should establish appropriate structural setbacks from zones of potential faulting on the site.

*(See note at end of this mitigation section regarding future additional determinations.)*

(3) Structure/Infrastructure Design. All project buildings, underground utilities and other improvements should be designed and constructed in accordance with all public agency requirements and City of Pittsburg building codes, particularly those sections of the codes regarding earthquake resistant design. The geotechnical report described above which

would contain foundation recommendations for each lot should include earthquake design criteria in response to the site's soil profile coefficient.

**f. Groundwater**

The following measures should be implemented to reduce those geotechnical impacts relating to groundwater to less than significant levels:

**(1) Subsurface Drainage.** A qualified geotechnical professional should provide recommendations for controlling drainage from springs or streams. In particular, subsurface drainage should be placed under all proposed fills, especially for all springs or streams to be covered by fill.

The bases of the fills should be drained with either a series of trench drains forming a herringbone pattern or with a blanket drain which underlies the entire fill. These drainage systems should discharge into the project storm drainage system.

Trench drains of five to ten feet deep should be placed across all onsite valleys in which fill is proposed which extend off-site. Each trench drain should be placed perpendicular to the centerline of the valley and shall be located near the project boundary. These trench drains would reduce the amount of groundwater flow onto adjacent properties.

A geotechnical professional should evaluate the possibility for groundwater infiltration through permeable beds dipping into utility trenches from higher elevations. In such cases, the geotechnical professional should propose specific subdrainage measures designed to prevent the accumulation of groundwater and consequent buildup of hydrostatic pressures in the trenches.

*(See note at end of this mitigation section regarding future additional determinations.)*

**(2) Surface Drainage.** The surface drainage system for the project should be evaluated by a qualified geotechnical professional in order to determine the effects of the surface drainage system on the groundwater regime at the site.

*(See note at end of this mitigation section regarding future additional determinations.)*

**(3) Irrigation.** All individual homeowners should be provided educational material cautioning against over-irrigating landscaping areas which result in groundwater seepage problems.

g. Soil Transport

The project grading plan should be revised to the extent possible to balance proposed onsite cutting and filling activities to minimize the amount of off-site hauling of soils made necessary by the project.

i. General Mitigation Measures

The following general mitigation measures are not in response to a specific impact but would facilitate effective mitigation of all identified impacts:

(1) Mapping of Actual Geologic Features. Prepare during grading a detailed construction phase geologic map of the project site to verify that geologic materials are as expected, and that any potentially unstable zones within cut areas have been adequately identified and engineered for in the final grading specifications. If unexpected conditions are encountered, make additional engineering and construction recommendations subject to approval by the city prior to completion of the grading phase. This mitigation should be completed by the project engineering geologist and geotechnical engineer.

(2) Grading Progress and Completion Reporting. Require the completion of progress reports and a completion report, with a geologic mapping of all cut-and-fill pads and slopes within the graded area, as a condition of the project grading permit. Show the installed location of subdrains and clean-outs on the approved grading map.

(3) Ongoing Maintenance and Repair Responsibilities. Provide for maintenance of graded areas and geotechnical related mitigation elements of the project. Many of the mitigations recommended in this section will not be effective unless certain ongoing maintenance procedures are ensured. All slopes, subdrains and other drainage facilities should be maintained by a project-specific maintenance assessment district, according to a maintenance plan and schedule prepared by a registered civil engineer and approved by the city. This plan should be part of the CC&Rs (conditions, covenants, and restrictions) for the subdivision. The purpose of such an assessment district would be to create a private funding mechanism, established by the applicant, to ensure that project residents are financially responsible for: (a) preventative maintenance of drainage systems and cut-and-fill slopes; (b) further geotechnical studies of geotechnical problems if and when they develop; and (c) the cost of repair to common project facilities which might be damaged in the future by landslides, differential settlement, fault rupture, etc. There should be no risk of these costs falling upon the city. The funding mechanism should distinguish between soil movement erosion damage to a single lot, which should be the property owner's individual responsibility, and damage to common roads, utilities, major drainageways, or damage to more than one lot, which should be the joint responsibility of all affected landowners.

A possible funding mechanism would be the creation of a Geologic Hazard Abatement District (GHAD). A GHAD can be used as a means of providing and paying for an ongoing monitoring program to detect and control geologic hazards.<sup>1</sup> There should be a requirement that the existing function of the GHAD be disclosed to all potential or actual purchasers of project home sites or homes. In the event of serious geologic problems, subzones of an amended GHAD could then be established to allocate equitably the costs of abatement measures between affected landowners.

***Note:*** *With regard to any mitigation measure that has been described in the EIR that requires future additional determinations, CEQA guidelines and recent court decisions indicate that mitigations must operate in some way to alter the significant impacts of the project. The EIR mitigation measures must be capable of ensuring that the project would be implemented in a manner that alters any potential geotechnical impacts of the project. There is substantial, reasonable historic information to support the conclusion that the specific subsequent geotechnical/geologic investigations, monitorings, and specification formulations identified in this EIR would adequately mitigate related impacts to insignificant levels. Such geotechnical/geologic investigations and specifications are routinely required by the city at phases of development review that follow EIR certification; i.e., as conditions of Tentative Map or Final Map approval, as grading permit requirements, and/or as building permit requirements. A significant record exists demonstrating the effectiveness of such post-EIR engineering investigation requirements in mitigating the related geotechnical impacts of concern identified in this EIR. Under city Tentative Map, grading permit and building permit provisions, requirements, and regulations, the project cannot be approved without reasonable indication of project compliance with these geotechnical engineering requirements. These requirements and related city inspection and verification procedures prior to project occupancy provide reasonable assurance that the project would incorporate the design and engineering refinements necessary to reduce the degree of impact to insignificant levels by either avoiding associated geotechnical impact areas altogether (i.e., basic project design changes), or by rectifying the impact through conventional engineering and construction procedures (landslide repair, engineered slope retainment, road and building foundation design particulars, etc.) identified through the investigation and monitoring process.*

---

<sup>1</sup>Such a GHAD was established in 1985 for the Canyon Lakes Project in San Ramon (Contra Costa County).





---

## **E. DRAINAGE AND WATER QUALITY**

---

This section describes local drainage and water quality conditions relevant to the project, identifies the potential project impacts on these conditions, and recommends measures warranted to mitigate any identified significant adverse drainage or water quality impacts.

### **1. SETTING**

#### **a. Topography and Climate**

The 639-acre project site is located in the eastern section of the Coast Range, immediately south of Suisun Bay. Elevations on the site range from approximately 150 to 867 feet relative to the National Geodetic Vertical Datum (NGVD).

The climate of the region is characterized as Mediterranean, with wet winters and dry summers. The region's "rainy" season extends between the winter months of November and April, with relatively dry conditions for the remainder of the year. The average annual rainfall at the project site and surrounding watershed ranges from 16 to 17 inches. Temperatures may range from below freezing during winter evenings to above 100 degrees Fahrenheit during the summer months.

#### **b. Surface Drainage Characteristics**

Existing drainage characteristics on the project site are mapped on Figure 34. The project site is in the Shore Acres Creek watershed is located within Contra Costa County Flood Control and Water Conservation District's (CCCFCWCD) Drainage Area 48B. The site includes four principal drainages. Drainage from each of these subareas flows northerly into small hillside ephemeral streams to three principal onsite drainage channels--Shore Acres Creek and two small tributaries of Shore Acres Creek (see photo on page IV.A--2). These two channels discharge into Suisun Bay. The two tributaries are ephemeral (seasonal). Shore Acres Creek is perennial (flows year-round) through most of the project site. The Shore Acres Creek watershed has a drainage area of 1,700 acres or 2.7 square miles; the two tributaries have sub-watersheds of 185 and 220 acres.

Current drainage facilities serving the site are limited to two stock ponds/reservoirs (one on Shore Acres Creek and one on one of its tributaries), and three culverts underneath Highway 4, including one at the base of Shore Acres Creek and other drainage channels.

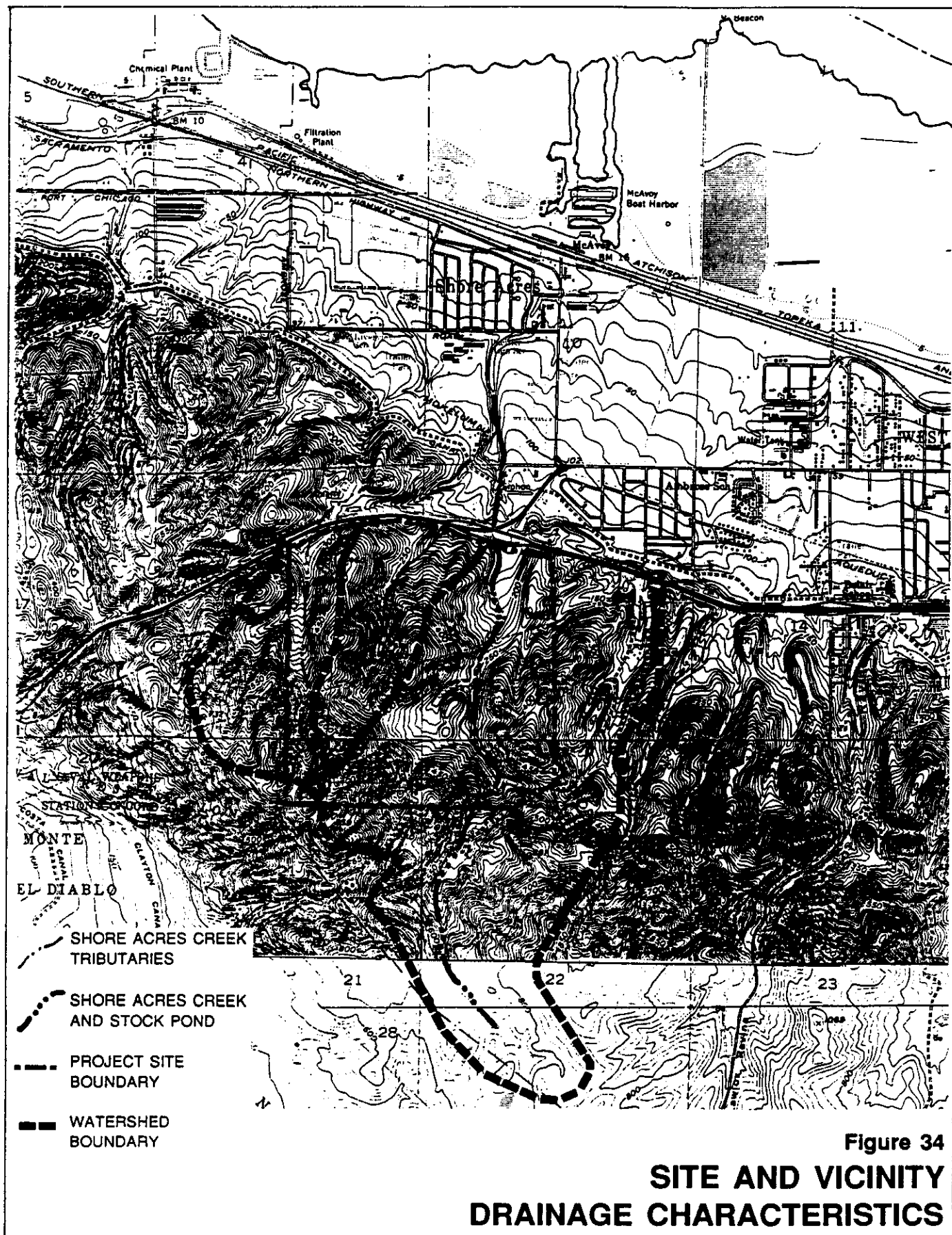


Figure 34  
**SITE AND VICINITY  
 DRAINAGE CHARACTERISTICS**

Shore Acres Creek and the two tributaries converge immediately above (south) of Riverside Drive, approximately one-half mile below the site. The main creek then flows in a open channel through the unincorporated West Pittsburg residential area, with culverts under Riverside Drive, Pacifica Avenue, Port Chicago Highway, the Atchison Topeka and Santa Fe Railroad tracks, and finally discharges into a levied channel which enters Suisun Bay 2.4 miles north of the project site.

c. Flooding

No portion of the site is located within a Federal Emergency Management Agency (FEMA) designated flood hazard zone.<sup>1</sup> Localized flooding does occur downstream from the site near the intersection of Pacifica Avenue and Port Chicago Highway. These FEMA-designated downstream flooding areas are shown on Figure 35.

Current county-mandated standards for drainage facilities and culverts in a watershed which is less than four square miles in area, or 2,560 acres, require design for the 25-year storm event. Since the Shore Acres Creek watershed is approximately 1,700 acres in area, culverts and channel design downstream of the project site have been designed for the 25-year storm event, and can therefore be expected to experience some overspilling and associated flooding during storm events occurring at larger recurrence intervals, such as 50-, 100-, and 500-year storms. Potential downstream flooding areas associated with 100-year and 500-year storms are shown on Figure 35.

d. Soils and Erosion

The soils on the project site include the Altamont, Antioch, Capay, Diablo, and Lodo series.<sup>2</sup> These five soil types are hydrologically characterized by moderate to high runoff potential because they have very low infiltration rates when thoroughly wetted. High runoff rates occur when the soils become saturated and the clays in them swell, thereby greatly reducing rainfall infiltration. These five soil types are also highly susceptible to erosion if they are disturbed and/or exposed to rainfall and runoff.

Due to the steep terrain that characterizes the project site, soil erosion is a common and constant threat. Many of the soils on the site are characterized by moderate to high erosion hazards. Erosion produces sediment in runoff.

---

<sup>1</sup>Federal Emergency Management Agency (FEMA) Flood Insurance studies for Contra Costa County, California (Unincorporated Areas), July 16, 1987. Panel #060025-0115.

<sup>2</sup>Soil Conservation Service, 1977. Soils of Contra Costa County.

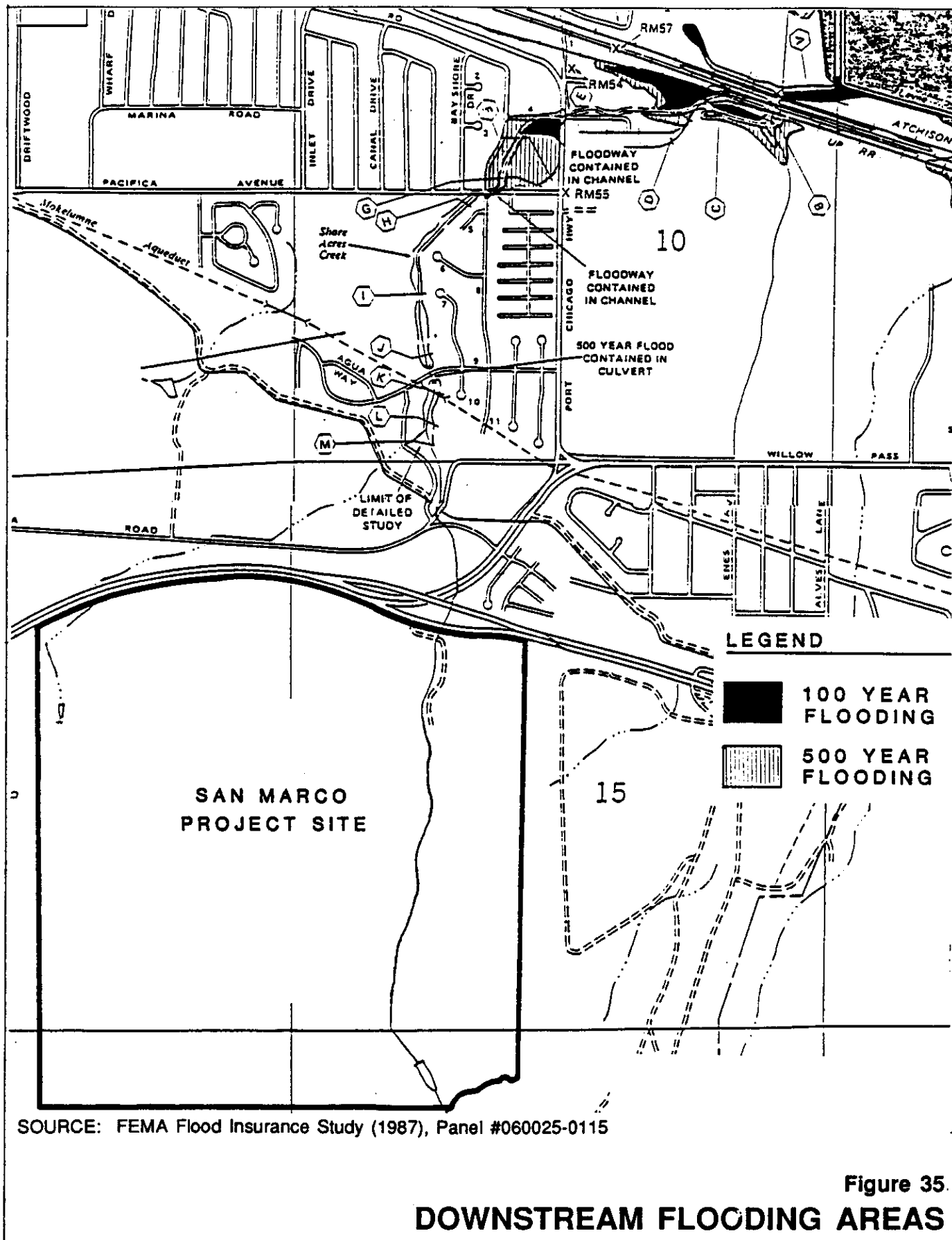


Figure 35.  
**DOWNSTREAM FLOODING AREAS**

San Marco Project City of Pittsburgh

This sediment can adversely affect water quality in receiving waters and can contribute to sedimentation and resulting obstruction of drainage facilities downstream.

e. Water Quality

No water quality data for storm water runoff from the project site or vicinity is available. However, given the current predominantly range land character of the site and surrounding properties, the quality of storm water runoff would be expected to be typical of similar grazed and open space watersheds. The quality of surface water draining from the site and surrounding areas is affected primarily by non-point source pollutants. Stormwater pollutants from the project site are likely to be dominated by sediment from existing erosion as a result of grazing.

f. Ground Water Resources

The proposed project is located within the Pittsburg Plain Ground Water Basin of the San Francisco Bay Hydrologic Study Area. Ground water underlying the site generally flows north toward the *Pittsburg Plain* lowland. The depth of ground water on the plain ranges from 25 to 50 feet below ground surface, depending on the location and time of year. Recharge for this aquifer comes primarily from intermittent streams crossing permeable sediments in the hillsides to the south of the site. The ground water quality in the plain is generally very poor. Ground water beneath the Pittsburg Plain is also considered unsuitable for some industrial uses due to the effects of saltwater intrusion and the impacts of industrial activities. The City of Pittsburg has no active public water supply wells in the Pittsburg Plain aquifer and derives its water entirely from the Contra Costa Canal.

Though no site specific ground water studies have been conducted, the adjacent Seecon property, site of the proposed Baypointe Landfill site, has been extensively investigated. This adjacent property to the south is relatively similar geologically to the project site, and although there are various site-specific differences, ground water trends on the two sites are generally consistent.

Two types of ground water are present on the site: shallow and deep. Shallow ground water is likely to be found within 5 to 10 feet of the surface. This type of groundwater varies seasonally and is probably discontinuous throughout the site. Deeper ground water may be found at depths of 40 to 80 feet below the ground surface. Deep groundwater wells in this area commonly produce from 10 to 60 gallons per minute (gpm).

The quality of the groundwater in the site vicinity varies. Typically, the shallow ground water is not of drinking-water quality and is somewhat saline, containing elevated concentrations of calcium, sodium, and iron. The deeper ground water is generally of good quality and contains relatively low concentrations of metal ions and dissolved solids.

## **2. IMPACTS**

Project site runoff for the post-development condition would be primarily affected by two factors: the addition of impervious surfaces, and the timing of runoff. Impervious surfaces such as roads, driveways and roofs would increase the volume of runoff leaving the site by preventing infiltration. Storm drains and gutters increase the speed and timing of the runoff by preventing infiltration and by providing efficient, low friction drainage pathways.

### **a. Proposed Project Drainage System Design**

The project would involve the construction of approximately 2,938 residential units on the 639-acre site (approximately 4.6 units per gross acre). In order to achieve this housing density, the project grading plan calls for substantial alteration the existing topography. All of the natural drainages on the project site would be filled and leveled or benched. Drainage from the Shore Acres Creek and its onsite tributaries would be intercepted by either hillside ditches or storm drain inlets. These structures would then collect and convey runoff through an underground storm drainage network. Existing natural channels traversing the project site would be intercepted by storm drain inlets near the project site boundaries and incorporated into the new project drainage system.

All storm water flowing onto or originating on the project site would be collected and conveyed through storm drain lines to a series of detention basins. As currently proposed there would be three permanent storm water detention areas and one temporary area. These basins would be linked in a parallel configuration, as diagrammed on Figure 36.

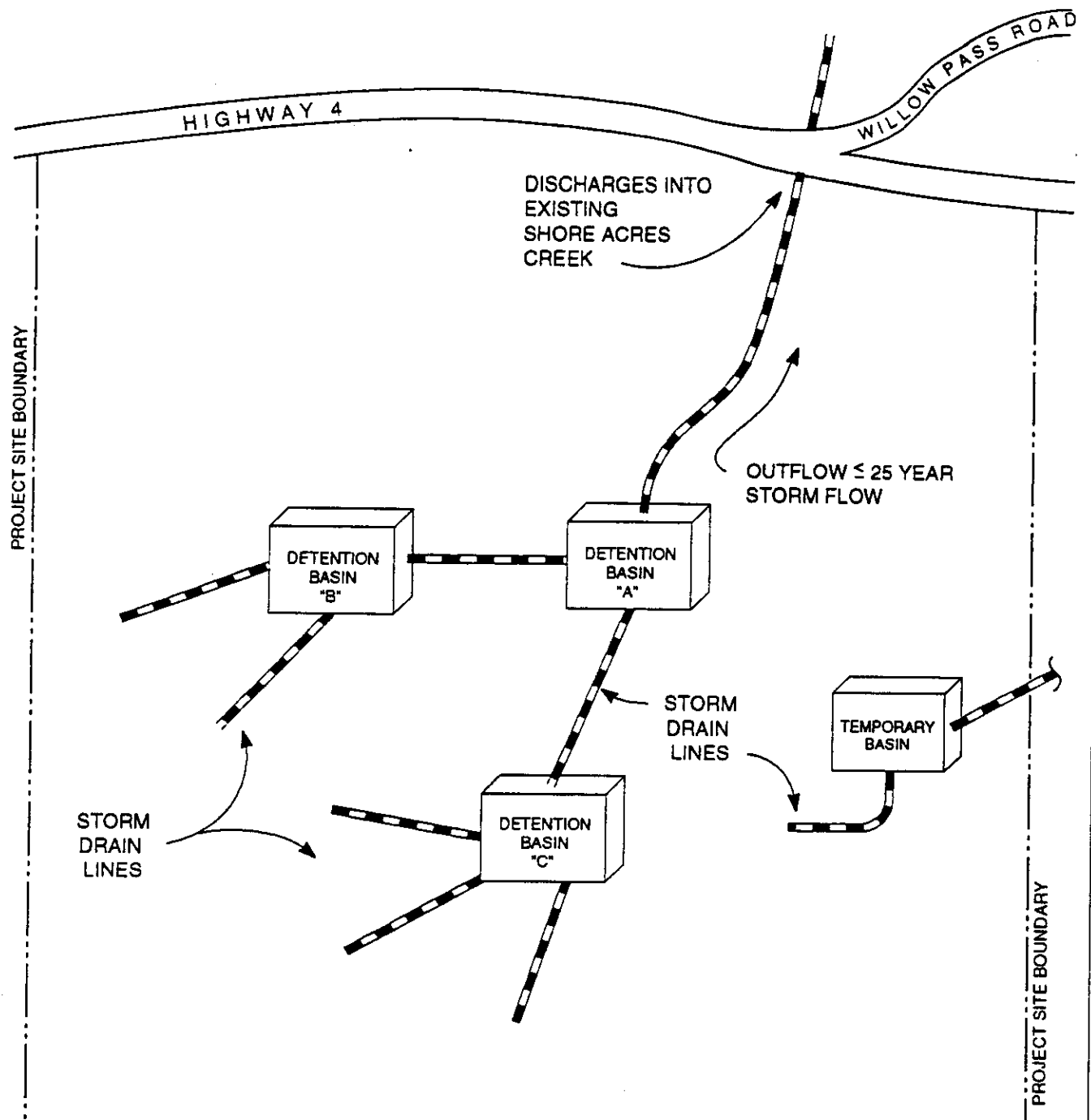
A detention basin is a stormwater storage facility, primarily used for flood control, that is normally dry but is designed to hold surface water temporally during and immediately after a major runoff event. The basin is typically designed to slowly release the stored stormwater at a pre-designed rate that does not exceed the capacity of the downstream drainage facilities. The project site detention facilities would eventually discharge into the existing Shore Acres Creek system below the project site.

### **b. Significance Criteria**

According to CEQA Guidelines, implementation of the proposed project would have significant adverse impacts if the project would result in substantial degradation of surface or groundwater resources compared to prevailing standards, or if it would cause or increase the potential for substantial flooding, erosion, and siltation.<sup>1</sup>

---

<sup>1</sup>CEQA Guidelines, June 1986, Appendix G.



SOURCE: Adapted by Herzog Associates from Vesting Tentative Map and Preliminary Grading Plan--San Marco Subdivision. Stedman and Associates, May 1990

**Figure 36**  
**SCHEMATIC DETENTION BASIN LAYOUT**

San Marco Project City of Pittsburgh

The hydrologic impacts of the project can be divided into four categories: peak runoff; runoff volume; erosion; and water quality. Short-term impacts in these categories would potentially result from construction period activities; long-term impacts would potentially result from the alteration of drainage in the area.

a. Peak Runoff

The proposed project would modify the runoff characteristics of the site through the creation of impervious surfaces, the installation of a storm drainage system, and the redirecting of runoff into one concentrated point. These changes would cause an increase in the peak runoff (the maximum runoff during a single storm event) from the site.

The CCCFCWCD has recently prepared a study of drainage capacity for the project vicinity for the Highway 4 Widening project.<sup>1</sup> This study included detention basin designs to mitigate increased runoff from the expected development of the San Marco project site. However, the proposed housing density assumed by the Flood Control District for their analysis was less than what has been proposed by the applicant. Because of this inconsistency, the applicant's engineers in conjunction with the CCCFCWCD have developed new sizing requirements for the project onsite detention facilities in order to accommodate runoff from the increased housing density. The CCCFCWCD has stipulated that the total flow leaving the project site can not exceed 199 cfs, and has supplied restrictions and design criteria for the detention basins. The District stipulations require that: (1) the basins would have to be designed to contain runoff from the 100-year storm with two feet of freeboard, and (2) the design outflow into the existing downstream system would be for the 25 year storm.<sup>2</sup>

Based on this CCCFCWCD criteria, the applicant's engineers have designed a series of detention basins to meet the specific requirements of the CCCFCWCD. On February 7, 1992 an agreement between the District and the applicant was filed with the Superior Court of the State of California in and for Contra Costa County pertaining to the drainage system for the project.<sup>3</sup> This agreement states that the CCCFCWCD has "determined that the Site Plan and Development Plan, as currently designed, are compatible with the design hydrograph for the watershed above" the final detention basin. In effect, the CCCFCWCD has approved the applicant-proposed detention basin design and design flow requirements from the development, finding that they meet the requirements of current adopted drainage

---

<sup>1</sup>CCCFCWCD, Highway 4 Widening Project Drainage Study, May 1990.

<sup>2</sup>Stedman and Associates, "Basin "A" Capacity Study, San Marco Subdivision 7362", August 1991, Job Number 8088-87-02.

<sup>3</sup>Stipulation for Judgment and Final Order--Action in Eminent Domain, Superior Court of the State of California (91-00439).



plan for the area. Also, Contra Costa County has agreed to share in the cost of building these detention facilities.

The proposed drainage facilities described above would ensure that the project would have a less than significant impact on peak discharge leaving the project site and would likely reduce the potential for downstream flooding compared to existing conditions. The reduction in flooding potential would occur because the project's detention basins would collect and store runoff from the majority of the watershed, such that during the 100-year storm event, the outflow from the watershed would be reduced to a discharge equivalent to that of the 25-year storm. The channel downstream is adequately sized to convey the 25-year storm discharge; therefore, peak discharge has been adequately addressed by the project drainage design and does not represent a significant impact.

b. Runoff Volume

The increase in runoff which would be created by the proposed project would translate into a larger total volume of runoff delivered to the downstream drainage facilities. This effect would be primarily due to the reductions in infiltration of rainfall into the soil caused by the installation of impervious surfaces. The detention basins described above would reduce the peak discharge, but the fact still remains that the total volume of runoff water would increase. This increase would occur over the duration of peak flows, but would be unlikely to significantly impact downstream areas because: (1) the detention basins would reduce the magnitude peak discharge; and (2) the Shore Acres Creek channel downstream of the project site has adequate capacity to accept and convey the peak flow, regardless of the duration and total volume of runoff.

c. Erosion

The construction of the proposed project poses a significant threat of soil erosion from soil disturbance because: (1) the project would be located on relatively steep hill slopes, (2) the soils are moderately to highly susceptible to erosion, and (3) large amounts of grading would be required by project construction. Alterations in drainage patterns could compound and increase erosion on and downstream of the site by subjecting unprotected areas to the erosional forces of runoff. This effect would constitute *a significant adverse impact*.

Soil erosion can result in several types of related significant impacts. Eroded soil contains nitrogen, phosphorus, and other nutrients. When these nutrients are carried into water bodies, they can trigger algal blooms that reduce water clarity, deplete oxygen, and create odors. Excessive deposition of sediments in streams may blanket fauna and clog streams. The increased turbidity from erosion may also reduce the photosynthesis process that produces food supply and natural aquatic habitats.

Deposited sediment can also cause physical blockage of storm drains and catch basins, possibly intensifying local maintenance needs and flooding conditions. These erosion and sediment-related impacts could result from the project, particularly in the period during project construction prior to landscaping and paving of possible sediment source areas.

d. Water Quality

Water quality degradation is an increasing problem for many streams and rivers in the Bay region resulting from the cumulative impact of numerous non-point sources in watersheds. Non-point source pollution includes materials and chemicals which are washed into the storm drain system from a variety of sources. Unlike water pollutants that come from a single point source, such as factories or sewage treatment plants, non-point source pollutants are washed by rainwater and other means from streets, neighborhoods, construction sites, agricultural areas, and parking lots. In the project vicinity, these pollutants flow directly into surface water ways such as creeks and eventually, into the Suisun Bay. Because of the relatively large size and density of the project it is likely that large increases in the amount of non-point source pollutants would occur. However, the exact amount of increase is difficult to predict and is largely dependent on activities occurring on the project site.

The conversion of the site from natural, grassed hillside to suburban-type development would add cumulatively to non-point source pollutant impacts on receiving waters, as well as change the type of pollutants from range land associated suspended sediments to suburban development associated oils, grease, nutrients, heavy metals, and other residential non-point pollutants. These pollutants would enter Shore Acres Creek, and ultimately would flow into Suisun Bay. This effect would constitute a potentially *significant adverse impact*.

The Environmental Protection Agency (EPA) recently established permit application requirements for storm water discharges as part of the National Pollutant Discharge Elimination System (NPDES). Locally, the San Francisco Bay Regional Water Quality Control Board is the responsible permitting agency and is developing programs to reduce this water quality threat at the regional level.

e. Groundwater Impacts

The placement of impervious surfaces and storm drain lines associated with the project would impact groundwater resources in the Pittsburg Plain aquifer. Because development would reduce the amount of rainfall infiltration into the ground in the recharge area of the aquifer, the amount of groundwater in the aquifer would be reduced. However, this impact would not be significant because the water quality of the Pittsburg Plain aquifer is considered poor, and it is not suitable as a municipal water supply or extensively used for industrial or other critical water supply purposes.

### 3. MITIGATION MEASURES

Implementation of the following mitigation measures would reduce identified drainage and water quality-related impacts due to the project to less than significant levels:

#### a. Peak Runoff and Volume

The project-related increases in peak runoff and volume would be adequately mitigated by the creation of on-site detention basins (approved by the CCCFCWCD) as described in the impact section. The CCCFCWCD has approved the design of the detention basins as described in the impact section. Therefore, it appears that this impact would be mitigated to less than significant levels by virtue of the proposed project design. No additional mitigation measures would be necessary.

City staff has indicated that prior to Final Map approval, a hydrology report describing this system must be submitted to all affected agencies. The analysis must be presented with a complete set of hydraulic calculations and determination of peak stormwater discharge beneath the freeway. The analysis must show the capacity of the proposed retention basins and the recommendations of the CCCFCWCD.<sup>1</sup>

#### b. Erosion Impacts

Significant erosion and sedimentation impacts from the project site are expected to be confined to the construction phase of the project. Construction-related erosion and sedimentation may be mitigated by the implementation of the following measures:

(1) Erosion Control. The project grading plan should include an approved drainage and erosion control plan to minimize the impacts from erosion and sedimentation during grading. This drainage and erosion control plan should conform to all standards adopted by Contra Costa County and those measures outlined in section IV.D.3 of this SEIR (Soils and Geology). The plan should include such erosion control procedures as:

- restricting grading to the dry season;
- protecting all finished graded slopes from erosion using such techniques as hillslope benching, erosion control matting, and hydroseeding;
- protecting downstream storm drainage inlets from sedimentation;
- use of silt fencing to retain sediment on the project site; and

---

<sup>1</sup>May 6, 1992 memorandum from Alfredo Hurtado, Assistant Civil Engineer to Nasser Shirazi, Assistant City Engineer, City of Pittsburg.

- any other suitable measures outlined in the Association of Bay Area Governments' (ABAG) Manual of Standards or Contra Costa County regulations.

(2) Drainage System Inspection. After construction is completed, all drainage culverts should be inspected for accumulated sediment. If sediment accumulation has occurred, these drainage structures should be cleared of debris and sediment.

c. Water Quality Impacts

To mitigate potential water quality impacts to less than significant levels, the project applicant should apply for and obtain the necessary NPDES stormwater discharge permit (which applies to the grading of five or more acres of land) from the California Water Quality Control Board (RWQCB). This RWQCB permit requirement is relatively new. It is expected that the program for administering such permits will begin in October 1992.

Though a specific regulatory program has not been instituted, developments of this size will be required to address non-point source pollutants from sheet runoff, not just construction-related impacts.<sup>1</sup> The Regional Board is currently developing guidelines identifying Best Management Practices (BMPs) for reducing non-point source pollutants. These practices vary, but generally include increased street cleaning, oil and grease separators for large parking areas, infiltration areas, and trash racks. Though these procedures and facilities are not currently required, they are expected to be required in the near future. If not incorporated into the drainage system design for the project, future regulations would possibly mandate costly retro-fitting of the storm drain system. The applicant should either:

- (1) incorporate some of these facilities into the subdivision storm drainage design,
  - (2) design the retention and other drainage facilities in a way which will easily facilitate the future installation of non-point source pollutant control devices, and/or
  - (3) set aside funds to comply with future regulatory requirements.
- r The RWQCB must also certify any Section 404 permit issued by the Army Corps of  
r Engineers. This certification should be based on a RWQCB determination that the Section  
r 404 permitted construction activity would comply with RWQCB water quality standards.

---

<sup>1</sup>Personal communication, Donald Frietas, Contra Costa County, NPDES Coordinator.

---

## F. VISUAL FACTORS

---

The following section describes the local visual setting, project impacts on that setting, and mitigation measures warranted to reduce identified significant adverse visual impacts. Additional discussion of the proposed project impacts and their relationship to city visual and aesthetic policies (community image, neighborhood quality, ridgelines, creeks, etc.) is included in chapter V of this EIR.

### 1. EXISTING SETTING

#### a. Visual Character of the Project Site and Vicinity

(1) The Project Site. The project site is located on the north-facing slopes of the Southwest Hills. The visual character of the site is influenced primarily by its rolling hillside topography and its smooth and uniform grassland texture (see Figure 3 on page 56 and the photographs on page 82 of this EIR). Other principal visual elements include the various electrical transmission lines, particularly the 230 and 115 kV PG&E lines which traverse the site on 200-to-400-foot-high steel truss towers. These lines and towers are visible in distant views of the site, and become particularly dramatic features when viewed from nearby or onsite vantage points (see the photograph on page 93).

Less prominent onsite visual features include the small concentrations of woody vegetation at the lower reaches of Shore Acres Creek, around the Alvernaz Ranch complex, around the old Rogers Ranch site, and along the lesser drainage channels; as well as the existing gas wells and associated apparatus, and the unpaved access and fire roads which traverse the property (see photographs on pages 82 and 83).

(2) Vicinity Character. The Southwest Hills rise above and overlook Highway 4 and the Suisun Bay lowlands, including the unincorporated communities of West Pittsburgh and Shore Acres, and the Sacramento River. These distinctive hills provide a southern visual backdrop for the western portion of the Pittsburgh planning area. The hilly backdrop consists primarily of rolling and barren grassland, with occasional concentrations of woody vegetation along the lower drainage courses. Ridgeline elevations range from approximately 860 feet behind the southwestern corner of the site to 1,458 feet atop Mulligan Hill southeast of the site.

As shown on Figure 2 earlier in this SEIR (local aerial photograph), substantial urbanization has recently occurred along the lower portion of the hills to the east of the project site,

including the Oak Hills subdivision and commercial center. The Oak Hills residential development rises from Highway 4 at Bailey Road up to a hillside elevation of approximately 350 feet. The hills remain undeveloped west of the Oak Hills subdivision.

**b. Offsite Views of the Project Site**

The project site is visible from Highway 4, from some of the newer subdivisions on the opposite side of the highway (i.e., Sea Breeze, Mota Ranch), from several vantage points in the Shore Acres and West Pittsburg communities, and from other locations in the vicinity. Photographs of typical views of the site from selected vantage points most indicative of the site's visual characteristics and importance are shown on the following pages. Figure 37 shows the locations of these selected viewpoints. These various views of the site are described below.

**(1) Views from Highway 4.** The San Marco site is visible to the greatest number of people on a regular basis from the adjacent segment of Highway 4. Portions of the project site are highly visible to both east and westbound traffic on Highway 4 along the site frontage, as shown on photographs 2, 3 and 4.

Eastbound views of the site from Highway 4 begin at the top of Willow Pass summit. However, large portions of the site are concealed from this eastbound view until vehicles reach the western frontage of the site due to the curving nature of the highway and the roadside topography.

Westbound segments of Highway 4 several miles to the east provide distant views of the upper elevations of the site. However, clear, unobstructed views of the property do not occur until approximately Bailey Road. Expansive areas of the site are visible from westbound Highway 4 beginning at the Alves property.

Highway 4 is a county-designated *Scenic Highway* from the Willow Pass Road-Pittsburg interchange to points west.

**(2) Views from the Sea Breeze and Mota Ranch Subdivisions.** The Sea Breeze and Mota Ranch subdivisions on the north side of Highway 4 are located on small hills and ridgelines with elevations similar to the lower elevations of the project site. In the Sea Breeze subdivision, the site is visible from roadway and second story vantage points in the southernmost portions of the development (i.e., those areas closest to Avila Road). In the Mota Ranch subdivision, the site is visible from several north-south oriented streets, including Pomo Street (see photograph 5), Sky Harbor Lane, Water View Place, Sandy Cove Lane, and Sand Pointe Lane.

**(3) Views from Shore Acres.** The unincorporated community of Shore Acres is located in the flatland area north of Highway 4 and beyond the Contra Costa Canal. Intermediate and distant views of the site are visible from this community, particularly on several of the north-

south oriented streets which are in line with the site, including Anchor Drive (photograph 6), Bay Drive, Beach Drive, Breaker Drive (photograph 7), Inlet Drive (photograph 8), Surfview Drive, Seaview Drive, Lakeview Drive, and Mariner Cove Drive. Portions of the site hillsides are also visible from Riverview Middle School (photograph 7) and Rio Vista Elementary school.

(4) Views from West Pittsburg. Partially obstructed distant views of the site can also be seen from various vantage points throughout the neighborhoods of West Pittsburg. The site is particularly visible from westbound Willow Pass Road between Bailey Road and Port Chicago Highway (see photograph 9). The site is not visible from the West Pittsburg neighborhoods closest to the highway (i.e., the Mary Avenue/Waters Street neighborhood between Willow Pass Road and the highway) due to the topography of the area and the elevated nature of the highway between this neighborhood and the site.

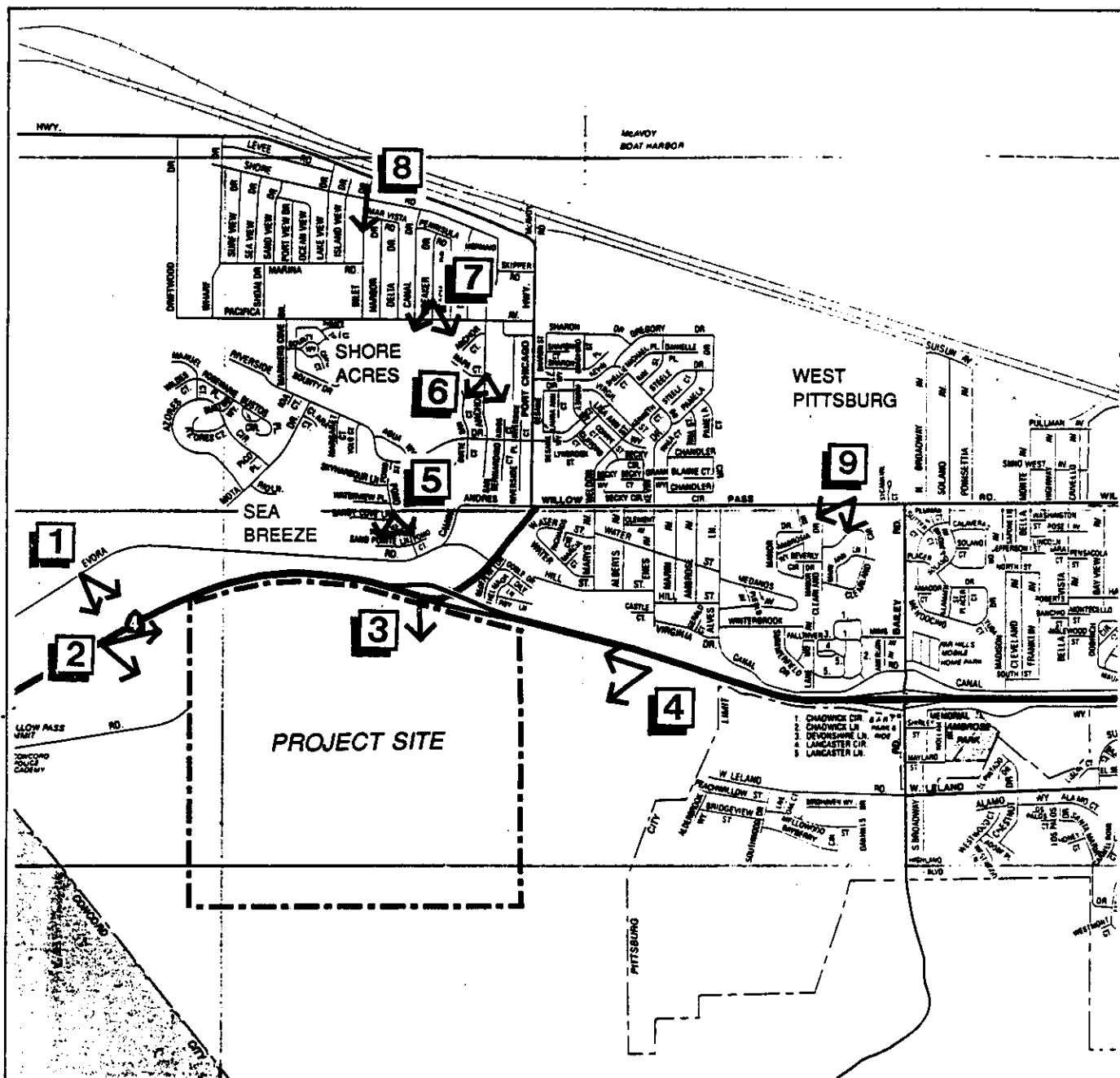
(5) Views from Other Vantage Points. The project site is also visible from less frequented local vantage points, including the eastbound segment of Evora Road as it descends into West Pittsburg from Willow Pass Summit (see photograph 1) and the east end of Avila Road before it dead ends at the site. Views of the site from Evora Road are particularly expansive due to the elevated relationship of this route.

## **2. IMPACTS**

The visual impacts of the project are described below, including project-related changes in the overall visual character of the site and vicinity, and related effects on the visual experience from the various offsite vantage points described above. In addition, the visual impacts of the project on views from Highway 4 and from existing residential areas on the opposite side of Highway 4 are illustrated by the "before and after" photomontage visual simulations which follow on Figures 38, 39, and 40. These simulations have been prepared by the EIR authors based on the preliminary development plan and associated architectural design particulars described in section III (especially Figures 5, 8 and 9). The simulations are intended to illustrate the visual implications of the general layout, development intensity, and building mass relationships of the project. More detailed architectural features (windows, building materials, etc.), and common and individual landscape features, two factors which would tend to soften the visual impact of the project are not shown.

### a. General Impacts on the Visual Character of the Project Site

The distinctive barren, rolling hillside landscape of the Southwest Hills is particularly vulnerable to the contrasting visual impact of urban development. As shown on the three visual impact simulations, construction of the project as proposed would fundamentally change the physical and visual character of the site, including dramatic topographic changes and the replacement of the existing rural, open grassland setting with an expansive and intensive suburban residential landscape.



Basic map reproduced by permission of the California State Automobile Association, copyright owner.

**Figure 37**  
**SELECTED VIEWPOINTS**

San Marco Project City of Pittsburgh



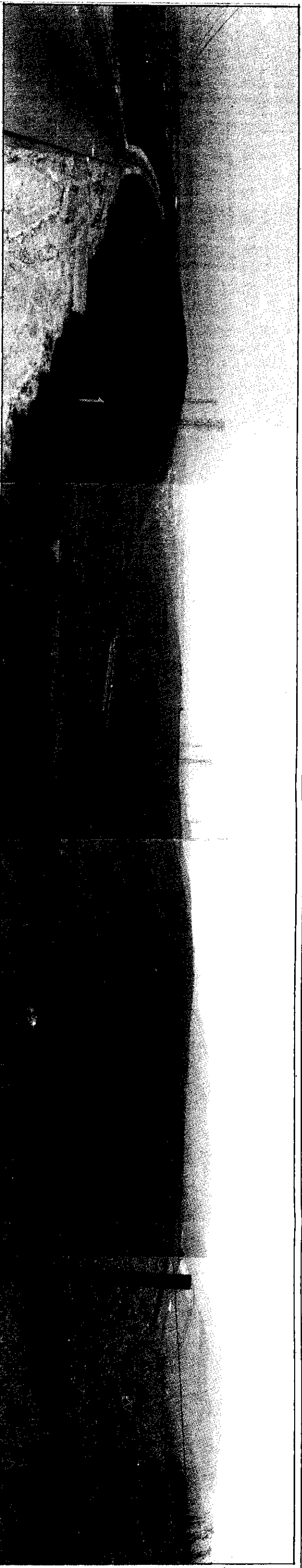


**Photo 1.** View southeast towards the site from Evora Road.

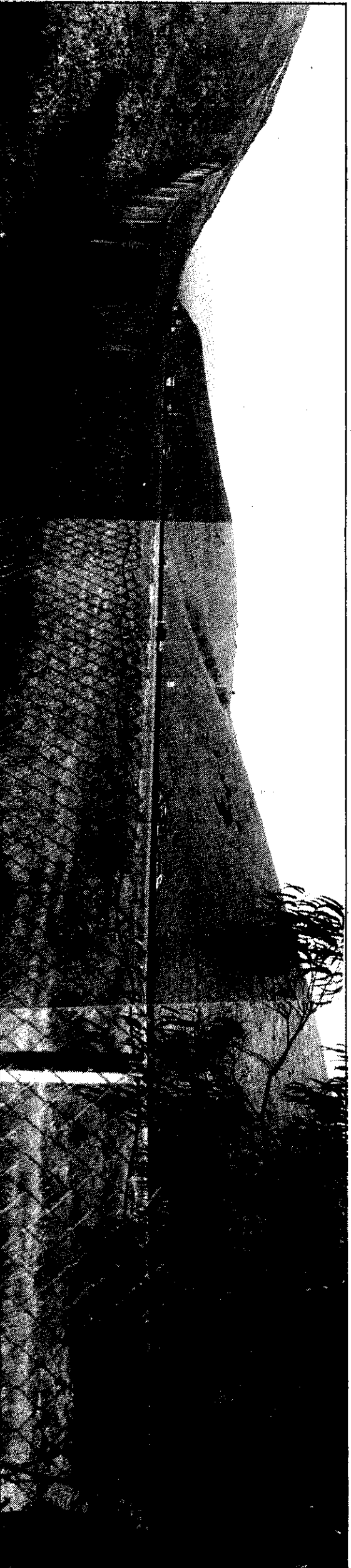


**Photo 2.** View east towards the site from the north side of Highway 4.

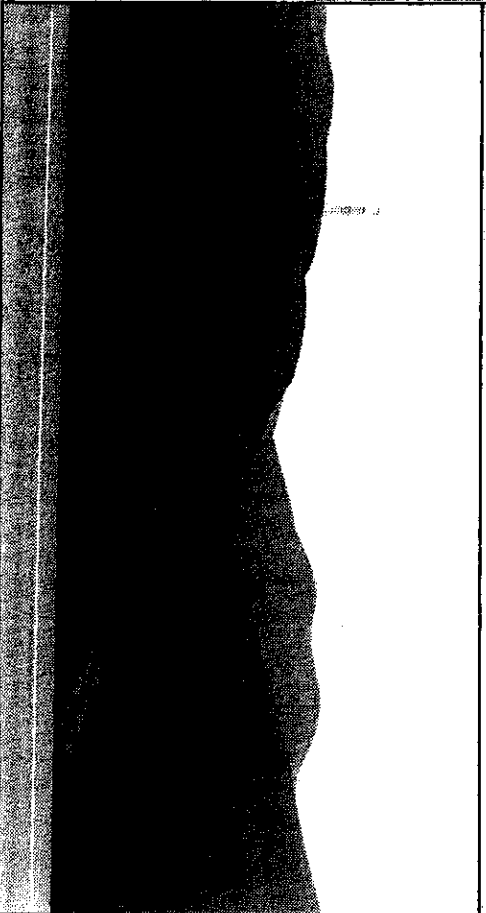


**Photo 3.** View south into the site from Highway 4, showing the Alvernaz Ranch complex and associated vegetation along lower reach of Shore Acres Creek, and the PG&E transmission lines in the background.

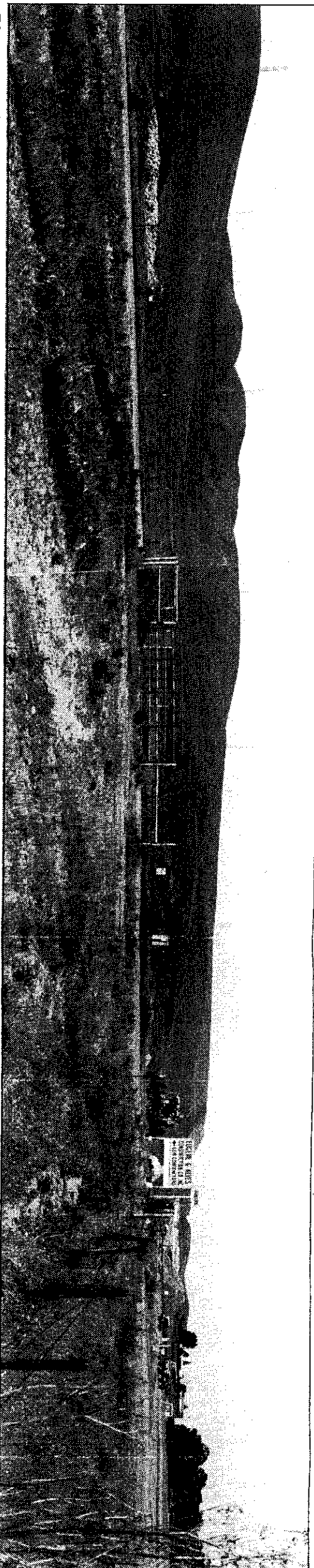


*Photo 4. View west towards the site from the south side of Highway 4.*

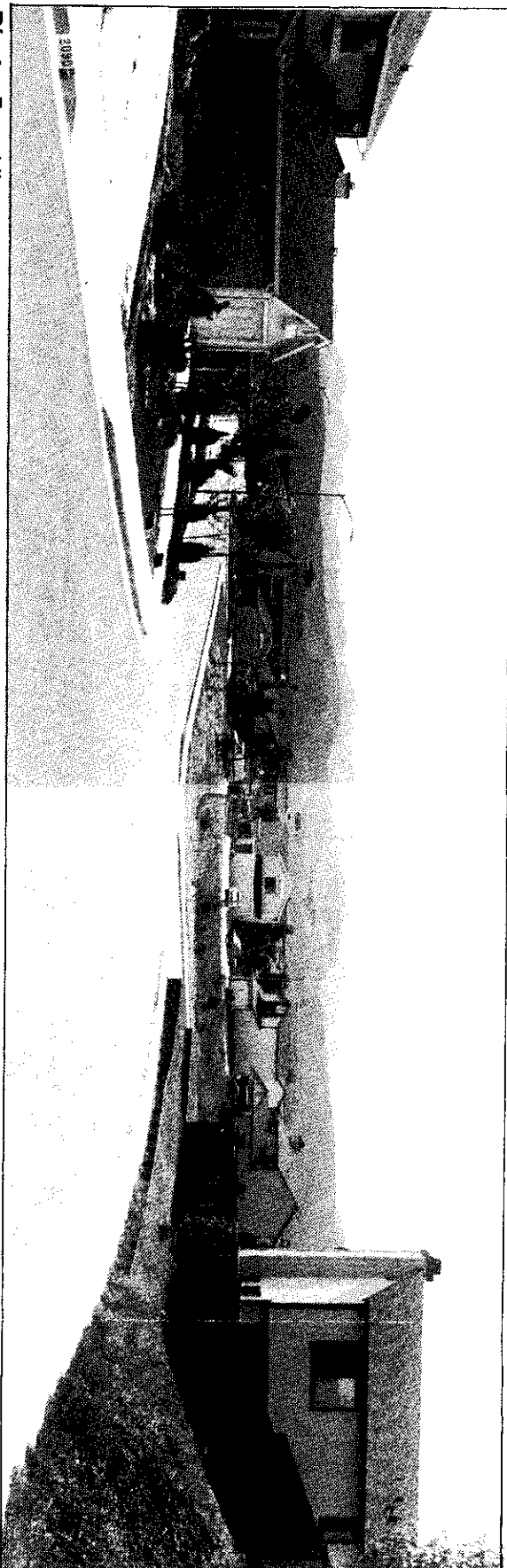


*Photo 5. View south towards the site from Poma Drive at Sandy Cove Lane in the Mota Ranch subdivision.*

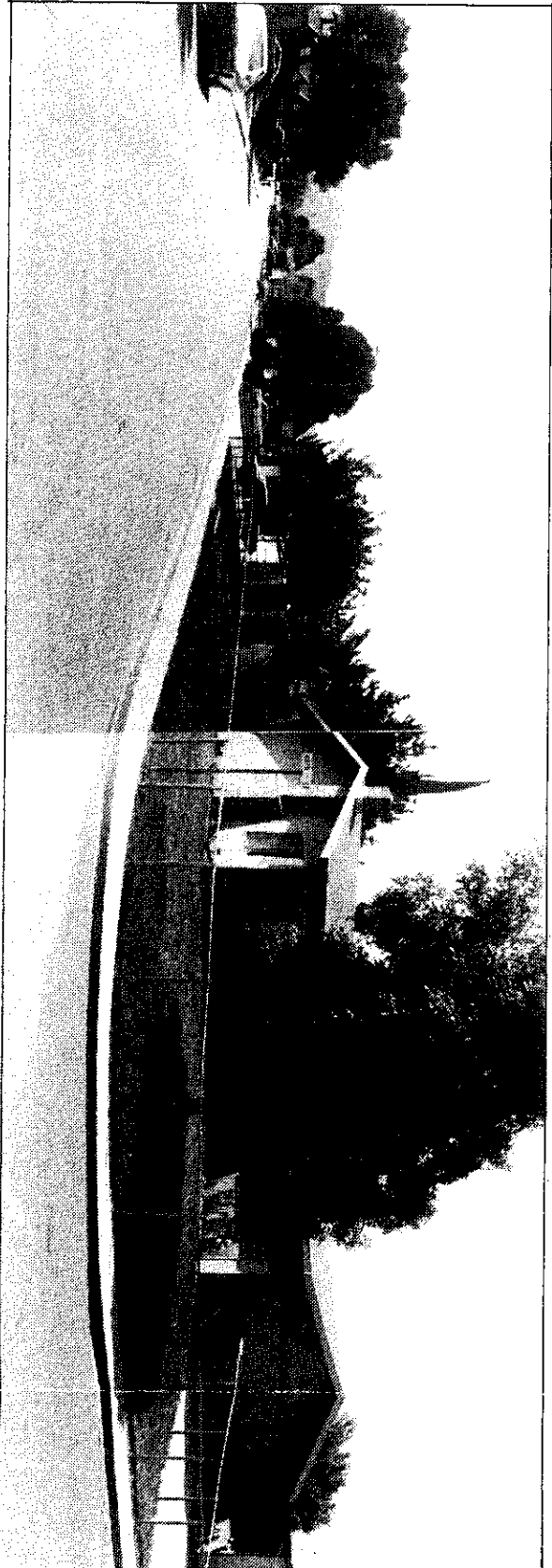


*Photo 6. Intermediate view south towards the site from Anchor Drive at Napa Court in the Shore Acres subdivision.*

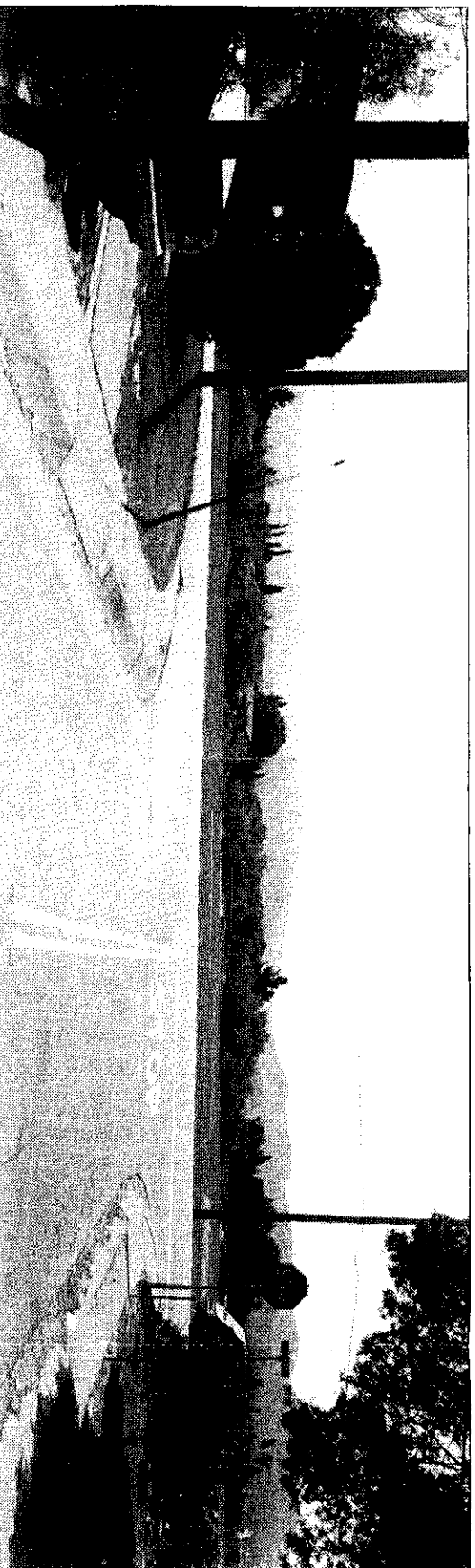


**Photo 7.** Intermediate view south towards the site from Breaker Drive at Pacifica Avenue (Riverview Middle School field is in the foreground).



**Photo 8.** Distant focal view south towards the site from Inlet Drive at Shore Road in the Shore Acres subdivision.

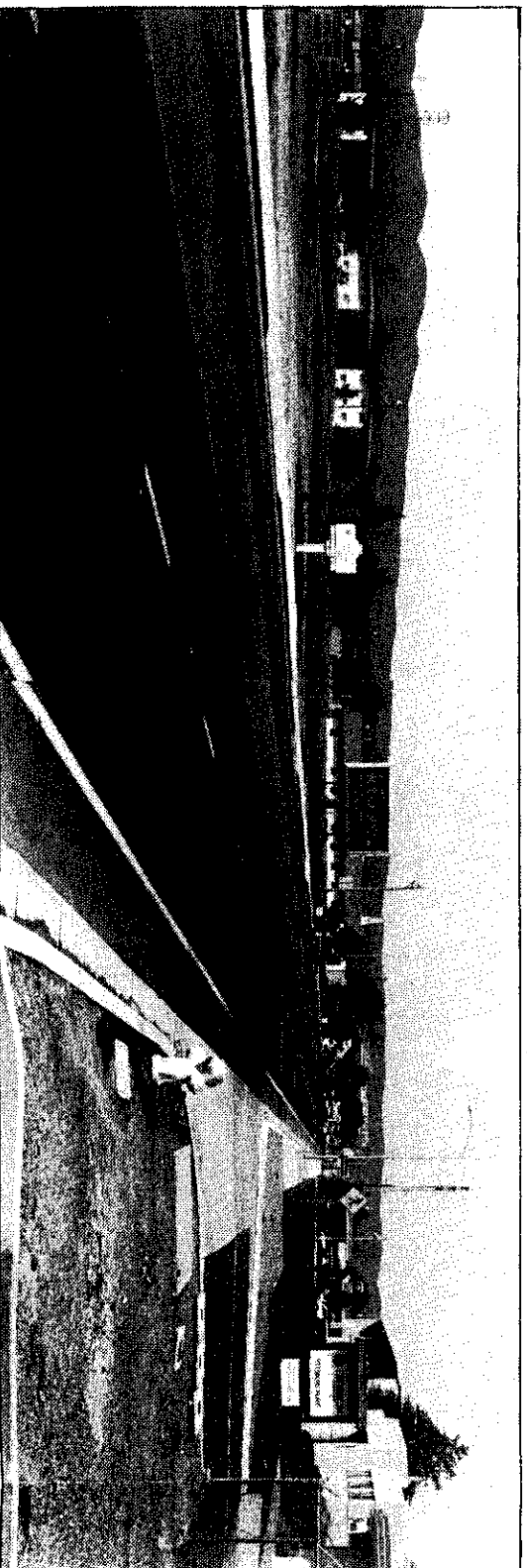
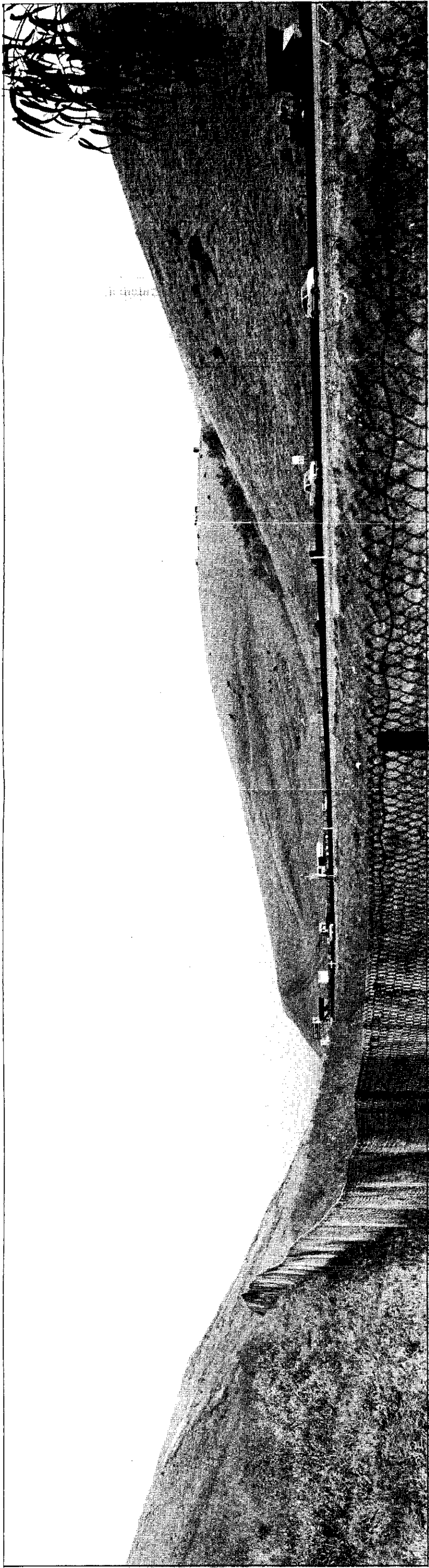
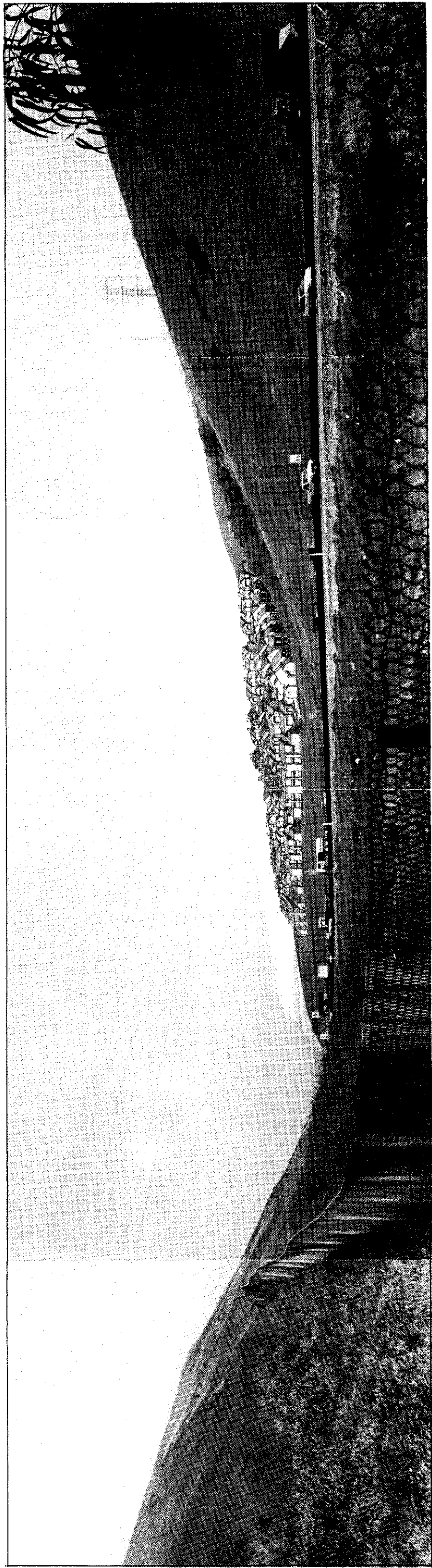


**Photo 9.** View southwest towards the site from Willow Pass Road near Clearland Drive.



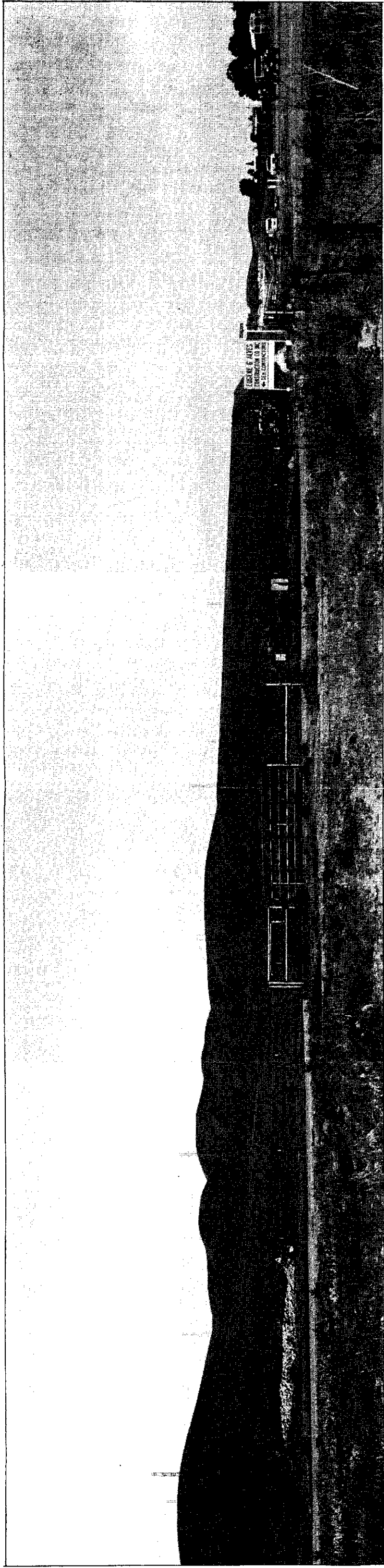


**BEFORE**

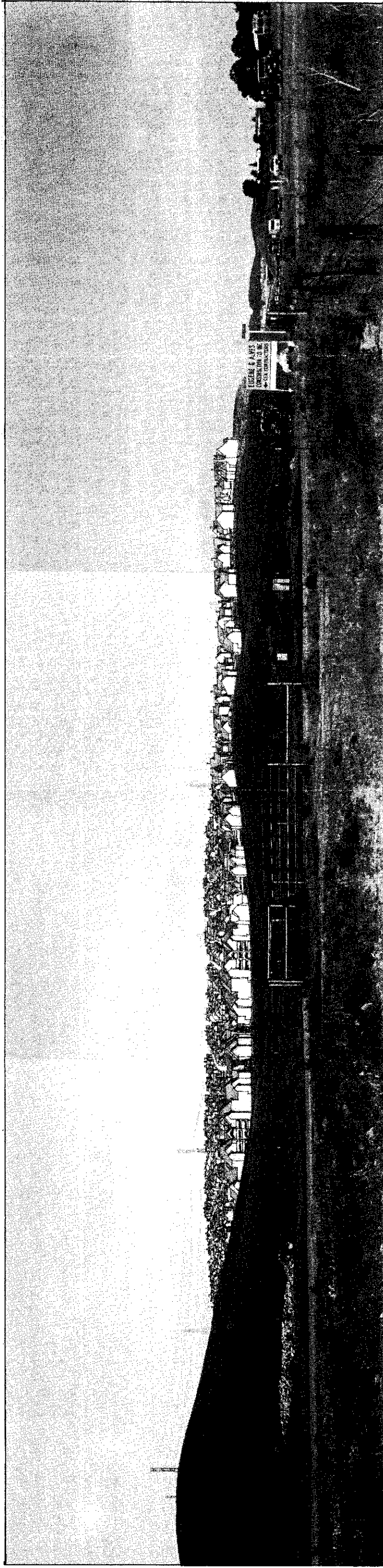


**AFTER**

**Figure 38**  
**VIEWPOINT 2: BEFORE AND AFTER**  
(LOOKING EAST FROM HIGHWAY 4)



**BEFORE**



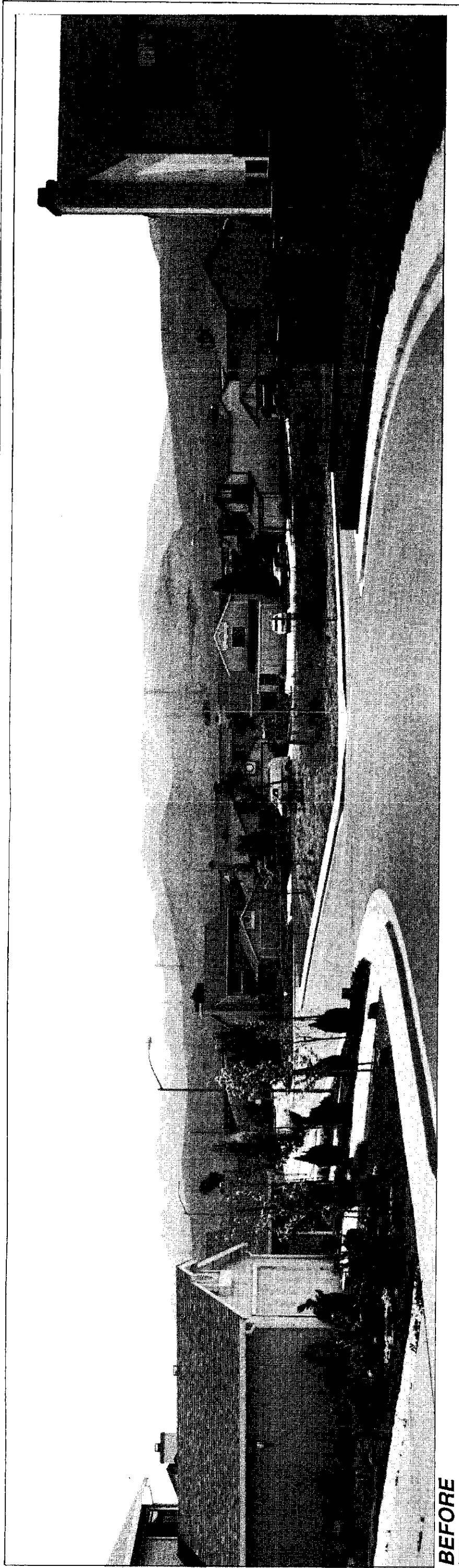
**AFTER**

Figure 39

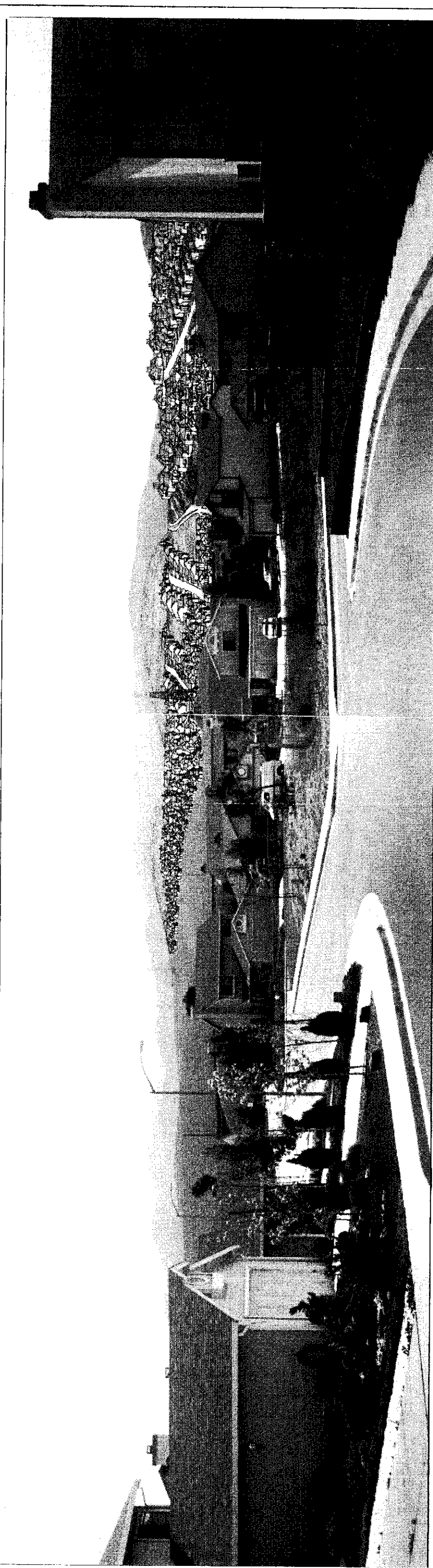
**VIEWPOINT 4: BEFORE AND AFTER**

(LOOKING WEST FROM HIGHWAY 4)





**BEFORE**



**AFTER**

**Figure 40**  
**VIEWPOINT 5: BEFORE AND AFTER**  
(LOOKING SOUTH FROM MOTA RANCH SUBDIVISION)

The simulations show that the views of the project would be similar in appearance to current views of the recent Sea Breeze and Oak Hills developments, except that the San Marco development would be more expansive (larger) and would extend further and higher into the existing hillside landscape.

The project would introduce a substantial additional increment of hillside rangeland conversion to urban use along the Highway 4 corridor between Pittsburg and Concord. Until anticipated similar development of the adjacent Alves property occurs, the project would appear as an isolated (noncontiguous) extension of the hillside suburban residential development pattern which now ends at the western edge of the Oak Hills subdivision. Although this urban conversion would be generally consistent with the Pittsburg General Plan Land Use Map, it would nevertheless represent a *significant adverse visual impact* on the rural, open space character of the distinctive existing Southwest Hills landscape.

b. Onsite Visual Impacts

(1) Transmission Towers. As described in the Land Use section of this SEIR, the location of project residential uses and other features in proximity to the two parallel PG&E electrical transmission lines, including their 200-to-400-foot tall steel transmission towers, would result in *significant adverse visual impacts* for residents and users of those project components closest to the lines.

(2) Interior Streetscape. The generally consistent building setbacks, home types, and building heights which are proposed throughout the large project could result in internal visual repetition and monotony. The repetition of garage doors of similar design and street relationship as a major element of each unit's front elevation could be particularly monotonous. In addition, the combination of narrow streets, limited front-yard setbacks, and large percentage of uniform two story homes could result in an internal visual sense of excessive density and enclosure. These design characteristics could contribute to a *significant adverse impact* on the internal visual character of the project.

c. Offsite Views of the Project Site

The project would affect all existing views of the project site from offsite vantage points. The extent of each of these effects and their impact would depend on the distance of the viewpoint from the site, and the extent of view obstruction by existing, intervening vegetation, topography, and structures. Project impacts on selected viewpoints are described in more detail below.

(1) Views from Highway 4. Project impacts on selected views from Highway 4 have been simulated on Figures 38 and 39. Figure 38 shows how the two-story, four- and six-unit multi-family units in Village C would be visible from the eastbound highway vantage point (viewpoint 2 on Figure 37). These multi-family structures would be set back approximately 200 feet or more from the freeway edge, at finished grade elevations approximately 30 to

50 feet above the freeway. The buildings would be oriented both parallel and perpendicular to the topography of the site, exposing a variety of different structural types and elevations to the freeway view.

The simulation on Figure 38 illustrates how the project will significantly change the character of this west "gateway" to the Pittsburg community, interrupting the distinctive, rolling hillside and open space landscape of the Southwest Hills with a new major urban element. This segment of Highway 4 is also a county-designated *Scenic Route*. The extent of project exposure to this highway view, and the degree of contrast between the intensive new urban element and the distinctive, rolling hillside landscape which surrounds the project, would be perceived by many as a *significant adverse visual impact*.

Figure 39 simulates the view of the project from westbound Highway 4 (the viewpoint shown is on the adjacent Alves property near Highway 4). Views from this location include the side and rear elevations of single-family homes in Village A, and the side and rear elevations of the two-story, apartment structures in Village M. Similar to the westbound Highway 4 view, the project would result in a dramatic change in this view, interrupting the distinctive existing landscape of the Southwest Hills with a major new urban element. Again, the extent of project exposure to this highway view, and the degree of contrast between the intensive new urban element and the distinctive rolling hillside landscape would be perceived by many as a *significant adverse visual impact*.

(2) Views from the Sea Breeze and Mota Ranch Subdivisions. Views of the site from local streets and homes within the recent Sea Breeze and Mota Ranch subdivisions would also be dramatically affected by the project. The change is illustrated by the simulation on Figure 40. Direct views to the south towards the distinctive, rolling forms of the Southwest Hills would be converted to views of an intensive suburban landscape below the ridgeline. Project homes in Villages L, J, and M would be most visible from these neighborhood vantage points.

The intensive and compact nature of the San Marco subdivision design would make the project rooftops a particularly prominent visual element from this vantage point. Given the proximity of the viewpoints in the Sea Breeze and Mota Ranch developments to the project site, the large portion of the project which is clearly visible from these subdivisions, and the degree of contrast between the intensive new suburban landscape and the distinctive existing hillside landscape, the project can be expected to have a *significant adverse impact* on southerly views from these two existing subdivisions.

(3) Views from Shore Acres. Vantage points in the Shore Acres community would provide more distant views of portions of the San Marco project. As illustrated by photographs 6, 7 and 8, focal views to the south down numerous north-south oriented streets in Shore Acres include vistas of the existing vacant hillsides of the project site. The proposed conversion of these project hillsides to an intensive suburban landscape will be partially visible from these vantage points.



The degree of project visibility from these vistas would be limited by intervening existing urban development and landscaping. Nevertheless, the visual relief to the existing urban setting now provided by the distant hillside and ridgeline backdrop would be noticeably reduced or lost due to introduction of the project homes on the upper elevations of these hillsides. This change would represent a *significant adverse visual impact*.

(4) Views from West Pittsburg. Project visibility from West Pittsburg would be limited primarily to vantage points along Willow Pass Road (see photograph 9), and along those diagonal, northeast-southwest residential oriented streets to the north of Willow Pass Road which are in line with the project site (see Figure 37). Project impacts on these southwesterly views from Willow Pass Road and from various diagonal residential streets south of Willow Pass Road would be similar to those described above for Shore Acres.

Views towards the site from neighborhoods on the north side of Willow Pass Road are for the most part blocked by intervening topography and urbanization.

(5) Views from Other Locations. Views of the project site from Evora Road (photograph 1) and Avila Road would also undergo a dramatic change. Because the amount of traffic on Evora Road is substantial,<sup>1</sup> and the overview of the project site from this point is both extensive and distinctly rural, the introduction of the intensive 2,938-unit project would represent a particularly dramatic change and a *significant adverse impact*. Visual impacts on views from Avila Road would not be considered significant due to the limited amount of existing traffic on this roadway.

c. Anticipated Cumulative Visual Changes in the Project Vicinity

Other anticipated development in the project's Southwest Hills vicinity includes the pending 211-acre Oak Hills South subdivision application and the anticipated development of the adjacent 293-acre Alves property (see Figure 14 in section IV.A of this SEIR). These two future developments, in combination with the 639-acre San Marco project, would represent a major westerly extension of Pittsburg urbanization, a substantial reduction in the existing, distinctive, rolling hillside landscape, a significant loss of associated rural and open space values, and a corresponding *significant cumulative adverse visual impact*. In addition, if the city in the future approves any precedent-following general plan amendments to allow similar urbanization of the adjacent DeBonneville, Ridge Farms, and Seecon properties (see Figure 14), the Southwest Hills ridgeline areas which, under the current general plan scenario, provide an important natural background element limiting the extent of the San Marco project visual impact, would also be converted to intensive urban use, resulting in an even greater cumulative adverse visual impact.

---

<sup>1</sup>PM peak hour traffic volumes eastbound on Evora Road is 675 one-way trips.

d. Project Relationships to General Plan Visual Policies

Generally, the proposed San Marco project layout represents a land use pattern which is consistent with the Pittsburg General Plan Land Use Map (see Figure 13 in this SEIR). However, as explained in section IV.A.2.a(6) of this SEIR, an approximately 95-acre general plan designated *Open Space* area along the steepest and highest ridge at the southern portion of the site (Village N) is shown on the project development plan as included within five large, 20-acre+ lots. Inadequate control on the development and use of these ridgetop lots could therefore result in an added *significant adverse visual impact* on offsite vantage points, unless some legal mechanism was incorporated into the development plan to ensure that the majority of each of these lots is preserved as undisturbed open space in perpetuity (e.g., a conservation easement).

In addition to the ridgetop *Open Space* designation, the city's general plan also identifies a system of "major" and "minor ridgelines" in the Southwest Hills. As illustrated on Figure 41, some of these designated "ridgelines" are within the project site, including a "major ridgeline" designation at the uppermost, southwest corner of the site. The general plan *Open Space Element* includes the following related policy:

*Retain major ridgelines as open space* (Policy 3.5A, page 27).

The general plan also calls for city adoption of regulations establishing setbacks from major ridgelines (Pittsburg General Plan, page 27). While no setback regulations have yet been adopted, comparison of Figures 4 (Topography) and 5 (Project Development Plan) in section III of this SEIR indicates that the project layout may not be consistent with the ridgeline protection intent of this general plan policy. Unless minor adjustment is made in the proposed layout of Village N, this inconsistency could represent a *significant adverse visual impact*.

### 3. MITIGATIONS

Obviously, acquisition of the project site as permanent open space would be the most effective means of avoiding project visual and other environmental impacts. However, the intent of an EIR under CEQA is to identify, to the extent possible, mitigation measures that would mitigate project visual impacts in a manner that is in keeping with the basic project objectives.<sup>1</sup>

---

<sup>1</sup>Section 21085 of the California Environmental Quality Act Guidelines states that the public agency shall not reduce the proposed number of housing units as a mitigation measure or project alternative "if it determines that there is another specific mitigation measure or project alternative that would provide a comparable level of mitigation."

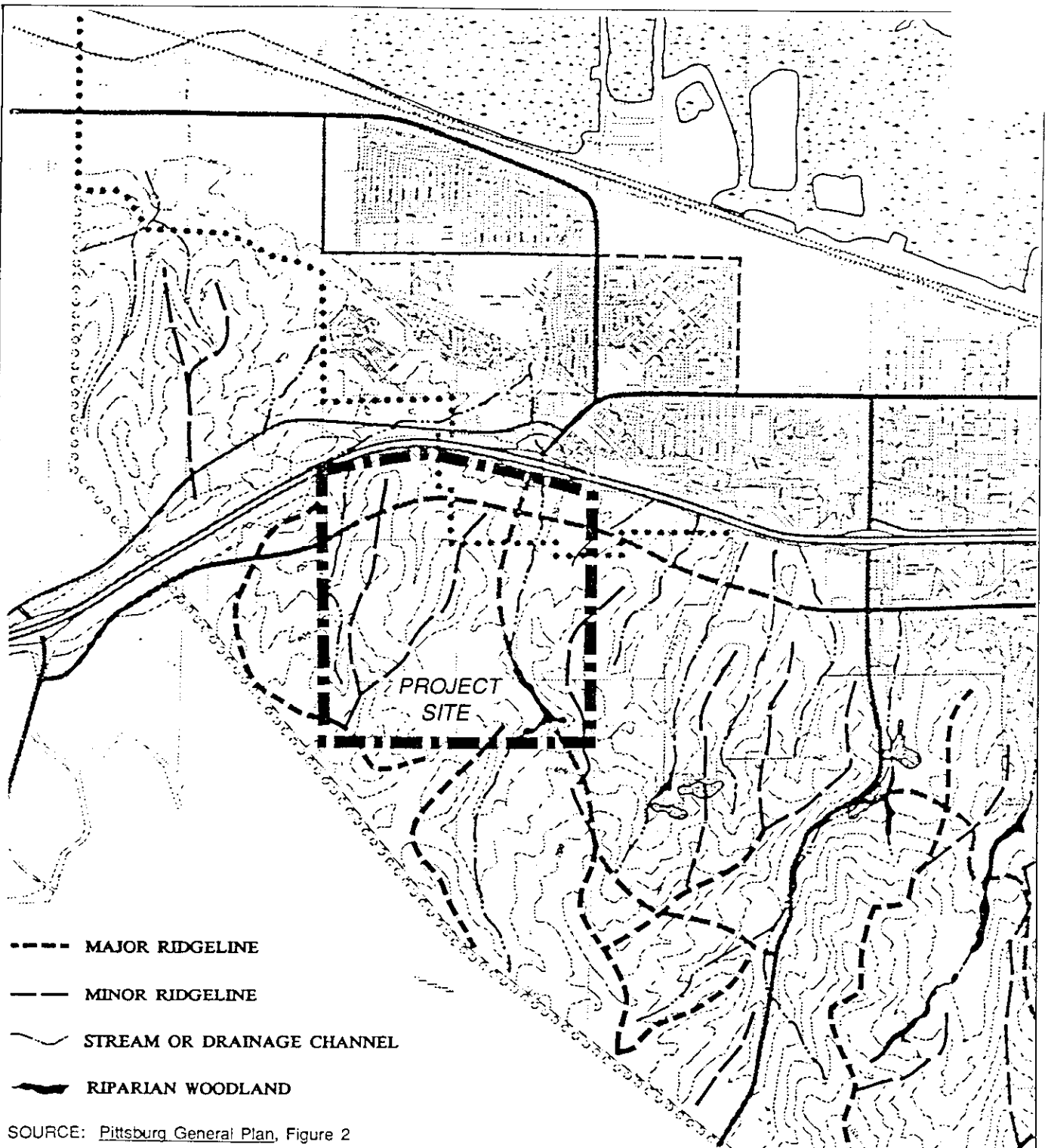


Figure 41  
**GENERAL PLAN DESIGNATED "RIDGES"**

a. General Impacts on the Visual Character of the Project Site

The significant visual impacts identified in this SEIR which are associated with the displacement of the distinctive, rolling hillside forms of the Southwest Hills by a major intensive residential development are not mitigable to levels considered less than significant. Although numerous measures are identified below which would reduce the degree of adverse visual impact, the loss of rural, open space and visual values associated with any substantive residential development of the project site would be *significant and unavoidable*.

However, the visual impact of the project could, nevertheless, be substantially reduced through incorporation of the following measures into the development program:

(1) Ridgeline Protection. Require that all project construction occur at elevations below the major ridgeline portion of the site; i.e., below approximately the 750-foot contour.

(2) General Design Controls. Incorporate in the final design and title provisions for the San Marco project measures and controls on architecture, grading, introduced landscaping, future tree removal, and ongoing landscape maintenance which are specifically formulated to reduce impacts on offsite vantage points.

Emphasis should also be placed on the use of subdued appearing building materials and colors in order to minimize contrast with the surrounding hillside landscape.

(3) Design Controls for Custom Lots. For custom home lots, incorporate architectural design standards in the individual lot CC&Rs to ensure against the construction of visually conspicuous residential structures, particularly on the most visually vulnerable north-facing and ridgetop lots.

(4) Landscaping. Common and individual landscaping will have a substantial long-term effect in softening and reducing the visual impacts of the project. Given the importance of landscaping in reducing the visual impacts of the project, the following landscaping provisions should be included in the development program:

- Planting plans, specifications, and long-term maintenance responsibilities for the proposed project street trees, park, and other common landscaping (see Figure 10) should be formulated and detailed to the satisfaction of the city. These plans and specifications should provide reasonable assurances for the long-term health and survival of these common project landscape features.
- A program of ongoing maintenance and replacement of introduced landscaping should be established by the applicant to the satisfaction of the city.
- Project CC&Rs should include landscaping standards for private exterior areas which will ensure the compatibility of each homesite with the surrounding San Marco neighborhood and will avoid increased adverse impacts on offsite vantage points.

(5) Light and Glare. The design of common project street lighting should incorporate use of low-intensity fixtures with the cone of light focused in a manner which avoids illuminating any nearby vertical surfaces.

The CC&Rs for each individual lot should include stringent parameters regarding exterior lighting to ensure against nighttime visual impacts on offsite vantage points. The exterior lighting parameters should stipulate low mounting heights and, where the exterior fixture may be exposed to a surrounding vantage point or vantage points, use of appropriate light refractors or diffusers.

Any project pathway illumination should be limited to low bollard fixtures. In addition, any use of exterior lighting at other project facilities, such as the community park and recreation facilities, should be subject to the same design standards as those described above for individual project lots.

b. Onsite Visual Impacts

(1) Transmission Towers. As described in the Land Use section of this SEIR, the visual impacts of transmission lines on nearby residential and other important internal project vantage points could be reduced, although not to less than significant levels, by the strategic location of trees and other landscaping (see section IV.A.3, mitigation measure a(5)).

(2) Interior Landscapes. The potential visual monotony and other undesirable visual characteristics of project streets with uniform home setbacks and building heights could be mitigated by the introduction of more variation in unit design, the inclusion of more single-story elements in project two-story homes, the introduction of more single-story homes at selected locations along each street, and introduction of unit designs which do not emphasize the garage door in the front elevation.

c. Offsite Views of the Project Site

All impacts to offsite views of the project site identified herein as significant could be substantially reduced (although not to less than significant levels) by implementation of the mitigations listed under "a" above. Those mitigations which apply most directly to each affected vantage point are identified below. Additional mitigations are listed where appropriate.

(1) Views from Highway 4. Implementation of mitigations relating to increased tree planting; implementation of an effective landscaping and maintenance plan for Villages A, B, C, and M; and the requirement for use of subdued building materials and colors, and in particular, subdued roofing materials, would reduce project impacts on views from Highway 4. Because the multi-family structures in Villages B, C, and M are the most highly visible

portion of the site from Highway 4, the opportunity to provide dense landscaping in the open space areas surrounding these clusters of multi-family buildings would be particularly important.

In addition, the southern portions of Shore Acres Creek (i.e., the segment south of the PG&E transmission lines) and its westernmost tributary should be preserved, incorporated into the project design, and enhanced with additional native vegetation, to provide additional visual interest from the freeway as well as from internal viewpoints.

(2) Views from the Sea Breeze, Mota Ranch and Shore Acres Subdivisions.

Implementation of all of the mitigation measures listed under "a" above would reduce project impacts on views from these three communities. Because most of the views from these areas are intermediate and distant views of the upper elevations of the project, measures involving the preservation of the uppermost project ridgeline (i.e., the general plan designated "major ridge" and *Open Space* area) would be a particularly important mitigation measure.

(3) Views from West Pittsburg. Implementation of all of the mitigation measures listed under "a" above would reduce project impacts on views from the West Pittsburg community. Similar to Shore Acres, because most of the views from the West Pittsburg area are distant views of the higher portions of the site, the preservation of the uppermost ridgeline (i.e., the designated "major ridge" and *Open Space* area) would be a particularly important mitigation measure.

(4) Views from Other Locations. Mitigations relating to use of subdued building materials and colors, subdued roofing materials, and common landscaping would also be effective in reducing project impacts on Evora Road and Avila Road-Leland Road views. Mitigations relating to increased overall landscaping; landscaping in Villages A, B, C, and M; and use of subdued roofing materials would be particularly important for reducing impacts on views from Evora Road.

d. Cumulative Visual Impacts on the Project Vicinity

Each anticipated additional development in the Southwest Hills area (i.e., the Alves, Oak Hills South, DeBonneville, Ridge Farms, and Seecon Properties) is currently undergoing or will be subject to its own environmental review. The visual impacts related to each of these projects should be addressed in each project review. Particular attention should be paid to the "ridgeline" visual impacts of potential future development on the Seecon property.

e. Project Relationship to General Plan Visual Policies

As recommended under subsection "a" above, the layout of Neighborhood N should be revised as warranted to increase project consistency with the intent of Pittsburg General Plan "major ridgeline" and *Open Space* designations. In addition, any private ownership of

the designated *Open Space* area should be subject to permanent prohibition on future development or visual impact on at least 80 percent of the ownership through application of a conservation easement or some other legal instrument.





---

## G. VEGETATION AND WILDLIFE

---

The following section evaluates existing vegetation and wildlife conditions on the San Marco site, potential project impacts on these conditions, and measures warranted to mitigate identified impacts. This evaluation has been prepared by the EIR biologist, Charles Patterson, based on: (1) historic data regarding the site and region from such sources as the California Natural Diversity Data Base (CNDDDB), the California Native Plant Society (CNPS), the California Department of Fish and Game (CDFG); (2) a wetland survey of the site prepared for the project applicant; (3) standard references; (4) the author's personal files on this region; and (5) a field survey of the site.

### 1. EXISTING SETTING

Existing vegetative features on the site are mapped on Figure 42 and described below.

r Descriptive terminology is used throughout this section to distinguish various types of  
r vegetative features and habitats. *Riparian vegetation* is any stream-dependent vegetation  
r ranging from perennial herbs and marshes to oak forest and willow thicket. *Riparian thicket*  
r refers to clusters of woody riparian vegetation which are generally intermediate sized  
r communities (i.e., large bushes or small trees) along a stream or drainage corridor. These  
r thickets typically include willows, but may also contain wild rose, blackberry, coyote brush,  
r and buckeye.

r A *wet meadow* is a wetland area of herbaceous vegetation such as sedges, rushes, and  
r perennial grasses. These areas are often, but not exclusively, riparian, and can be sub-  
r irrigated by a seasonally high water table.

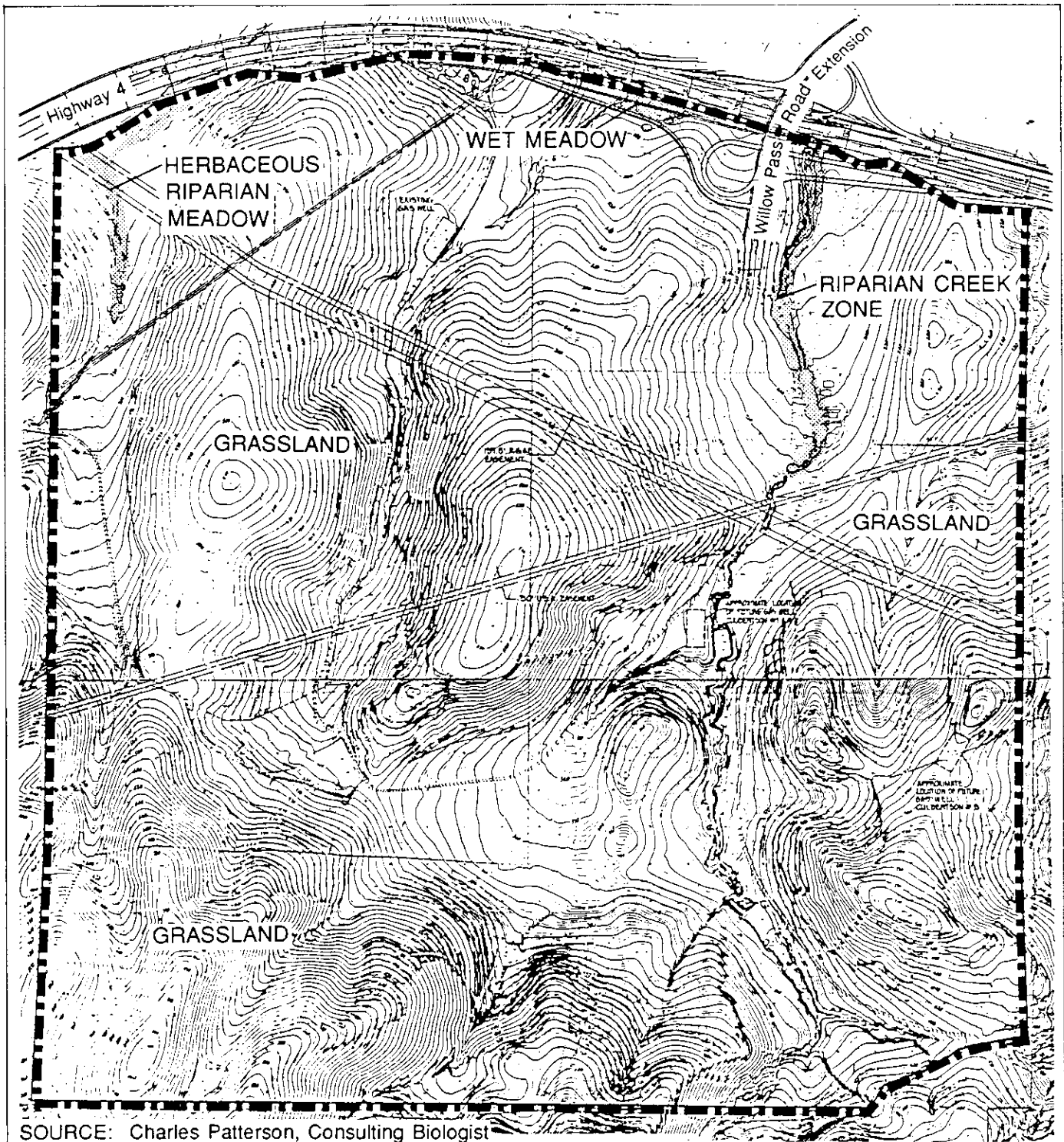
#### a. Overview

The site includes 639 acres of north-facing hillsides which contain several alternating north/south-oriented ridges, draws and drainage channels which flow northward toward Suisun Bay. The predominant vegetation on the site is non-native annual grassland typical of grazed range land in the region. The long-term history of heavy grazing on the site is reflected particularly in the general lack of native grasses and the subsequent invasion by non-native species. The onsite grasslands are dominated by introduced grasses and weeds, with scattered native wildflowers (see photo on page 82).

The site is surrounded to the east, west, and south by similar terrain and vegetation, although actual plant composition and densities vary according to human exposure and site history (i.e., levels of grazing).

The site contains no highly significant hydrologic features, although there is one perennial creek (Shore Acre Creek), several ephemeral (seasonal) drainage channels, and a few small associated wetland habitats described below. There are no pristine riparian habitats, although limited riparian vegetation (water dependent vegetation) is present along the northern stretch of Shore Acre Creek. There are three small seeps and one spring located on the project site along two of the project drainage courses. There are numerous small scattered rock outcrops, but these are not composed of unusual rock types (e.g., serpentine) nor are there any associated unusual soil types present.





SCALE IN FEET

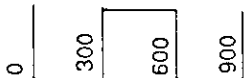


Figure 42

## SITE VEGETATION MAP

San Marco Project City of Pittsburg

Wetlands known in this region typically occur as streambed communities on larger creeks, and as vernal pools and/or seasonal wetlands in valleys. The study area contains a small amount (approximately 3.5 acres) of wetland which meets US Army Corps of Engineers (ACE) jurisdictional "wetland" criteria. This wetland area includes the three stream channels on the site, two areas which formerly contained stock ponds, and four other wetland areas adjacent to the stream beds which contain ACE-defined positive wetland indications related to soil, vegetation and hydrology.<sup>1</sup>

#### b. Vegetation

(1) Grassland. Virtually all of the site and most of the surrounding hills have experienced severe displacement of the native flora (perennial grasses and numerous wildflowers) by more aggressive non-native species, with considerable assistance from many decades of livestock grazing. The site is now covered almost exclusively by cismontane, a non-native annual grassland.<sup>2</sup> The cover is generally uniform in height and very low (six inches to two feet tall), with virtually 100 percent vegetation cover in most areas.

The dominant plants in the grassland are introduced grasses, primarily wild oats (*Avena fatua*), soft chess (*Bromus mollis*), rigput (*Bromus rigidus*), wild barley (*Hordeum depressum*), Italian ryegrass (*Lolium multiflorum*), and common weeds, including purple vetch (*Vicia sp.*), filaree (*Erodium cicutarium*), mustards (*Brassica campestris*, *B. niger*, *Sisymbrium sp.*, *Raphanus sativus*), thistles (*Carduus*, *Cirsium*, *Silybum*), wild geranium (*Geranium dissectum*), and yellow star thistle (*Centaurea solstitialis*). Some native perennials remain in low densities on the project site, including brodiaeas (*Brodiaea pulchella*, *B. laxa*, and *B. elegans*), blue-eyed grass (*Sisyrinchium bellum*), two sanicles (*Sanicula bipinnatifida* and *bipinnata*), paintbrush (*Castilleja affinis*), an onion (*Allium amplexans*), two phacelias (*Phacelia tanacetifolia* and *cuticularia*), and a low woody lupine (*Lupinus sp.*).

Numerous native annuals are also still present on the site in very limited quantities, including fiddleneck (*Amsinckia intermedia*), goldfields (*Lasthenia chrysostoma*), collinsia (*Collinsia sparsiflora*), common popcornflower (*Plagiobothrys nothofulvus*), a gilia (*Gilia clivorum*), California poppy (*Eschscholzia californica*), an annual daisy (*Monolopia major*), several clovers (*Trifolium tridentatum*, *bifidum*, *microcephalum*, *depauperatum*), common buttercup (*Ranunculus californicus*), purple owl's clover (*Orthocarpus purpurascens*), and a clarkia (*Clarkia sp.*). A few native grasses are also present, including purple needlegrass

---

<sup>1</sup>Streambed and other wetland delineations have been determined by LSA Associates, Inc. Documentation of these findings is provided in Appendix D in a letter from Malcolm J. Sproul of LSA Associates, Inc. to Al Stanley of the North State Development Company, dated April 17, 1992, and an associated map, also included in Appendix D. These delineations have been reviewed by the EIR authors and incorporated into the FSEIR.

<sup>2</sup>Described by Holland, 1986.

(*Stipa pulchra*), meadow barley (*Hordeum brachyantherum*), squirreltail grass (*Sitanion*), and wildrye (*Elymus glaucus*), but these are neither abundant nor dominant in the area. The steeper north-facing hillsides, in particular, still contain many of the region's native



wildflowers such as shooting star (*Dodecatheon hendersonii*), woodland star (*Lithofragma*), yarrow (*Achillea*), *Allium*, and several brodiaeas.

(2) Drainages. Most of the site's ephemeral runoff channels represent jurisdictional "waters of the U.S." However, they typically support common upland species (*Avena*, *Bromus*, *Brassica*, *Silybum*, *Erodium*, etc.) rather than wetland or riparian species. They do contain some occasional wetlands species, such as water-cress (*Rorippa nasturtium-aquaticum*), rushes (*Juncus patens*, *tenuis*, *oxymuris*, and *mexicanus*), yellow sweet-clover (*Melilotus*), curly dock (*Rumex crispus*), and cocklebur (*Xanthium strumarium*).

A few of the more protected ravine banks also support the upland species of poison oak (*Toxicodendron diversilobum*) and wild rose (*Rosa*).

(3) Woody Vegetation. The project site contains minimal woody vegetation. Small stands of trees occur at the following locations: (a) in the extreme north central area by the freeway where a remnant homestead (the Alvernaz Ranch) includes numerous planted and volunteer trees and shrubs; (b) along the lower (northern) reach of Shore Acres Creek; and (c) as scattered willows associated with the swale wetland in the northwest area of the site. There is no chaparral on or near the project site, and there are only a few scattered stands of California sagebrush (*Artemisia californica*) along some of the exposed rock outcrops.

Lands surrounding the project site are generally similar to the site in that it consists of open annual grassland and very little woody vegetation.

(4) Sensitive Plant Species. No sensitive plant or animal species are reported as occurring on the project site area or in the immediate surroundings by the California Natural Diversity Data Base (CNDDDB, 1989) or the California Native Plant Society.<sup>1</sup> A list of sensitive plants known to occur in this general region and which were regarded as the most likely rare species to occur on the site is provided in Table 1 of Appendix D in this SEIR. No unusual plant species were encountered in the field survey of the site. This result was not unexpected based on the common nature of the habitats present and the great degree of disturbance that has occurred on the site.

The most likely sensitive species present in the project vicinity are the large-flowered fiddleneck, the caper-fruited tropidocarpum, and/or the Mt. Diablo helianthella. All three of these species occur in moderately restricted habitats (unlike the highly restricted conditions offered by vernal pools, alkaline sinks, and serpentine substrates), which historically could have occurred in this general area. None of these species, nor any especially prime habitats for these species, were found on the site. No helianthella was found, although scattered representation of a common and somewhat look-alike species, mules ears (*Wyethia helenioides*) was found on the site. Only common fiddleneck (*Amsinckia*

---

<sup>1</sup>CNPS, Smith and Berg 1988.



*intermedia*) was encountered (as opposed to the sensitive large-flowered species). No *Tropidocarpum* or any especially suitable habitats (alkaline meadow or scrub, heavy clay) for *Tropidocarpum* were found on the site.

The most likely locations on the site for sensitive species are those areas around the rock outcrops, which currently support only common weeds (*Avena*, *Bromus*, *Erodium*, *Hordeum*, *Medicago*), an infrequent wild buckwheat (*Eriogonum nudum*), and a wild heliotrope (*Phacelia cicutaria*). The site's wet areas, while potentially providing suitable habitat for several sensitive species, have been almost completely disturbed and converted to species-poor assemblages of native and introduced herbs, including native rushes (*Juncus*) and monkeyflower (*Mimulus guttatus*), and numerous weeds (*Rumex*, *Rorippa*, *Polypogon*, *Xanthium*, *Polygonum*, *Picris*, *Carduus*). Long-term and continued grazing, plus the ephemeral character of most of these areas, has prevented the development of natural habitats suitable for sensitive species.

#### b. Wildlife

(1) General. The project site has some limited value as wildlife foraging habitat. Productivity of the site is relatively low (roughly 300 to 500 pounds per acre dry weight forage) because of the historic conversion to annuals, history of heavy grazing, shallow and well drained soils, and generally harsh climatic conditions. The site does not contain any special habitat features or attractions that make it especially valuable to wildlife.

The site supports a typical grassland community (with numerous seed-producing grasses and weeds), plus the normal complement of insects, western fence lizards, jackrabbits, and songbirds. The site is also likely to support minor use by wide-ranging wildlife, such as deer, skunk, coyote, ground squirrels, golden eagles and other raptors, and coyotes. The minor wetland habitats that are present are generally seasonal and do not support any significant aquatic or pristine riparian communities.

(2) Sensitive Wildlife Species. There are several sensitive animal species that have been reported within this general region,<sup>1</sup> including several uncommon wildlife sightings (prairie falcon, burrowing owl, San Joaquin pocket mouse) in the Los Vaqueros Reservoir study area to the southeast.<sup>2</sup> While the project vicinity is probably used on occasion by any of several raptors for brief periods of foraging, these species are not expected to reside in the area or use it extensively.

A species of primary concern in the grasslands of this general region is the San Joaquin kit fox, which is known to exist near Bethany Reservoir and the Los Vaqueros areas to the east and south. However, the project site is not within the kit fox's currently known range.

---

<sup>1</sup>See Table 2 in Appendix D.

<sup>2</sup>Wernette et al. 1983.

Only a very few small burrows of any kind were observed on the site. No foxes and only a few ground squirrels were observed.

The project site is also near the Delta and San Joaquin Valley habitats for the endangered Swainson's hawk. However, the site is outside the identified ranges, and does not constitute prime habitat, for this species.

Golden eagles, northern harriers, prairie falcons, red-tailed hawks, and several other raptors may use the project vicinity for occasional foraging, but are not likely to utilize this particular site for any significant percentage of their range or forage base. No evidence of cliff nests or perches was observed, and no active large burrows were encountered.

Burrowing owls have been reported in Los Vaqueros and other locations in the region, but none were observed or suspected on the project site. There is some potential habitat for burrowing owls, but no evidence of use by this species was observed on the site.

There is generally very little significant habitat for tricolored blackbird, nor for any other riparian or wetland-dependent species. The California Department of Fish and Game (DFG) has identified historic stock ponds on the site as potential habitat for the California tiger salamander based on review of USGS mapping of the site. Detailed onsite examination of the ponds by the EIR biologist has revealed that no suitable habitat for the California tiger salamander currently exists on the site. The stock ponds are intermittent and fully drained. These ponds and their biotic significance are further addressed below in the discussion of existing wetlands.

#### c. Sensitive Habitats and Communities

(1) General. The project contains few features of high natural biotic sensitivity. The onsite and local grassland communities (the natural habitat category typically containing lowest inherent sensitivity) do not appear to be of high value as wildlife habitat, due to the preponderance of low weedy annual grass growth, the limited numbers of burrows, and the limited supply of natural water. The region is known to contain such sensitive natural communities as riparian thickets and woodlands, seeps and springs, vernal pools and other seasonal wetlands, uncommon rock outcrops, mature valley and other oak woodlands and savannas, and infrequent natural meadows and perennial grasslands. In addition, three small seeps and one spring have been located within the stream channels on the site.

The most significant habitats present onsite include the many rock outcrops (which could provide suitable habitat for several native plants and animals, but currently only support common and generally weedy species), the small wet area in the northwest corner of the site, and the limited riparian vegetation along the lower portion of Shore Acres Creek. The other seasonally wet areas (i.e., the ephemeral runoff channels) are not highly sensitive because of their lack of significant native vegetation, their lack of woody cover, and their seasonal character.

(2) Wetlands. Features on the site that are of some significant habitat value are limited to the three small areas of wetland that occur along the site's northern edge (within 100 yards of the freeway). One is a small area along the site's westernmost extreme northwest corner which contains an ephemeral riparian community of herbs and grass-like plants, including several rushes (*Juncus patens*, *Oxymeris*, *bufonius*, *tenuis*, *mexicanus*), meadow barley (*hordeum brachyantherum*), cocklebur, water-cress, annual bluegrass (*Poa annua*), and a small amount of brass buttons (*Cotula coronopifolia*). The second is the lower end of a natural swale that is slightly diverted and dammed by the dirt driveway on the site, creating a broad ephemeral "floodplain" (i.e., a channel with a sandy, gravelly substrate and distinct banks). This floodplain supports a wetland community of rushes and other seasonal wetland plants, plus several arroyo willows (*Salix lasiolepis*) and cottonwood trees (*Populus*). The third wetland area which provides significant habitat value is in the northeast corner of the site where Shore Acres Creek runs north to the freeway. This northern section of the creek still supports limited natural riparian thicket vegetation. The natural creekbed supports several dozen willows, plus small thickets of poison oak and wild rose. All of the woody vegetation along the upper (i.e., southern) reaches of this creek (which has been identified in the Pittsburg General Plan as riparian habitat)<sup>1</sup> has recently been cut down.

Other wetland areas identified on Figure 42 may meet the definition of wetland, but are not considered by the EIR biologist to have significant habitat value.

The site contains only common soils and parent rock materials, and contains no natural seeps, springs, or other major wet surface features. The two historic stock ponds described above and elsewhere in this SEIR were created by man-made dams constructed in drainage swales. These dams have been breached and no longer collect water.

d. Army Corps of Engineers and California Department of Fish and Game Jurisdiction

As shown on Figures 34 and 42 and described above, the site contains one perennial creek, at least two ephemeral drainage channels, and limited adjacent wetland areas. Potential for state and local governmental jurisdiction over these areas are addressed below.

(1) Army Corps of Engineers. Under Section 404 of the Clean Water Act, the US Army Corps of Engineers (COE) administers a program to regulate discharges of fill into "waters of the United States," which includes not only recognizable waterbodies such as rivers and lakes, but also isolated and seasonal "wetlands." Because the area of jurisdictional wetlands on the site (which are comprised primarily of intermittent streams) exceeds one acre, any alteration to the creeks and wetland areas (fill, etc.) would require a specific Section 404 Corps permit.

---

<sup>1</sup>See SEIR Figure 42.

(2) State Department of Fish and Game (DFG). The California Department of Fish and Game (DFG) has jurisdiction over any proposed activities that would divert or obstruct the



natural flow or change the bed, channel, or bank of any stream under Fish and Game Code Sections 1601-1603. Grading that would alter any stream on the site such as Shore Acres Creek or the ephemeral drainage ravines on the site cannot be initiated until a Standard Streambed Alteration Agreement is executed between the CDFG and the applicant.

## 2. IMPACTS

### a. Vegetation

(1) General. The proposed project would involve the removal of most of the site's existing vegetation, including over 500 acres of common annual grassland vegetation. The direct loss of this vegetation is not considered significant, but it should be recognized as contributing to a significant, regional cumulative loss of open grassland habitat as associated wildlife range; i.e., a *significant adverse environmental impact*. There would be a loss of some small areas of wetland. Although the amount, type, and quality of these wetlands are limited, any loss of wetland is considered to be a *significant adverse environmental impact*.

(2) Sensitive Plant Species. Several sensitive plant species are known to exist in the general region, but most are restricted to specialized habitats that are not represented on the site. No sensitive plants are present on the site and no significant impacts to such taxa would occur.

### b. Wildlife

(1) General. Construction of the project would result in a minor loss of foraging value for raptors, but the impacts would not be considered significant. A substantial amount of streambed habitat would be filled by the proposed grading of the project. Most of these stream segments have no significant riparian or other biotic value. However, the filling of one area of riparian thicket and the wetland areas shown on Figure 42 would represent a *significant adverse environmental impact*.

(2) Sensitive Wildlife Species. The project would remove over 600 acres of open foraging habitat for birds and small mammals in general, but would not have a significant adverse impact on any sensitive wildlife species or natural communities. No nest sites, outcrops, nest or perch trees, or natural water bodies would be affected, and no indirect impacts to sensitive animal species are expected. Because there is no particularly suitable aquatic habitat on the site, no significant impacts to associated sensitive wildlife species, such as the California tiger salamander, would occur as a result of the project.

c. Sensitive Habitats and Plant Communities

The project would not affect any major wetlands, woody vegetation, or any unusual or highly valuable habitats. It would, however, result in the loss of approximately 3.5 acres of jurisdictional streambed and adjacent wetland areas on the project site. In addition, it would result in the loss (filling) of approximately 0.75 acre of riparian thicket (*Salix, Rosa*) along the northern section of Shore Acres Creek (along with the associated creekbed, banks, plus additional woody vegetation). These combined losses would represent *significant adverse environmental impacts*.

A minor amount of native wildflower vegetation would be lost (mostly on the site's protected north slopes), but this loss would not represent a significant impact to a sensitive plant community, since the native species to be lost are simply scattered small colonies and individuals within the more extensive annual grasses and weeds.

d. Army Corps of Engineers and California Department of Fish and Game Jurisdiction

The project as designed would require filling of Shore Acres Creek, most of the ephemeral drainageways and the wetland areas on the site. Potential state and federal jurisdictional implications of these actions are described below.

(1) USACE. The proposed filling of Shore Acres Creek, the ephemeral drainageways, and other wetland areas would require issuance of a COE Section 404 permit.

(2) CDFG. The filling of the site's perennial and ephemeral creeks as proposed by the project grading plan are subject to CDFG jurisdiction. No project grading in the creek areas can be initiated until a Standard Streambed Alteration Agreement is executed between the CDFG and the applicant.

### **3. MITIGATIONS**

The following section outlines those measures which would be necessary to reduce project impacts on vegetation and wildlife to less than significant levels.

a. Vegetation

(1) General. Cumulative regional losses in wildlife range could not be mitigated to less than significant levels with any substantial project under the city's current general plan provisions for the project site. However, the following measures would help minimize the project contribution to significant cumulative losses of vegetation in the region:

- Complete appropriate revegetation and landscaping (emphasizing native trees, shrubs, and grasses) for heavily disturbed common areas;

- Maintain or restore the site's riparian and wetland areas, within the proposed parks and other appropriate onsite open space areas.

(2) Sensitive Plants. Since there is no evidence of any sensitive plants being present on the project site, no specific mitigation is required. However, opportunities exist in park, open space, and/or runoff detention areas within the project to re-establish native flora, including some of the rare species which are known to flourish in the project region.

b. Wildlife

(1) General. See mitigation under c. below.

(2) Sensitive Wildlife Species. Since no sensitive wildlife species or habitats have been identified on the site. No specific mitigation is required.

c. Sensitive Habitats and Communities

While the riparian and wetland resources identified on Figure 42 are neither extensive or of particularly high quality, any loss of riparian or wetland habitat would constitute a significant impact. The following mitigations are warranted to reduce project impacts on riparian and wetland resources to less than significant levels:

- To reduce project impacts on the habitat provided by the site to less than significant levels, the project should be redesigned to preserve the identified corridor of riparian and other vegetation along the northern section of Shore Acres Creek between the PG&E transmission line and Highway 4 from grading and development. Similarly, the area supporting riparian herbs and grasses in the northwest corner of the site (as shown on Figure 42) should also be preserved within the project design.
- Alternatively, this riparian and wetland habitat area must be recreated on the project site in other designated protected open space areas such as the community park/detention basin area. Such replacement mitigation should create new riparian habitat and wetlands where they do not currently exist on at least a 1:1 ratio. All riparian and wetland vegetation should be replaced on at least a 3:1 in-kind basis using native species. Such a replacement mitigation plan must be approved by the Department of Fish and Game.<sup>1</sup>

---

<sup>1</sup>Letter from Brian Hunter, Region Manager, Region 3, Department of Fish and Game, to Randy Jerome, City of Pittsburgh, August 7, 1991. The DFG has recommended that the project be redesigned to avoid all impacts to creeks, ponds, or wetland areas. With respect to creeks, the DFG recommends that a 100-foot buffer measured from the top of the bank of each creek be established to protect the creek and its vegetation and to provide a travel corridor for wildlife. The DFG recommends that no roads, buildings, or yards should be constructed within this buffer.



- The wet meadow shown on Figure 42 would be displaced by the eastbound offramp of the new freeway interchange. This wetland loss should be mitigated through offset wetland creation elsewhere on the site. Alternately, this wetland loss could be compensated through participation in a larger, regional wetland restoration project in a more remote area of the region.

d. Army Corps of Engineers and California Department of Fish and Game

(1) USACE. As a condition of development plan approval, the applicant should be required to submit with the final map a written determination from the USACE that the project has complied with USACE Section 404 procedures. This procedure may require preservation of some or all of the existing creekbeds on the site, which may require project redesign.

(2) CDFG. As a condition of development plan approval, the applicant should be required to submit with the final map a written determination from the CDFG that the proposed actions do not fall within CDFG jurisdiction, or that a Standard Streambed Alteration Agreement has been executed between the CDFG and the applicant.



---

## H. MUNICIPAL SERVICES

---

This EIR chapter describes project impacts and mitigation needs with respect to municipal service provisions in the City of Pittsburg, including schools, water, sewer, police and fire protection, parks and recreation, and library services.

### 1. SCHOOLS

#### a. Existing Setting

The project site is located within the boundaries of the Mount Diablo Unified School District (MDUSD). Elementary school students (grades K-5) from the area attend Bel Air Elementary School (located at 663 Canal Road), Shore Acres Elementary School (located at 351 Marina Road), or Rio Vista Elementary School (located at 611 Pacifica Avenue). Junior high school students attend Riverview Intermediate School (grades 6-8) located at 205 Pacifica Avenue in Pittsburg. High school students from the area are transported to Concord to attend Mount Diablo High School at 2450 Grant Street in Concord.

The District has stated that the elementary school age children from the project may attend any one of the three elementary schools in the area or be distributed to more than one school. Elementary school boundaries for the project have yet to be determined by the District.

(1) School Enrollment and Capacities. The current enrollment capacity of each school in the project vicinity is shown in Table 31. The table indicates that all of the District schools serving the project area are currently operating within their capacity. Bel Air Elementary School, Rio Vista Elementary School, and Shore Acres Elementary School are operating at 94, 98, and 81 percent of capacity, respectively. Riverview Middle School currently operates at 90 percent of capacity and Mount Diablo High School currently operates at 59 percent of capacity.

The Mount Diablo Unified School District recently conducted a study which concluded that a new elementary school would be needed in the District in the near future to accommodate

anticipated future enrollment increases in elementary school age children.<sup>1</sup> To date, there are no specific plans to construct a new elementary school.<sup>2</sup>

(2) Current Impact Fee Structure. The District anticipates that needed future school facility improvements will be funded in part by existing development impact fees on residential and commercial development. The current fee structure is \$0.75 per square foot of residential space, and \$0.25 per square foot of commercial space. The fees are the result of an agreement between the Building Industry Association (BIA) and the School District.<sup>3</sup> The agreement and current fee schedule will remain in effect until 1994.

The Mount Diablo Unified School District estimates that only a small portion of the total estimated cost of new facility needs would be covered by existing impact fees. The District is currently conducting a study to determine whether the present fee structure adequately mitigates development-generated school impacts.

b. Project Impacts

Estimated project enrollment impacts on MDUSD elementary schools are shown in Table 32. Assuming project elementary school age enrollment increases are evenly allocated between the three existing elementary schools and no other significant changes in enrollment occur, the additional project students would result in over-enrollment at each school. Under similar assumptions, the additional enrollment attributable to the project would also result in over-enrollment at Riverview Middle School. Based on the projected enrollment capacity impacts, the project could be expected to have *significant adverse impact* on the adequacy of local elementary and middle school enrollment.

Estimated project impacts on Mount Diablo High School are also indicated on Table 32. The District anticipates that the project would generate an additional 559 high school students. As shown in Table 32, these additional students would raise the enrollment to approximately 70 percent of capacity, assuming no significant change in current enrollment characteristics.

Project-generated enrollment figures were calculated using student yield factors provided by the school districts. The method employed by the school districts to determine these yield

---

<sup>1</sup>Paul E. Allen, Associate Superintendent, Mount Diablo Unified School District, letter to Wagstaff and Associates, March 30, 1992.

<sup>2</sup>Paul E. Allen, personal communication, April 29, 1992.

<sup>3</sup>Ibid.

Table 31  
SCHOOL ENROLLMENT CAPACITY--EXISTING

|                         | <u>Current Enrollment</u> | <u>Capacity</u> | <u>Remaining Capacity</u> |
|-------------------------|---------------------------|-----------------|---------------------------|
| Bel Air Elementary      | 604                       | 645             | 41                        |
| Rio Vista Elementary    | 601                       | 615             | 14                        |
| Shore Acres Elementary  | 549                       | 675             | 126                       |
| Riverview Middle School | 669                       | 740             | 71                        |
| Mt. Diablo High School  | 1,099                     | 1,860           | 761                       |

SOURCE: Mount Diablo Unified School District, 1992

Table 32  
SCHOOL ENROLLMENT CAPACITY--PROJECT IMPACTS

|                         | <u>Project-Generated Enrollment</u> | <u>Existing + Project Enrollment</u> | <u>Anticipated Capacity</u> | <u>Remaining Capacity</u> |
|-------------------------|-------------------------------------|--------------------------------------|-----------------------------|---------------------------|
| Bel Air Elementary      | 141 <sup>1</sup>                    | 745                                  | 645                         | (-100)                    |
| Rio Vista Elementary    | 141 <sup>1</sup>                    | 742                                  | 615                         | (-127)                    |
| Shore Acres Elementary  | 141 <sup>1</sup>                    | 690                                  | 675                         | (-15)                     |
| Riverview Middle School | 173                                 | 842                                  | 740                         | (-102)                    |
| Mt. Diablo High School  | 202                                 | 1,301                                | 1,860                       | 559                       |

SOURCE: Mount Diablo Unified School District, 1992

<sup>1</sup> Assumes one third of project students attend each elementary school.

factors involves using actual enrollment generation data from similar developments in the vicinity.<sup>1</sup>

c. Project School Impact Mitigation

Assuming little change in current local school capacity conditions between now and project buildout (i.e., no new school construction), the project alone would result in over-enrollment at all elementary and middle schools in the District attended by project residents. Project adverse impacts on school enrollment would be partially mitigated through the existing school impact fee requirements (\$0.75 per residential square foot). According to the District, application of the current impact fee is expected to have minimal effect in covering the full cost of the school expansion needs generated by the project and by cumulative residential growth in the area.

To mitigate the project contribution to this cumulative impact on school enrollment, approval of the project should be conditioned upon project commitment to fair share participation in a future added capital facilities program to be established by Mount Diablo Unified School District.

Project participation in the added capital facilities program should include the following:

- (1) Payment of existing school impact fees;
- (2) Payment of additional school impact fees established by the School District after the expiration of the existing fee agreement in 1994 so long as these additional fees are within state-mandated limits and have been adequately justified; and
- (3) Establishment of a Mello-Roos District for the project to fund the project's fair share of the cost of necessary school improvements which are not covered by the fee programs described above.

The applicant's participation in the above listed mitigation requirements could be reduced to an extent mutually agreed upon by the city, the school district, and the applicant, in exchange for project participation in direct financing or construction of a new elementary school on the site.

---

<sup>1</sup>There were no high school enrollment increases from the only townhouse development in the project vicinity. EIR authors believe this fact may not accurately reflect potential project-generated high school enrollment increases from townhouses. Thus, to estimate the high school enrollment impacts of the project townhomes, the EIR authors have applied an enrollment multiplier that represents a median between recorded high school enrollment data for apartments and for single-family homes.

## 2. WATER

### a. Setting

1. Project Site Water Service. There currently is no municipal water service on the site. Water is supplied to the existing farm complex by an existing private well.

2. Planned Water Service. The City of Pittsburg completed a Water Master Plan Update for the Southwest Hills Region in 1990. This plan addresses future water service within the 1,499-acre Southwest Hills area (Annexation 109), including the project site. The planned expansion of the city's existing water system has been designed to serve approximately 5,300 residential units in five water pressure zones (i.e., Zones II, III, IV, V, and VI), and would provide approximately 1.6 million gallons of water per day to these new residential consumers.

*Site Distribution System.* The city's Water Master Plan Update indicates that water would be distributed throughout the site via new water mains on Leland Road, and project streets A (Willow Pass extension), B, and C. A total of 34,714 linear feet of 16-inch pipe and 3,805 linear feet of 12-inch water pipe would be located within the project site. The project distribution system would also require the construction of two million-gallon reservoirs to serve Zone IV, a pump station to serve Zone V, a pump station to serve Zone VI, and a fire pump to serve Zone VI.

*Water Supply.* The city's Water Master Plan Update anticipates that the project would require an average of approximately 1.14 million gallons per day and an average peak hour demand of 4.72 million gallons per day.<sup>1</sup>

Water supply for the project would be provided by the City of Pittsburg, which obtains its raw water from the Contra Costa Water District. The project site was annexed to the Contra Costa Water District concurrently with the Southwest Hills annexation to the city in 1990. The city's water treatment plant recently expanded its capacity from 16 MGD to 32 MGD, and additional storage capacity has been provided through the recent construction of a 2.5 million gallon raw water storage reservoir. The city has determined that these improvements ensure more than adequate water supply for the entire Southwest Hills area.<sup>2</sup>

---

<sup>1</sup>Wagstaff and Associates; John Carollo Engineers, Water Master Plan Update, Southwest Hills Region, May 16, 1990.

<sup>2</sup>Exhibit "D" "Plan for Providing Services," City of Pittsburg Resolution No. 90-7614.

**b. Impacts**

The proposed project would require the construction by the applicant of the water distribution system planned for the site in the city's Water Master Plan Update. The water service requirements of the project as proposed appear to be consistent with the needs anticipated in the Water Master Plan Update for the Southwest Hills Region.

- r Anticipated City advocacy of its existing commitments to water conservation would also tend  
r to reduce the amount of water consumed by the project. These include the City's  
r Landscape Water Conservation Ordinance which addresses use of water in landscaping,  
r and the City's state-mandated Water Shortage Contingency Plan which was adopted in  
r February of 1992.

**c. Mitigations**

Implementation of the following measures would reduce project-related impacts on water service to less than significant levels:

- The project should be responsible for construction of all improvements listed on page 4 of the city's Water Master Plan Update.<sup>1</sup> The preliminary anticipated total cost of these improvements in 1990 dollars is \$7,290,000. All final water system design specifications and constructed improvements would be subject to the approval of the City of Pittsburg. The specifications shall include adequate provisions for maintenance access to these facilities.
- The project should pay its fair share of the cost of recent water treatment plant expansion and raw water storage facilities.
- r ■ The overall project landscape plan which is described on page 73 of this SEIR should  
r be revised and refined to include drought-tolerant plant species whenever possible.  
r Future subarea landscape plans and guidelines for Villages A, C, D, and M should  
r include similar provisions.

**3. SEWER SERVICE**

**a. Setting**

(1) Existing Sewer Service. No municipal sewer service is currently provided to the site. The existing farm complex is served by a private onsite septic system.

---

<sup>1</sup> John Carollo Engineers, Water Master Plan Update, Southwest Hills Region, May 16, 1990.



(2) Existing Sewer Collection System. Sanitary sewer service in the City of Pittsburg is provided by both the city and the Delta Diablo Sanitation District (DDSD). The city owns and maintains the local sewage collection system; the DDSD owns and maintains the regional interceptors and the sewage treatment plant. The closest existing trunk line to the site is an eight-inch line on West Leland Road serving the Oak Hills project.

(3) Proposed Sewer Improvements. A series of improvements to the West Pittsburg sewer system is planned by the city and the DDSD. These improvements, which are described in the city's recent West Pittsburg Sewer Model Update,<sup>1</sup> include the extension of new mains

---

<sup>1</sup>Camp Dresser & McKee, Inc., West Pittsburg Sewer Model Update, 1990.



from the existing West Pittsburg Interceptor up Port Chicago Highway to Willow Pass Road, under Highway 4, and into the project.

**b. Impacts**

Based on wastewater generation rates cited in the 1990 West Pittsburg Sewer Model Update (WPSMU) the 2,938-unit project would generate 567,610 gallons per day of wastewater. Accommodation of this flow would require construction of the planned collection system from the project to the existing West Pittsburg Interceptor, as anticipated by the DDSD in its 1990 WPSMU.

The city has determined that this additional wastewater flow is well within the existing capacity of the DDSD treatment plant.<sup>1</sup>

**3. Mitigation**

In order to adequately address project-related impacts on the local sewage collection and treatment system, the project would be required to pay the sewer development fees for DDSD Zone 1 as per the DDSD Schedule of Fees identified in the WPSMU.<sup>2</sup>

Applicant completion of a sewer capacity study would also be necessary to determine the size of the project sewer extension lines and the points of connection to the DDSD main facilities.<sup>3</sup>

**4. POLICE SERVICES**

**a. Existing Setting**

The City of Pittsburg Police Department provides police service to the project vicinity. Services are provided from one central station located at 55 Civic Avenue in Pittsburg. The Police Department currently consists of 67 officers and is in the process of filling five vacant positions. The department has 19 marked patrol cars.

---

<sup>1</sup>Exhibit "D" "Plan for Providing Services," City of Pittsburg Resolution No. 90.7614.

<sup>2</sup>Although the project is actually located in DDSD Zone 2, it would discharge into Zone 1 sewers; therefore, the applicant would be required to pay fees as per the DDSD Schedule of Fees for Zone 1.

<sup>3</sup>May 6, 1992 memorandum from Alredo Hurtado, Assistant Civil Engineer to Nasser Shirazi, Assistant City Engineer, City of Pittsburg.

The city is divided into four quadrants, or "beats". The north/south division line is Highway 4 and the east/west division line is Railroad Avenue. The project site is within the Police Department's "Beat 3," i.e., the Southwest Quadrant. In addition, the department employs "float units" which roam within two quadrants. There are between 12 to 16 float officers within the entire city, evenly assigned north and south of Highway 4. Within the north/south areas, the float units are assigned based frequency of calls for service and patterns of criminal incidents.

Beat 3 is staffed by one beat officer per shift. Beat 3 may also, at any given time, have a maximum of eight additional float officers in the quadrant. For general police service manpower and facilities needs planning purposes, a service standard of 1.5 officers per 1,000 population is considered by the Department to be an "acceptable ratio."<sup>1</sup> This service standard can vary in areas of the city depending on the type of land use (i.e., residential, commercial, industrial), as well as the socioeconomic level of the residents.<sup>2</sup> In areas containing residential uses serving middle-income residents, a ratio of 1.3 officers per 1,000 population is considered acceptable by the Department.<sup>3</sup>

Due to recent new development in the city and the expanded city limits, the Department is currently re-evaluating its beat boundaries.

Currently, the average police response time for non-emergency calls within Beat 3 is estimated to be approximately 20 to 30 minutes.<sup>4</sup> The response time can vary depending upon the type of service needed and the type of incident involved. Responses to emergency calls are estimated to be approximately three to five minutes.<sup>5</sup>

b. Impacts

The project would result in a significant increase in the residential population to be served by the Pittsburg Police Department. The proposed project would result in an increased frequency and number of calls resulting from: (1) increased traffic leading to higher rates of traffic accidents; (2) larger commercial areas in response to new residential development; (3) a greater number of domestic disputes, disputes between neighbors, and noise

---

<sup>1</sup>Lieutenant William Hendricks, Pittsburg Police Department, written communication, March 31, 1992.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid.

<sup>4</sup>Hendricks, March 31, 1992.

<sup>5</sup>Ibid.

complaints due to the increased numbers of residences. If the project is constructed as proposed, the police department would expect longer than current typical Beat 3 response time to both emergency and non-emergency calls in the extended project area, a *significant adverse impact*. As a result, the Police Department estimates that cumulative impact of the proposed San Marco project and other proposed and anticipated residential projects in the area (see Table 3 in section IV.A of this EIR) would necessitate a separate, new, fully staffed beat within three years.

During the next five years, the department expects to attempt to maintain the current standard of 1.5 sworn offices per 1,000 population, and 1.3 officers per 1,000 population thereafter. Non-sworn staffing standards are currently set at 0.6 staff person per 1,000 population. At full buildout, the project is estimated to yield a population increase of 7,730 persons.<sup>1</sup> To meet these personnel per capita standards, the project alone would necessitate the hiring of approximately ten additional sworn officers and five non-sworn personnel between first occupancy and buildout. This project impact on city police officer-to-population needs is considered to be *significant*.

c. Mitigation

According to the Police Department, the creation of a new separate beat is warranted to accommodate the response time needs of the project and anticipated cumulative residential development in the southwest area to less than significant levels. The present four-beat structure is currently undergoing re-evaluation. However, this evaluation is more likely to result in the realignment of current beat boundaries, rather than the creation of additional beats. The Police Department anticipates that the creation of a new, fully staffed, separate southwest area beat would reduce project and cumulative impacts on police response time and citywide service levels to a less than significant levels. New staffing should be funded by revenue flow increases to the city's general fund due to anticipated cumulative southwest area growth.

Several additional project measures have also been recommended by the Police Department to improve crime prevention and further reduce project impacts on the provision of police service. These measures include: (1) provision of adequate, well lighted, accessible and non-isolated parking areas and visible entries for all multi-family structures; (2) provision of streets which are consistent with existing standards and do not vary in width; and (3) avoidance of developed open space (i.e., parks) which abut side and rear yards of residential dwellings.

---

<sup>1</sup>For computation and discussion, refer to section IV.B (Population and Housing) of this EIR.

## 5. FIRE PROTECTION SERVICES

### a. Existing Setting

The Riverview Fire Protection District (RFPD) provides fire protection and fire suppression services to the cities of Pittsburg, Antioch, and portions of unincorporated Contra Costa County. RFPD Station 86, located approximately 1.5 miles from the project site at 3000 Willow Pass Road in the unincorporated West Pittsburg area, is the closest District fire station to the project. The primary emergency response route from Station 86 to the project site would be via Willow Pass Road, crossing State Highway 4 onto project Street A (the Willow Pass Road extension). Backup fire protection service to the project vicinity is provided by Station 84 located at 200 East Sixth Street in Pittsburg, Station 85 located at 2555 Harbor Street in Pittsburg, or any of four RFPD stations in Antioch. The Pittsburg General Plan was amended in 1991 to provide for a proposed additional fire station on West Leland Road across from John Henry Johnson Parkway, approximately two miles east of the project site.

The RFPD is currently operating at capacity, based on its current service area and number of calls.<sup>1</sup> The Insurance Service Office (ISO) rating for the overall RFPD is four on a scale of one to ten, ten representing the most hazardous condition. The District rarely receives calls from the project vicinity at this time.

### b. Project Impacts

(1) Response Time Impacts. The closest northern portion of the project site is located within the District's one and one-half mile response contour standard; however, the estimated response time to the southernmost portion of the site is 12 minutes, which is well beyond the acceptable response time standard of five minutes established by the District.<sup>2</sup> Response time from Station 84, the RFPD station which would provide immediate backup staffing to any fire in the project vicinity, would be 18 minutes.

The project would result in a greater residential population to be served in an area which has inadequate response times. This situation would represent a *significant adverse impact*. In addition, the project would join Leland and Avila Roads, creating possible confusion for the public and emergency service vehicles and related potential public safety impacts. This potential impact on emergency service provision and public safety would represent a minor impact.

---

<sup>1</sup>Kevin McCarthy, Fire Inspector, Riverview Fire Protection District, written communication to Wagstaff and Associates; April 28, 1992.

<sup>2</sup>McCarthy; April 28, 1992.

(2) Capital Improvement and Operation Impacts. Project impacts on the adequacy of RFPD facilities would be offset in part through the required payment of a *Fire Facilities Element Fee* of \$235 per dwelling unit. The Fire Facilities Fee total eventually generated by the 2,938-unit project would be approximately \$690,430 at buildout. These funds could be applied towards project-related capital improvement needs (station site, station construction, and fire apparatus). However, the anticipated total would cover only approximately 35 percent of the project's fair share of the estimated \$2,000,000 cost of constructing a new fire station.<sup>1</sup> Until other additional methods of financing a new station are implemented, the project would result in a *significant adverse impact* on the adequacy of fire protection capital facilities.

The project would also generate funds for annual operating costs of fire services through District collection of an annual *Benefit Assessment Fee* of \$29 per residence, or \$85,202 per year from the project at buildout. This fee total is expected to represent approximately 15 percent of the annual operating cost of a new station. Until other additional methods of financing annual operation of a new fire station closer to the project are also implemented, the project would result in a *significant adverse impact* on the adequacy of the District operating budget and level of service.

c. Mitigation

The following mitigation program has been developed in coordination with the Riverview Fire Protection District. Implementation of all the measures listed below would reduce identified project fire protection impacts to less than significant levels.

(1) Response Time Impacts. A new fire station must be constructed at a location to be established in consultation with the District which will meet the District's response time standard. This location may be on the project site or elsewhere within the response time standard. The project's contribution toward the construction of this fire station would be collected via the Fire Facilities Element Fees and those additional charges described below as determined in consultation with the RFPD.

In addition, the joining of Avila Road and Leland Road routes, should be clearly marked, with these markings placed in a location clearly visible to motorists.

(2) Personnel and Equipment Impacts. As a condition of approval, the project should be required to provide, to the satisfaction of the RFPD, its fair share of those local fire capital improvement and operating expenses which would not be adequately covered by *Fire Facilities Element Fees* or *Benefit Assessment Fees* from the project. No project homes should be occupied until adequate fire protection and suppression services are in place to the satisfaction of the District.

---

<sup>1</sup>Ibid.

(3) Additional Measures. The fire district has also recommended the following additional specific provisions to ensure adequate fire protection and fire suppression services for the project:

- Water storage and pressure should be provided for the project as required by the Uniform Fire Code (UFC) Appendix Chapter III;
- Fire sprinkler protection should be provided in all project structures, including single-family homes;
- Fire-retardant roofing should be required for all project structures, including single-family homes; and
- Adequate emergency vehicle access should be provided to all project homes, as required by the UFC and the Fire District.

## 6. PARKS AND RECREATION

### a. Setting

Parks and recreation services in the project vicinity are provided by the City of Pittsburg Leisure Services Department. The Department operates a system of neighborhood- and community-serving facilities. The District's neighborhood parks are intended to serve the needs of an area within a one-half mile radius of the park and are usually primarily oriented towards the recreational needs of children. Community Parks are meant to serve an area within a three-mile radius of the park and generally provide facilities which are meant to serve all age groups. A community park may also serve as a neighborhood park for the area where it is located.

The city's existing public recreation facility closest to the project site is Stoneman Park, a 300-acre community park located off of Leland Avenue approximately two miles east of the project. Stoneman Park contains passive recreation areas, picnic areas, a soccer field, and a rifle range. In addition, a new five-acre park has been proposed as part of the planned Oak Hills South development, approximately one-half mile from the project site (see Figure 9), but that project has not yet received city approval.

The closest existing non-city park in the area is Ambrose Park, an 18-acre park on Memorial Way in the unincorporated West Pittsburg area. This park is operated by the Ambrose Park and Recreation District.

The Pittsburg General Plan Parks and Recreation Element sets a standard of two acres of community park and three acres of neighborhood park per 1,000 population. Based on this standard, the Pittsburg General Plan projects a need for 25 acres of neighborhood parks in the Southwest Hills area. To achieve this standard, the city has enacted a *Park Dedication*



*Ordinance* to assist in the acquisition and improvements of neighborhood and parks.

**b. Impacts**

To meet the city's park standards, the estimated project-generated population of 7,730 people (see section IV.B.2 of this EIR) would require provision of 15.5 acres of additional community park and 23 acres of additional neighborhood park.

The proposed project development plan includes a 36-acre community park which would be used as both a passive recreation area and as a detention basin during heavy rainfalls. A trail system is also proposed within the community park and along an existing PG&E transmission line easement.

The project also proposes two smaller "community recreation areas" totalling eight acres which would contain active recreational facilities including several ball fields and courts, and three "village parks" of one acre each. Based upon the project proponent's description of these various facilities, these latter "community recreation areas" and "village parks" are assumed to meet the definition of neighborhood parks.

The proposed 36-acre community park would exceed the city's community park dedication requirement for the project (15.5 acres). The proposed community recreation areas and village parks (which total 11 acres) would not technically meet the city's neighborhood park dedication requirement of 23 acres, or the General Plan's projected 25 acres of neighborhood parks in the Southwest Hills Area. However, the project plan does provide 20.5 extra acres of community park. In addition, all project homes would be located within one-half mile of a community recreation area, a village park, or a community park, meeting the city's standard for distance of homes from neighborhood parks. Consequently, it appears that the project plan would ultimately provide sufficient park facilities to meet the needs of its anticipated residents. However, if these proposed facilities are not completed in a sequence that relates adequately to the needs of project residential phasing, *significant interim impacts* on the adequacy of local parks and recreation facilities could occur.

The project design also includes an internal pedestrian and bicycle trail system. However, trail system design specifics and its relationship to the broader Southwest Hills are have not been specified.

**c. Mitigation**

Assuming that all park and recreation provisions indicated in the preliminary project development plan are constructed as proposed, and are completed in a sequence that relates adequately to the needs of project residential phasing, no significant impacts are anticipated. In order to achieve this result, at least one park facility which is equivalent to a

neighborhood park (5 acres or greater in size) should be constructed with the first three project villages.<sup>1</sup> No other mitigation would be required.

The project trail system design should be refined to provide a continuous pedestrian and bicycle system that interlinks all project villages and provides for future integration into an areawide Southwest Hills trail system.

## 7. LIBRARY SERVICES

### a. Setting

The Contra Costa County Library provides library services to the project vicinity. The County Library consists of 20 branches located throughout the county. The Pittsburg branch (located at 20 Power Avenue in Pittsburg), and the Concord branch located at 2900 Salvio Street in Concord) are the two closest branches to the project site. These two library facilities combined serve an estimated total population of 172,500.

The Pittsburg branch is open 40 hours per week and serves an area with an estimated population of 63,000. This branch has 7,075 square feet of library space containing a collection of 32,726 books, resulting in an average of 0.11 square feet of library floor space and 0.52 books per capita.<sup>2</sup>

The Concord branch is open 42 hours per week and has an estimated service area population of 109,500. The Concord branch has 12,640 square feet containing 73,280 volumes of books, resulting in an average of 0.12 square feet of library floor space and 0.67 books per capita.<sup>3</sup>

There are no current plans to expand the Pittsburg branch. The Contra Costa County Library system has applied for a planning grant on behalf of the Concord library to explore the feasibility of building a new library in the City of Concord.

---

<sup>1</sup>Joel F. Summerhill, Park Planner, City of Pittsburg; May 8, 1992 transmittal to Randy Jerome, Senior Planner.

<sup>2</sup>Rose-Marie Kennedy, Deputy County Librarian, Contra Costa County Library, letter to Wagstaff and Associates, communication, April 16, 1992.

<sup>3</sup>Rose-Marie Kennedy, Deputy County Librarian, letter to Wagstaff and Associates, April 16, 1992.

b. Impacts

(1) Service Area Population. As discussed in section IV.B. of this EIR (Population, Employment, and Housing), the project is expected to result in a population increase of approximately 7,730 residents within the service area of the Pittsburg and Concord library branches. The project population would represent an increase of four and one-half percent in the total population of this two-branch service area. Assuming that 50 percent of the project-generated library demand would use the Pittsburg branch and the other 50 percent would use the Concord branch, the increase in service demand would be approximately six percent for the Pittsburg branch and approximately four percent for the Concord branch. This project-related increase in library demands would represent a *significant adverse impact*.

(2) Square feet of Library Space Per Capita Ratio. Although there is no locally adopted standard of square footage of library floor space per capita, a generally accepted national standard is 0.50 square feet per capita. The existing library floor space per capita ratios for both the Pittsburg and Concord branches are well below this standard, with 0.11 and 0.12 square feet per capita, respectively. Although, the project alone would not create the need for a new library branch, it would increase the service area population. The estimated additional 3,865 residents in each branch's service area would lower the square footage ratio to 0.10 for the Pittsburg branch and 0.11 for the Concord branch. This effect on an already strained library system would represent a *significant adverse impact*.

(3) Books Per Capita Ratio. The Contra Costa County Library has a service goal of two books per capita.<sup>1</sup> With a current collection of 32,726 volumes, the Pittsburg branch has a current book per capita ratio of 0.52, far below the stated goal of two books per capita. The addition of 3,865 residents using the Pittsburg branch would further lower the book per capita ratio to 0.49. The Concord branch, with 73,280 volumes, has a current books per capita ratio of 0.67. The addition of 3,865 residents using this branch would lower the ratio to 0.65 books per capita. These project-related reductions in the books per capita would represent a *significant adverse impact* on the adequacy of library services in the project vicinity.

c. Mitigations

(1) Service Area Population. A project contribution of additional library facilities equivalent to the increased demand generated by the project would reduce project impacts to an insignificant level. This project contribution could include funding for additional books and additional library space to meet the accepted standard described under measures (2) and (3) below.

---

<sup>1</sup>Rose Marie Kennedy, April 16, 1992.

Alternately, the provision of service facilities which could directly serve the project-generated population, such as a bookmobile, may also be considered.

(2) Square feet of Library Space Per Capita Ratio. With the project expected to ultimately add approximately 7,730 residents to the library service areas, project contribution of a fee adequate to construct 3,865 square feet of added library space in the form of an addition to an existing branch or a new library branch prior to project buildout would meet the standard of 0.5 square feet per capita. This action would reduce the impact of the project on county library space needs to a less than significant level.

(3) Books Per Capita Ratio. With the project expected to generate 7,730 residents, a project contribution of a total of 15,460 volumes of books to a new library branch or 7,730 volumes to each branch would meet the library's goal of two volumes of books per capita. This action would reduce the impact of the project on county library book needs to a less than significant level.

---

## I. NOISE

---

The following section addresses the project impacts related to environmental noise. The section includes a description of the existing noise setting at the project site (including a discussion of the fundamentals of environmental acoustics and relevant regulations); a description of related project impacts (e.g., impacts of project construction activities on the local noise environment, and of project-generated traffic over the long term on noise levels, along sensitive local travel routes; and project-generated long-term traffic increases on existing land uses, and impacts of future Highway 4 traffic noise levels on project homes); and an identification of measures warranted to mitigate identified significant impacts.

### 1. SETTING

#### a. Fundamentals of Acoustics

Noise is defined as unwanted sound. The effects of noise can range from interference with sleep, concentration, and communication, to physiological stress, and, at higher noise levels, to hearing loss.

Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing. Decibels and other related technical terms are defined in Table 33.

(1) Human Sensitivity to Noise. The method commonly used to quantify environmental noise involves measurement of all frequencies of sound, with an adjustment to reflect the fact that human hearing is less sensitive to low and high frequencies than to midrange frequencies. This measurement adjustment is called "A" weighting. A noise level so measured is called an A-weighted sound level (dBA).<sup>1</sup> Examples of typical A-weighted noise levels in the environment and industry are provided in Table 34.

Environmental noise fluctuates in intensity over time. Therefore, time-averaged noise level computations are typically used to quantify noise levels and determine impacts. The two average noise level descriptors that are most commonly used are  $L_{dn}$  and CNEL.  $L_{dn}$ , the

---

<sup>1</sup>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.

Table 33  
**DEFINITIONS OF ACOUSTICAL TERMS**

---

| <b>Term</b>                                        | <b>Definitions</b>                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Decibel, dB</b>                                 | 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 pressure, which is 20 micropascals (20 micronewtons per square meter).                                                                                                                                                                              |
| <b>A-Weighted Sound Level, dB</b>                  | 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. All sound levels in this report are A-weighted. |
| <b>Equivalent Noise Level, <math>L_{eq}</math></b> | The average A-weighted noise level during the measurement period.                                                                                                                                                                                                                                                                                                                      |
| <b>Community Noise Equivalent Level, CNEL</b>      | 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 in the night between 10:00 pm and 7:00 am.                                                                                                                                                    |
| <b>Day/Night Noise Level, <math>L_{dn}</math></b>  | 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.                                                                                                                                                                                                                          |
| <b>Ambient Noise Level</b>                         | The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.                                                                                                                                                                                                                                                         |
| <b>Intrusive</b>                                   | 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.                                                                                               |

---

SOURCE: Illingworth & Rodkin, Inc.

**Table 34**  
**TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY**

| <u>At a Given Distance<br/>From Noise Source</u> | <u>A-Weighted<br/>Sound Level<br/>in Decibels</u> | <u>Noise Environments</u>                   | <u>Subjective<br/>Impression</u> |
|--------------------------------------------------|---------------------------------------------------|---------------------------------------------|----------------------------------|
|                                                  | 140                                               |                                             |                                  |
| Civil Defense Siren (100')                       | 130                                               |                                             |                                  |
| Jet Takeoff (200')                               | 120                                               |                                             | Pain Threshold                   |
|                                                  | 110                                               | Rock Music Concert                          |                                  |
| Pile Driver (50')                                | 100                                               |                                             | Very Loud                        |
| Ambulance Siren (100')                           |                                                   |                                             |                                  |
|                                                  | 90                                                | Boiler Room                                 |                                  |
| Freight Cars (50')                               |                                                   | Printing Press Plant                        |                                  |
| Pneumatic Drill (50')                            | 80                                                | In Kitchen With Garbage<br>Disposal Running |                                  |
| Freeway (100')                                   |                                                   |                                             |                                  |
|                                                  | 70                                                |                                             | Moderately Loud                  |
| Vacuum Cleaner (10')                             | 60                                                | Data Processing Center                      |                                  |
| Department Store                                 |                                                   |                                             |                                  |
| Light Traffic (100')                             | 50                                                | Private Business Office                     |                                  |
| Large Transformer (200')                         |                                                   |                                             |                                  |
|                                                  | 40                                                |                                             | Quiet                            |
| Soft Whisper (5')                                | 30                                                | Quiet Bedroom                               |                                  |
|                                                  | 20                                                | Recording Studio                            |                                  |
|                                                  | 10                                                |                                             | Threshold of Hearing             |
|                                                  | 0                                                 |                                             |                                  |

SOURCE: Illingworth & Rodkin, Inc.

day-night average noise level, is the 24-hour noise intensity average, with a ten dBA "penalty" added for nighttime noise (10 PM to 7 AM) to account for the greater human sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to  $L_{dn}$ , but adds a five dBA penalty to evening noise (7 PM to 10 PM). One way of anticipating a person's subjective reaction to a new noise is to compare the new noise with the existing noise environment to which the person has become adapted, i.e., the so-called "ambient" noise level.

With regard to increases in A-weighted noise level, knowledge of the following relationships will be helpful in understanding this EIR chapter:

- Except in carefully controlled laboratory experiments, a change of one dBA cannot be perceived.
- Outside of the laboratory, a three dBA change is considered a just-perceivable difference.
- A change in noise level of at least five dBA is required before any noticeable change in community response would be expected.
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

**b. Local Noise Compatibility Standards and Guidelines**

The *Noise Element* of the City of Pittsburgh's General Plan contains policies for evaluating the compatibility of proposed land uses with the noise emanating from major noise sources. The policies pertinent to this project are:

- (1) *Require noise attenuation programs for new developments exposed to noise above normally acceptable levels which include measures to shield sensitive uses from noise sources. Encourage noise attenuation programs which avoid visible soundwalls where practical. (Policy D, p.76.)*
- (2) *Require an acoustic study for all proposed projects that would have noise exposure greater than normally acceptable. (Policy G, p.76.)*

Note: *The Noise Element defines a "normally acceptable" sound level for residential development to be an outdoor noise level not greater than 60 dB. State law requires that the  $L_{dn}$  in habitable rooms of new multi-family housing development attributable to exterior noise sources not exceed 45 dB. The City of Pittsburgh applies this standard to all types of housing.*

- (3) *Require construction of soundwalls for new development where noise mitigation to acceptable levels by other means is not practical. Require that the effects of the*



*construction of soundwalls on noise levels at other areas be considered and taken into account in the design and location of soundwalls. (Policy I, p.76.)*

c. Existing Onsite Noise Environment

The noise environment on the site is currently dominated by traffic noise emanating from Highway 4. After the planned improvements to Highway 4 and the project are completed, noise levels along the project segment of the corridor would be much different than they are today. The difference would result from the proposed grading of the project site, and the proposed widening and raising of the highway. Because future noise exposure on the site will be so different than it is today, existing noise measurements were not made.

d. Future Noise Environment

(1) Highway Capacity/Anticipated Volumes. In the future, Highway 4 will be elevated 25 to 30 feet above the grade of the existing highway past the site. Highway 4 will also be widened to accommodate three eastbound and four westbound lanes past the site, plus a new BART line in the highway median. Noise modeling has been performed by Illingworth & Rodkin, the EIR acoustical consultants, to calculate future noise exposure on the proposed San Marco site. The modeling has taken into account the future alignment and profile of Highway 4 based on Caltrans plans dated November 22, 1991; the proposed grading of the San Marco site shown on the project Tentative Map and Grading Plan, dated May 1990; and future traffic volume, truck percentages, and speeds taken from the Draft Subsequent Environmental Impact Report, Widening and Lowering of Highway 4 Between Willow Pass Road in Concord and Bailey Road in Pittsburg, prepared for the California Department of Transportation in April, 1991 by Woodward Clyde Consultants.

The Caltrans "Sound 32" noise prediction model was used to project future traffic noise levels. The peak traffic capacity of Highway 4 was provided by Caltrans and was assumed to be 1,800 vehicles per lane per hour for a total capacity of 7,200 vehicles in each direction east of Willow Pass Road. West of Willow Pass Road, there will be an additional lane which will allow for a peak traffic capacity of 9000 vehicles in each direction. The vehicles were assumed to travel at an average speed of 55 mph. Again based on Caltrans data, approximately 3.3 percent of the traffic volume west of Willow Pass Road is anticipated to be heavy trucks and one percent is anticipated to be medium trucks. East of Willow Pass Road, the heavy truck percentage is anticipated to be 5.1 percent and the medium truck percentage is anticipated to be 2.7 percent.

These traffic volume assumptions are conservative and represent a "worst case" picture of the future noise environment for EIR purposes. It is unlikely that the freeway could sustain these assumed volumes at an average speed of 55 mph. However, the sensitivity of the traffic noise model is such that even if the traffic volume assumptions were reduced by as much as 40 percent, the computed noise levels would only go down by two decibels.

Recent measurements along Highway 4 have shown that, typically, the average noise level ( $L_{dn}$ ) is about one decibel higher than the noisiest hour  $L_{eq}$  (see Table 33 for the definition of  $L_{eq}$ ). However, since the "Sound 32" traffic noise prediction model calculates the noisiest hour  $L_{eq}$  for a "worst case" condition, it has been assumed in this EIR analysis that the  $L_{dn}$  and the "worst case" noisiest hour  $L_{eq}$  would be approximately equal.

The EIR noise modeling has also taken into account traffic volumes on the on- and off-ramps to Willow Pass Road, and the noise levels along the Willow Pass extension and Leland Road, based on projected traffic volumes provided by CTG, the EIR traffic engineer. The traffic volume of the off-bound ramp from eastbound Highway 4 to Willow Pass Road was assumed to be 1,200 vehicles per hour traveling at 35 mph, and the on-ramp traffic volume from Willow Pass Road to eastbound Highway 4 was assumed to be 2,280 vehicles per hour traveling at 35 mph. The Willow Pass extension was assumed to have a peak hour volume of 1,735 vehicles per hour traveling at 35 mph. Leland Road was assumed to have a volume of 2,255 vehicles per hour traveling at 35 mph east of Willow Pass Road and 880 vehicles per hour traveling at 35 mph west of Willow Pass Road.

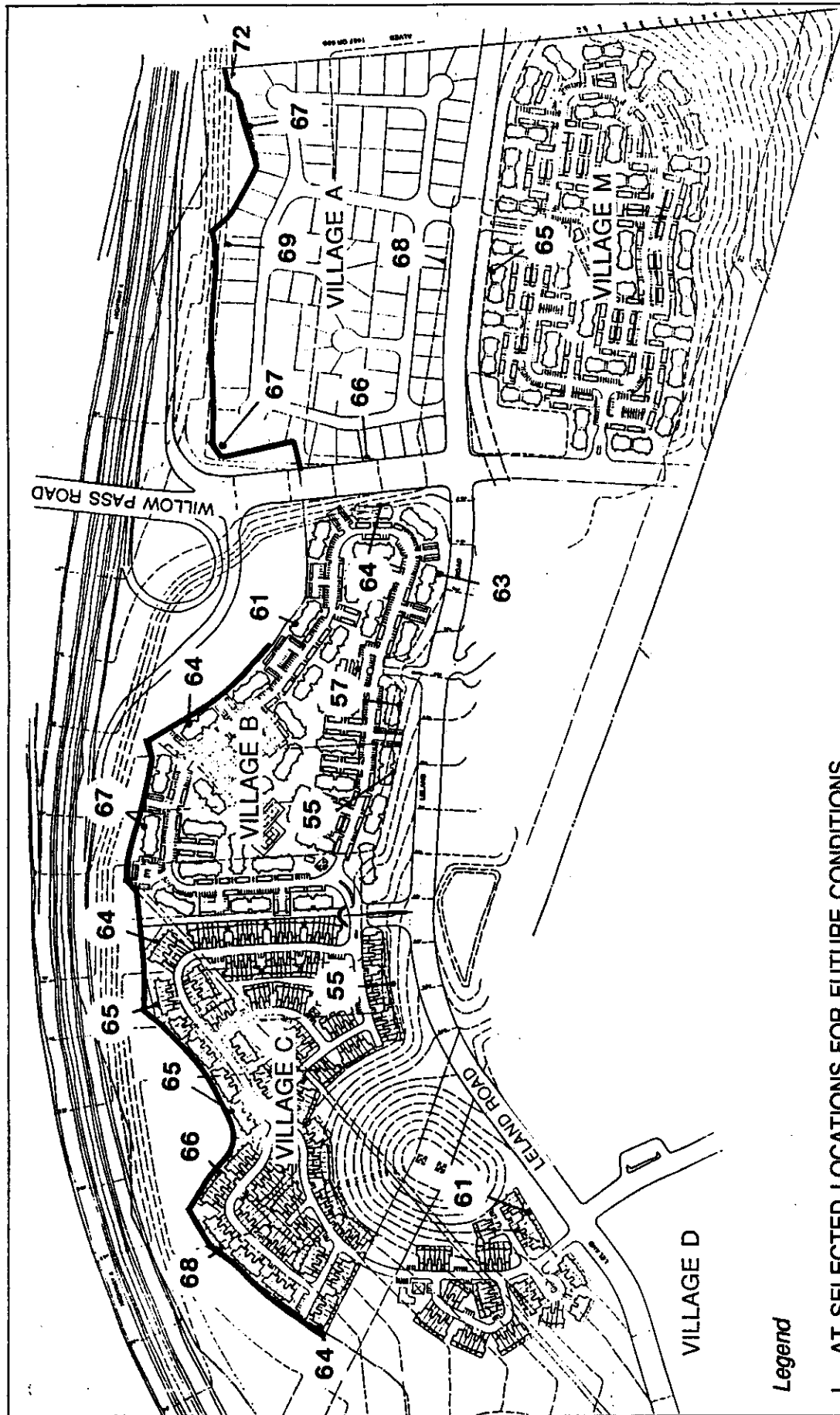
The freeway noise projections have also taken into account the contribution of BART to the overall future noise levels. It has been assumed in the modelling that train frequency and distribution would be similar to that along the Concord BART line. The resulting model calculations indicate (and measurements along Highway 24 in Lafayette confirm) that BART would not contribute measurable increases to the overall average noise level along Highway 4.

Figure 43 shows the modeled future day/night noise levels ( $L_{dn}$ ) at representative locations adjacent to Highway 4, Willow Pass Road, and Leland Road, at project buildout.

## **2. IMPACTS**

The potential noise impact concerns associated with the San Marco project include:

- The compatibility of the proposed residential development with the anticipated onsite noise environment;
- The impact of project-generated traffic on the noise environment for existing noise-sensitive development along streets serving the project site; and
- Temporary noise impacts associated with the project construction phase.



# *Legend*

L<sub>DN</sub> AT SELECTED LOCATIONS FOR FUTURE CONDITIONS  
(AFTER HWY. 4 IS WIDENED AND BART IS EXTENDED)  
WITHOUT MITIGATION

— LOCATION OF PROPOSED BERM/NOISE WALL

Figure 43

## **FUTURE ONSITE NOISE ENVIRONMENT**

a. Compatibility of the Proposed Residential Development with the Projected Onsite Noise Environment

(1) Outdoor Noise Levels. As shown on Figure 43, noise levels outside of those proposed project dwellings closest to Highway 4, Willow Pass Road, and West Leland Road would exceed an  $L_{dn}$  of 60 dB. Nineteen of twenty-two measurement locations would experience noise levels above the normally acceptable exterior  $L_{dn}$  standard of 60 dBA for new residential development. The measurement locations nearest Highway 4 would have  $L_{dn}$  levels ranging from 61 dBA to 72 dBA.

Locations near the Willow Pass Road extension would have  $L_{dn}$  levels ranging from 64 to 66 dBA. Locations near Leland Avenue would have  $L_{dn}$  levels ranging from 55 to 68 dBA. Locations with projected  $L_{dn}$  levels below the 60 dBA exterior residential threshold are on the south side of villages B and C at elevations well below Leland Road, where they would be protected from traffic noise by the elevation change.

(2) Indoor Noise Levels. In those areas where the exterior noise level exceeds 60 dB, the interior noise level can be expected to exceed the 45 dB  $L_{dn}$  standard when windows are open for ventilation; i.e., these locations would be subject to *significant adverse impacts*.

b. Noise Impacts of Project-Generated Traffic

The increase in noise levels along the streets serving the project site due to project traffic was calculated by comparing cumulative noise levels that would exist in the year 2005<sup>1</sup> with and without the project. Project-associated noise level increases along Bailey Road, Willow Pass Road, West Leland Road, and Highway 4 would be negligible; i.e., none of the locations would experience  $L_{dn}$  increases greater than one dB. The largest project-related increase would occur along West Leland Road. A one dB increase would be expected on West Leland Road just west of Bailey Road and a two dB increase would occur along West Leland Road just east of the existing Willow Pass Road in Concord. A one to two dB increase in the average traffic noise level is generally undetectable and would not be considered a significant impact.

c. Construction Noise Impacts

(1) Offsite. Because the site is surrounded primarily by grazing or otherwise vacant land, the temporary noise generated during the project grading phases and during construction of homes and roads on the site would not significantly impact any existing development. The nearest existing residential neighborhood is across Highway 4 from the site in the vicinity of Willow Pass Road (Sea Breeze). Noise levels in this area are, and will continue to be,

---

<sup>1</sup>It is conservatively assumed in this EIR that the project would reach buildout by the year 2005.

dominated by traffic noise from Highway 4. Noise levels generated by project earth-moving equipment, paving machines, and other major pieces of construction equipment would be below that generated by trucks and other traffic on Highway 4. Noise generated during construction would not impact any existing development in the project vicinity.

(2) Onsite. Because development of the site would be phased, there is the potential for substantial, highly noticeable significant construction noise impacts on new residents during buildout of the site. Table 35 indicates the noise levels associated with various typical construction activities. Construction period noise impacts are always expected during the buildout of a new development and would be considered unavoidable, short-term, *significant adverse impacts*.

### 3. MITIGATION MEASURES

Unless stated otherwise, all mitigation measures identified below are not included in the project and are not proposed by the project proponent, the project sponsor would be responsible for implementing these measures, and each mitigation would reduce identified impacts to less than significant levels.

#### a. Compatibility of the Proposed Residential Development With the Projected Onsite Noise Environment

(1) Outdoor Noise Levels. Providing for noise levels that are consistent with the goals of the City of Pittsburgh General Plan throughout the proposed development would require mitigation. Various combinations of noise abatement methods could be used to mitigate projected onsite noise levels. These could include the construction of berms or soundwalls, and redesign of the site plan to increase the distance from the proposed homes to the adjacent noise source. Since one of the goals of the City of Pittsburgh General Plan is to avoid the use of visible soundwalls, the required heights of both berms and soundwalls necessary to mitigate projected onsite noise levels have been calculated. Berms are generally more effective sound barriers than walls due to the increased acoustical effectiveness provided by the shape and content of a berm.

*Highway 4.* An eight-foot berm at the top of the slope along the elevated Highway 4 cross-section as shown on Figure 43 would mitigate projected noise intrusion into the project to levels to below an  $L_{dn}$  of 60 dB. Alternatively, an 11-foot high soundwall could be constructed in the same location to achieve the equivalent noise mitigation. Either of these two measures, or a combination of the two, would reduce noise impacts along Highway 4 to less than significant levels.

*Willow Pass Road Extension.* Mitigating noise exposure along the extension of Willow Pass Road would require the use of a soundwall because the proposed site plan does not provide enough room for a berm. A wall seven-feet high on both sides of the Willow Pass

Road Extension (Project Street A) would reduce the noise exposure for both the single-family homes on the east side and the multi-family homes on the west side to less than 60 dB. Because the multi-family homes would be located 10 to 15 feet below the road, the wall at this location would also reduce noise levels outside of the upper floors. Alternately, the project could be redesigned to allow for a more visually acceptable berm along this route, rather than a noise wall.

*Leland Road.* The highest noise level outside of a building along Leland Road west of the Willow Pass Road extension would be an  $L_{dn}$  of 63 dB. It is probable that such noise levels could be adequately attenuated on individual decks and patios by construction of local or individual fences with noise-abating specifications.

Noise levels along Leland Road east of the Willow Pass extension, on the other hand, would be quite high, particularly outside of the single-family homes on the north side of the road in proposed Village A. A sound wall nine-feet high would be necessary to reduce noise levels in the yards of these homes to an  $L_{dn}$  less than 60 dB. The exterior noise levels for multi-family homes on the south side of Leland Road in this area would reach an  $L_{dn}$  of 65 dB. Because these are multi-family homes and because the primary outdoor use areas would be in the center of the development, it is anticipated that mitigation would take place for localized patios in the form of fences.

The berms and walls recommended above provide a conceptual indication regarding the type of mitigation that would be required to make the project compatible with the noise environment and to reduce project noise-related impacts to less than significant levels. Precise locations and heights of berms, walls and fences would need to be determined at the project development stage.

(2) Indoor Noise Levels. The berms or walls would reduce noise levels outside of the first floors to below an  $L_{dn}$  of 60 dB. This means that noise levels inside the first floor of homes in this area would be below an  $L_{dn}$  of 45 dB, even with first-floor windows open for ventilation. Second stories, however, could be exposed to noise levels in excess of 60 dB. In these cases, ventilation must be provided so that residents could keep the windows closed to meet the indoor noise standard. Additionally, in some cases, exterior noise levels may be severe enough to require the use of sound rated glazing in upper floor windows.

b. Noise Impacts of Project-Generated Traffic

No significant impacts identified. No mitigation required.

c. Construction Noise Impacts

(1) Offsite. No significant adverse impacts identified. No mitigation required.

(2) Onsite. To minimize the impact of project construction noise on new project residents, construction should be limited to daytime hours on weekdays between 8:00 AM and 5:00 PM. All equipment used in the project should be adequately muffled and maintained. Even with these mitigations, however, these short-term noise impacts would remain significant.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
IV.I. Noise  
Page 286



---

## J. AIR QUALITY

---

This EIR section describes the impacts of the project on local and regional air quality. The section has been prepared using methodologies and assumptions recommended within the air quality impact assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).<sup>1</sup> In keeping with these guidelines, the section describes existing air quality, construction-related impacts, direct and indirect emissions associated with the project at buildout, the impacts of these emissions on both the local and regional scale, and mitigation measures warranted to reduce or eliminate any identified significant impacts.

### 1. SETTING

#### a. Air Pollution Climatology

Pittsburg is located on the south side of the San Joaquin River delta east of the Carquinez Straits. Its location between the greater Bay Area and the Central Valley has a great influence on the climate and air quality of the area.

The Pittsburg area has a relatively low potential for air pollution, given the persistent and strong winds typical of the area. Wind records from similar hillside sites in Pittsburg show a strong predominance of westerly winds. Average wind speed is relatively high, over 10 MPH, and the frequency of calm winds is quite low.<sup>2</sup> These winds dilute pollutants and transport them away from the area, so that emissions released in the Pittsburg area may have more influence on air quality at other locations in the Sacramento and San Joaquin valleys. However, Pittsburg's location downwind of the greater Bay Area also means that pollutants from other areas are transported to Pittsburg.

#### b. Air Pollutants and Ambient Standards

The Mulford-Carrell Act of 1969 and the Clean Air Act Amendments of 1970 established state and federal air quality standards for several pollutants. These standards are divided into primary standards designed to protect the public health, and secondary standards

---

<sup>1</sup>Bay Area Air Quality Management District, Air Quality and Urban Development- Guidelines for Assessing Impacts of Projects and Plans, June 1985 (Revised July 1991).

<sup>2</sup>California Department of Water Resources, Wind in California, Bulletin No. 185, January 1978.

intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance and other forms of impact. These state and federal standards are summarized in Table 35.

The air pollutants covered in the above-described legislation are known as "criteria" pollutants, in that their effects are documented in criteria documents which form the basis for federal and state ambient air quality standards. These pollutants and their effects are described below.

(1) Ozone. Ozone is the most prevalent of a class of photochemical oxidants formed in the urban atmosphere. The creation of ozone is a result of a complex chemical reactions between hydrocarbons and oxides of nitrogen in the presence of sunshine. Unlike other pollutants, ozone is not released directly into the atmosphere from any specific source. Rather, the major sources of ozone precursors which are oxides of nitrogen and reactive hydrocarbons, are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.

The health effects of ozone are eye irritation and damage to lung tissues. Ozone also damages some materials such as rubber, and may damage plants and crops.

(2) Carbon Monoxide. Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels, and its main source in the Bay Area is automobiles.

The health effects of carbon monoxide are related to its affinity for hemoglobin in the blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic heart disease, reduced lung capacity, and impaired mental abilities.

(3) Nitrogen Dioxide. Nitrogen dioxide is a reddish-brown toxic gas. It is one of the oxides of nitrogen that result from combustion. It is the only oxide of nitrogen which is toxic. However, other oxides of nitrogen, particularly nitric oxide, are converted to nitrogen dioxide in the presence of sunshine. Major sources of oxides of nitrogen are automobiles and industry.

Nitrogen dioxide reduces visibility and it causes irritation to the lungs.

(4) Sulfur Dioxide. Sulfur dioxide is a colorless gas with a pungent, offensive odor. It is created by the combustion of sulfur-containing fuels. This substance is known to oxidize to sulfur trioxide, which combines with moisture in the atmosphere to form a sulfuric acid mist.

Sulfur dioxide damages and irritates lung tissue, and accelerates corrosion of materials.

Table 35  
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

| <u>Pollutant</u> | <u>Averaging Time</u> | <u>Federal<br/>Primary Standard</u> | <u>State<br/>Standard</u> |
|------------------|-----------------------|-------------------------------------|---------------------------|
| Ozone            | 1-Hour                | 0.12 PPM                            | 0.09 PPM                  |
| Carbon Monoxide  | 8-Hour                | 9.3 PPM                             | 9.0 PPM                   |
|                  | 1-Hour                | 35.0 PPM                            | 20.0 PPM                  |
| Nitrogen Dioxide | Annual                | 0.05 PPM                            | ---                       |
|                  | 1-Hour                | ---                                 | 0.25 PPM                  |
| Sulfur Dioxide   | Annual                | 0.03 PPM                            | ---                       |
|                  | 24-Hour               | 0.14 PPM                            | 0.05 PPM                  |
|                  | 1-Hour                | ---                                 | 0.5 PPM                   |
| Particulates     | AGM                   | 50 ug/m3                            | 30 ug/m3                  |
|                  | 24-Hour               | 150 ug/m3                           | 50 ug/m3                  |
| Lead             | 30-Day Ave.           | ---                                 | 1.5 ug/m3                 |
|                  | 3-Month Ave.          | 1.5 ug/m3                           | ---                       |

SOURCE: Don Ballanti

PPM = Parts Per Million

ug/m3 = Micrograms Per Cubic Meter

(5) Suspended Particulate Matter. Suspended particulate matter consists of 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. A portion of the suspended particulate matter typically found in the air is due to natural sources such as wind blown dust and pollen. Man-made sources include combustion, automobiles, field burning, factories and unpaved roads. A portion of the particulate matter in urban atmospheres is also a result of photochemical processes.

The effects of high concentrations of suspended particulates on humans include aggravation of chronic disease and heart/lung disease symptoms. Non-health effects include reduced visibility and soiling of surfaces.

(6) Toxic Air Contaminants. Another group of substances known as Toxic Air Contaminants (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 requirement, compared to that for other criteria pollutants.

The Toxic "Hot Spots" Information and Assessment Act (Assembly Bill 2588), enacted in 1987, required the Bay Area Air Quality Management District to develop information on TAC emissions and resulting health risks and provide this information to the public.

c. Air Pollutant Sources

Pittsburg contains many criteria pollutant sources. The combustion of fuel for space and water heating, industrial processes, and commercial uses is one such pollutant source. The evaporation of fuels and solvents, incineration, fires, and pesticide use are other examples of typical pollutant sources. The largest single source of pollutants is vehicles.

Pittsburg also contains some large point sources of pollutants such as the Pacific Gas and Electric (PG&E) Pittsburg generating plant, the Dow Chemical plant, and the USS-POSCO facilities. All these major sources are located in industrial areas several miles from the project site, and would, under normal wind conditions, be located downwind of the site.

Assembly Bill 2588, the Toxic "Hot Spots" Information and Assessment Act of 1987, requires that industry provide information to the public about emissions of toxic air contaminants and their impact on public health. This law required local air districts and the state Air Resources Board to prepare a detailed inventory of sources of over 200 toxic air contaminants, to identify high priority emission sources, and to require preparation of health risk assessments for each of these priority sources.

The inventory of toxic air contaminant (TAC) sources for the Bay Area identifies 17 sources of toxic air contaminants within or near Pittsburg. Of these only one, Dow Chemical, was identified as a "priority site" and therefore required to prepare a health risk assessment.

None of the 17 identified sources of TAC's in Pittsburgh are located in proximity to the project site.<sup>1</sup>

d. Current Air Quality

Pittsburg is within the nine-county Bay Area Air Basin under the jurisdiction of the Bay Area Air Quality Management District which operates an air quality monitoring site in Pittsburgh. A summary of air quality data from the Pittsburgh monitoring site is shown in Table 36. Data is shown for the years 1988 through 1990.

Table 36 shows that the federal ambient air quality standards for most criteria pollutants are met in Pittsburgh. Concentrations of ozone do, however, exceed the more stringent state standard.

Concentrations of suspended particulate matter (PM-10),<sup>2</sup> although not measured in Pittsburgh, also exceed the state standard in most of the Bay Area.

e. Regional Air Quality Planning

The U.S. Clean Air Act Amendments of 1977 required that each state identify areas within its borders that did not meet federal primary standards as non-attainment areas. The states were required to prepare a State Implementation Plan (SIP) to show how the federal standards were to be attained by 1987. The Bay Area portion of the SIP was the 1982 Bay Area Air Quality Plan. Despite considerable improvement in air quality, the Bay Area did not meet the 1987 deadline for attainment of the federal air quality standards.

The Clean Air Act Amendments of 1990 require that (1) non-attainment areas develop plans and strategies that will reduce pollutants by 15 percent during the first six years, then three percent annually thereafter until the standards are met; and (2) these non-attainment areas must meet the standards within five to 17 years, depending on the severity of the problem.

The California Clean Air Act, enacted in 1989, requires local air pollution control districts to prepare air quality attainment plans for ozone, carbon monoxide and suspended particulate (PM-10). Generally, these plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods. The Act also grants air districts explicit statutory authority to adopt indirect source regulations and transportation

---

<sup>1</sup>Bay Area Air Quality Management District, Toxic Air Contaminant Control Program Annual Report 1991, 1991.

<sup>2</sup>PM-10 = particulate matter, 10-microns, which is a standard unit of particulate measure typically applied in air quality measurement and control activities.

Table 36  
SUMMARY OF AIR QUALITY DATA FOR PITTSBURG, 1988 THROUGH 1991

| <u>Pollutant</u>    | <u>Standard</u> | <u>Year</u> | <u>Days Exceeding<br/>Ambient Standards</u> |
|---------------------|-----------------|-------------|---------------------------------------------|
| Ozone               | Fed. 1-Hour     | 1988        | 0                                           |
|                     |                 | 1989        | 0                                           |
|                     |                 | 1990        | 0                                           |
|                     |                 | 1991        | 0                                           |
| Ozone               | State 1-Hour    | 1988        | 8                                           |
|                     |                 | 1989        | 5                                           |
|                     |                 | 1990        | 4                                           |
|                     |                 | 1991        | 0                                           |
| Carbon<br>Monoxide  | Fed. 8-Hour     | 1988        | 0                                           |
|                     |                 | 1989        | 0                                           |
|                     |                 | 1990        | 0                                           |
|                     |                 | 1991        | 0                                           |
| Nitrogen<br>Dioxide | State 1-Hour    | 1988        | 0                                           |
|                     |                 | 1989        | 0                                           |
|                     |                 | 1990        | 0                                           |
|                     |                 | 1991        | 0                                           |
| Sulfur<br>Dioxide   | Fed. 24-Hour    | 1988        | 0                                           |
|                     |                 | 1989        | 0                                           |
|                     |                 | 1990        | 0                                           |
|                     |                 | 1991        | 0                                           |

SOURCES: California Air Resources Board, California Air Quality Data, Annual Summary, Vols. XX-XXII, 1988-1991; Bay Area Air Quality Management District, Air Currents, March 1992.

control measures, including measures to encourage or require the use of ridesharing, flexible work hours, or other measures which reduce the number or length of vehicle trips.

The Bay Area '91 Clean Air Plan (CAP) is the air quality plan for the Bay Area mandated by the California Clean Air Act.<sup>1</sup> The Plan contains numerous control measures for stationary sources and mobile sources, including Transportation Control Measures (TCMs) designed to reduce automobile emissions in the region.

The Bay Area '91 Clean Air Plan forecasts continued improvement in regional air quality. An analysis of carbon monoxide trends in the Plan shows attainment of the standards throughout the Bay Area by the mid-1990s. However, implementation of the Plan would not provide for attainment of the state ozone standard until after the year 2000.

## **2. PROJECT IMPACTS**

The proposed project would affect air quality both directly and indirectly. The direct effects of development would be related to new residential combustion sources such as fireplaces, water heaters, and space heaters and residential evaporative emissions caused by cleaner, solvent and surface coating use. Construction activities would also create direct temporary, air quality impacts, as discussed below.

The indirect effects of development would be related to vehicle use. Vehicles associated with the project would affect both local air quality (through changes in traffic volumes and congestion levels on the local street network) and regional air quality (by generating new regional vehicle use).

### **a. Short-Term Construction Impacts**

Construction activities such as clearing, excavation and grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed earth would generate additional dust and particulate matter. Transport of any excess soil offsite during project excavation would create similar impacts.

Construction dust would affect local and regional air quality at various times during the build-out period of the project. The dry, windy climate of the area during the summer months combined with the fine, silty soils of the region, create a high potential for dust generation.

---

<sup>1</sup>Bay Area Air Quality Management District, Bay Area '91 Clean Air Plan, October 1991.

Construction dust impacts are extremely variable, being dependent on windspeed, soil type, soil moisture, the type of construction activity and acreage affected by construction activity. A rough estimate of uncontrolled construction-related particulate (PM-10) emissions is 0.6 tons per month per acre of active construction.

The resulting effects of construction activities would be increased dustfall and locally elevated levels of PM-10 near the construction activity. Depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts, these impacts could affect existing or future residential areas within or near the project. Consequently, project construction dust generation is considered to be a potentially *significant adverse impact*, particularly as it may affect existing residential development within the project as later construction phases take place.

b. Long-Term Local Air Quality Effects

On the local scale, the pollutant of greatest interest is carbon monoxide. Concentrations of this pollutant are related to the levels of traffic and traffic congestion along local streets and at intersections.

The CALINE-4 computer simulation model was applied to four selected local intersections to estimate future carbon monoxide levels in the project area. The four intersections selected for modelling were those identified in section IV.C.2 of this EIR as most affected by project traffic generation. The CALINE-4 program and the assumptions made in its use are described in Appendix E of this SEIR.

The results of the CALINE-4 modelling for the four selected intersections are shown in Table 37 for the three stages of project buildout addressed in the Transportation chapter (IV.C). The concentrations in Table 37 should be compared to the state and federal ambient air quality standards. Predicted future one-hour concentrations should be compared to the state standard of 20 parts per million (PPM) and the federal standard of 35 PPM. Predicted eight-hour concentrations shown in Table 37 should be compared to the state and federal standard of nine PPM.

Existing carbon monoxide concentrations shown in Table 37 are below the state and federal standards. The anticipated future year concentrations would be below current levels due to increasingly stringent emission control programs for automobiles. Project traffic would increase carbon monoxide concentrations by up to 1.4 PPM for the one-hour averaging time and up to 1.0 PPM for the eight-hour averaging time, but levels would remain below the state and federal standards. The project impact on local air quality levels is therefore considered less-than-significant.



Table 37

PROJECTED CARBON MONOXIDE CONCENTRATIONS NEAR MAJOR INTERSECTIONS

| <u>Case</u>                                           | <u>Intersection</u>           |                           |                               |                                     |
|-------------------------------------------------------|-------------------------------|---------------------------|-------------------------------|-------------------------------------|
|                                                       | <u>Avila/<br/>Willow Pass</u> | <u>Leland/<br/>Bailey</u> | <u>Evora/<br/>Willow Pass</u> | <u>Leland/<br/>Willow Pass Ext.</u> |
| <u>1-Hour Averaged Concentrations (Parts/million)</u> |                               |                           |                               |                                     |
| Existing (1992)                                       | 13.2                          | 12.4                      | 9.9                           | ---                                 |
| No Project (1998)                                     | 9.3                           | 9.9                       | 8.3                           | 8.1                                 |
| Project Phase 1 (1998)                                | 9.4                           | 10.2                      | 8.5                           | 8.3                                 |
| No Project (2000)                                     | 8.5                           | 9.1                       | 7.6                           | 6.8                                 |
| Project Phase 1-2 (2000)                              | 9.0                           | 9.3                       | 7.8                           | 8.2                                 |
| No Project (2005)                                     | 7.3                           | 8.0                       | 6.5                           | 5.9                                 |
| Project Phase 1-3 (2005)                              | 7.8                           | 8.1                       | 6.7                           | 7.3                                 |
| <u>8-Hour Averaged Concentrations (Parts/million)</u> |                               |                           |                               |                                     |
| Existing (1992)                                       | 8.4                           | 7.8                       | 6.4                           | ---                                 |
| No Project (1998)                                     | 5.9                           | 6.3                       | 5.2                           | 5.0                                 |
| Project Phase 1 (1998)                                | 5.9                           | 6.5                       | 5.3                           | 5.2                                 |
| No Project (2000)                                     | 5.3                           | 5.7                       | 4.7                           | 4.1                                 |
| Project Phase 1-2 (2000)                              | 5.7                           | 5.8                       | 4.8                           | 5.1                                 |
| No Project (2005)                                     | 4.6                           | 5.1                       | 4.0                           | 3.6                                 |
| Project Phase 1-3 (2005)                              | 4.9                           | 5.1                       | 4.1                           | 4.6                                 |

SOURCE: Don Ballanti

c. Long-Term Regional Air Quality Effects

Trips to and from the project would also result in air pollutant emissions affecting the entire San Francisco Bay air basin. To evaluate the regional emissions effects associated with the project, the URBEMIS-3 computer program, developed by the California Air Resources Board, was utilized. The URBEMIS-3 program and the assumptions made in its use are described in Appendix G of this SEIR.

The estimated incremental daily emissions associated with project-related traffic are shown in Table 38 below for reactive organic gases and oxides of nitrogen (two precursors of ozone), suspended particulate (PM-10), and sulfur dioxide.

Daily emissions associated with proposed project residential uses are also shown in Table 38. Residential uses contain a number of dispersed and intermittent sources of pollutants such as space and water heaters, household paints and solvents, fireplaces and woodstoves, lawn mowers and other equipment.

Guidelines for the evaluation of project impacts issued by the Bay Area Air Quality Management District consider emission increases to be significant if they exceed 150 lbs per day for any regional pollutant.<sup>1</sup> Project emissions shown in Table 38 would exceed this criterion for two pollutants: reactive organic gases and oxides of nitrogen. Consequently, the project is considered to have a *significant adverse impact* on regional air quality.

Of the emissions shown in Table 38, the precursors of ozone (ROG and NOx) are the most important from a regional standpoint. Because of the time lag between emission of ozone precursors and the formation of ozone and the general west-to-east transport of pollutants that occurs during the summer ozone season, the effects of project-related ozone precursor emissions would primarily occur in the adjacent San Joaquin Valley air basin. Transport of ozone from the Bay Area air basin to the San Joaquin air basin is an important contributor to ozone problems in the San Joaquin Valley air basin.

d. Cumulative Impacts

The Bay Area is experiencing continued growth in population and vehicle use that will affect the emission of regional pollutants such as reactive organic gases and nitrogen oxides. Nevertheless, current projections are that regional emissions of these pollutants will decrease in the future, despite cumulative growth in population and vehicle use, due to regional programs for reducing emissions that are in place or currently being considered.

---

<sup>1</sup>Bay Area Air Quality Management District, Air Quality and Urban Development Guidelines, 1985.

Table 38  
**PROJECT EMISSIONS**

|                                 | ROG <sup>1</sup><br>Pounds/Day | NOx <sup>2</sup> | PM-10 <sup>3</sup> | SOx <sup>4</sup> |
|---------------------------------|--------------------------------|------------------|--------------------|------------------|
| <b>Project Phase 1 (1998)</b>   |                                |                  |                    |                  |
| Vehicle Use                     | 169.4                          | 306.9            | 30.4               | 36.2             |
| Residential Sources             | 114.2                          | 22.7             | 7.4                | 1.4              |
| Total                           | 283.6                          | 329.6            | 37.8               | 37.6             |
| <b>Project Phase 1-2 (2000)</b> |                                |                  |                    |                  |
| Vehicle Use                     | 303.5                          | 549.6            | 54.3               | 64.8             |
| Residential Sources             | 228.4                          | 45.5             | 14.8               | 2.7              |
| Total                           | 531.9                          | 594.1            | 69.1               | 67.5             |
| <b>Project Phase 1-3 (2005)</b> |                                |                  |                    |                  |
| Vehicle Use                     | 268.2                          | 706.1            | 71.3               | 82.8             |
| Residential Sources             | 335.5                          | 66.8             | 21.7               | 4.0              |
| Total                           | 603.7                          | 772.9            | 93.0               | 86.8             |

SOURCE: Don Ballanti

<sup>1</sup>ROG = Reactive Organic Gases

<sup>2</sup>NOx = Oxides of Nitrogen

<sup>3</sup>PM-10 = Particulate Matter, 10 Micron

<sup>4</sup>SOx = Sulfur Oxides

Continued improvement in regional air quality is projected through the year 2000, although attainment of all air quality standards throughout the entire Bay Area Air Basin is not projected by the year 2000.<sup>1</sup>

The Bay Area '91 Clean Air Plan sets forth the current regional strategy for improving air quality. The control measures developed within this Plan, now in the Draft stage, will be applicable to Pittsburgh as well as the nine-county Bay Area. 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 draft regional plan is primarily a function of the consistency of the project characteristics with the population and employment assumptions utilized in developing the draft plan.

The population increase that would occur within the proposed project (estimated at 7,730 in section IV.B.2 of this EIR) appears consistent with ABAG projections of population utilized for Pittsburgh in developing the Bay Area '91 Clean Air Plan.

### 3. MITIGATION MEASURES

#### a. Short-Term Construction Impacts

The severity of project construction period air pollutant emissions impacts can be reduced to less-than-significant levels through application of appropriate mitigation measures. In particular, dust control should be required during all phases of construction to ensure that construction period impacts are mitigated. The following specific construction mitigation measures are recommended:

- suspend earthmoving or other dust-producing activities during periods of high winds when dust control measures are unable to avoid visible dust plumes;
- provide equipment and staffing for watering of all exposed or disturbed soil surfaces sufficient to suppress dust plumes, including weekends and holidays. An appropriate dust palliative or suppressant, added to water before application, should also be utilized;
- water or cover stockpiles of debris, soil, sand or other materials that can be blown by the wind;
- sweep construction area and adjacent streets of all mud and debris, since this material can be pulverized and later resuspended by vehicle traffic;

---

<sup>1</sup>Bay Area Air Quality Management District, Draft Bay Area '91 Clean Air Plan (CAP), 1991.

- limit the speed of all construction vehicles to 15 miles per hour while on site;
- all materials transported by truck should be covered or wetted down as needed to suppress visible dust; and
- all excavated inactive portions of the site should be watered with an appropriate dust suppressant, covered or seeded.

**b. Long-Term Local Air Quality Impacts**

The impacts on local air quality attributable to the project have not been classified as significant and therefore no mitigation is required. However, implementation of the measures listed in section c below under regional air quality effects would also reduce project impacts on local air quality.

**c. Long-Term Regional Air Quality Impacts**

The following measures should be implemented to reduce project impacts on regional air quality. The overall effectiveness of this program of mitigation in reducing project emissions would be on the order of five to ten percent. However, the permanent impacts of the project on regional air quality would remain significant even after implementation of all identified mitigation measures.

**(1) Land Use and Density.** Land uses and densities can be manipulated to orient development population concentrations towards pedestrian/bicycle travel for local trips and to provide easy access to BART. The proposed project locates the highest density development along Leland Road, the most likely route for future local transit route connections to BART and/or downtown Pittsburgh, and thus appropriately places a large portion of the site population within easy walking or bicycling distance to transit. However, project land uses are exclusively residential, requiring residents to drive for all services. Placing one or more neighborhood commercial or convenience center within the project would be an effective way of reducing external trips and promoting bicycle/pedestrian modes of travel.

**(2) Transportation System.** The proposed project includes a trail system connecting residences with the proposed recreational area. This trail system should be expanded to provide a bikeway along Leland Road to promote bicycle use for trips to BART. Transit pull-outs should be provided along the Leland Road frontage of the project to accommodate future transit service. When such service becomes available, transit amenities, such as information kiosks and shelters, should be installed. Secure bicycle parking areas for apartment residents should also be provided, if individual garages are not provided.

**(3) Fireplaces.** Residential fireplaces are an air pollution source receiving increasing attention in recent years. Fireplace/woodstove restrictions have been adopted in a number

of cities in California and the western United States, and it is likely that regional control of this source will be considered in the future.

The impact of residential fireplace emissions of PM-10 and carbon monoxide can be reduced by restricting the number of fireplaces in residences to one per household and/or requiring residential use of EPA-certified woodstoves or fireplace inserts. EPA-certified woodstoves or fireplace inserts are 70 to 90 percent effective in reducing emissions from this source.

---

## K. CULTURAL RESOURCES

---

This section describes existing cultural and historic resources on the San Marco site, possible project impacts on those resources, and measures necessary to mitigate identified impacts. The information in this section is based on review of existing archaeological studies completed for portions of the project site, and a field survey of the site by Holman & Associates, EIR consulting archaeologists.

### 1. SETTING

#### a. Background and Methodology

(1) Previous Studies. Archaeological records at the California Archaeological Inventory indicate that three previous archaeological field reconnaissance studies have been conducted on portions of the site.<sup>1</sup> An archaeological field reconnaissance on a 120-acre area in the center of the site was conducted in 1988 as part of the environmental documentation prepared for the proposed BART commuter line extension along Highway 4.<sup>2</sup> Two additional field reconnaissance studies were also conducted in 1989 as part of the environmental documentation prepared for the proposed widening and lowering of Highway 4 at the Willow Pass Road area.<sup>3</sup>

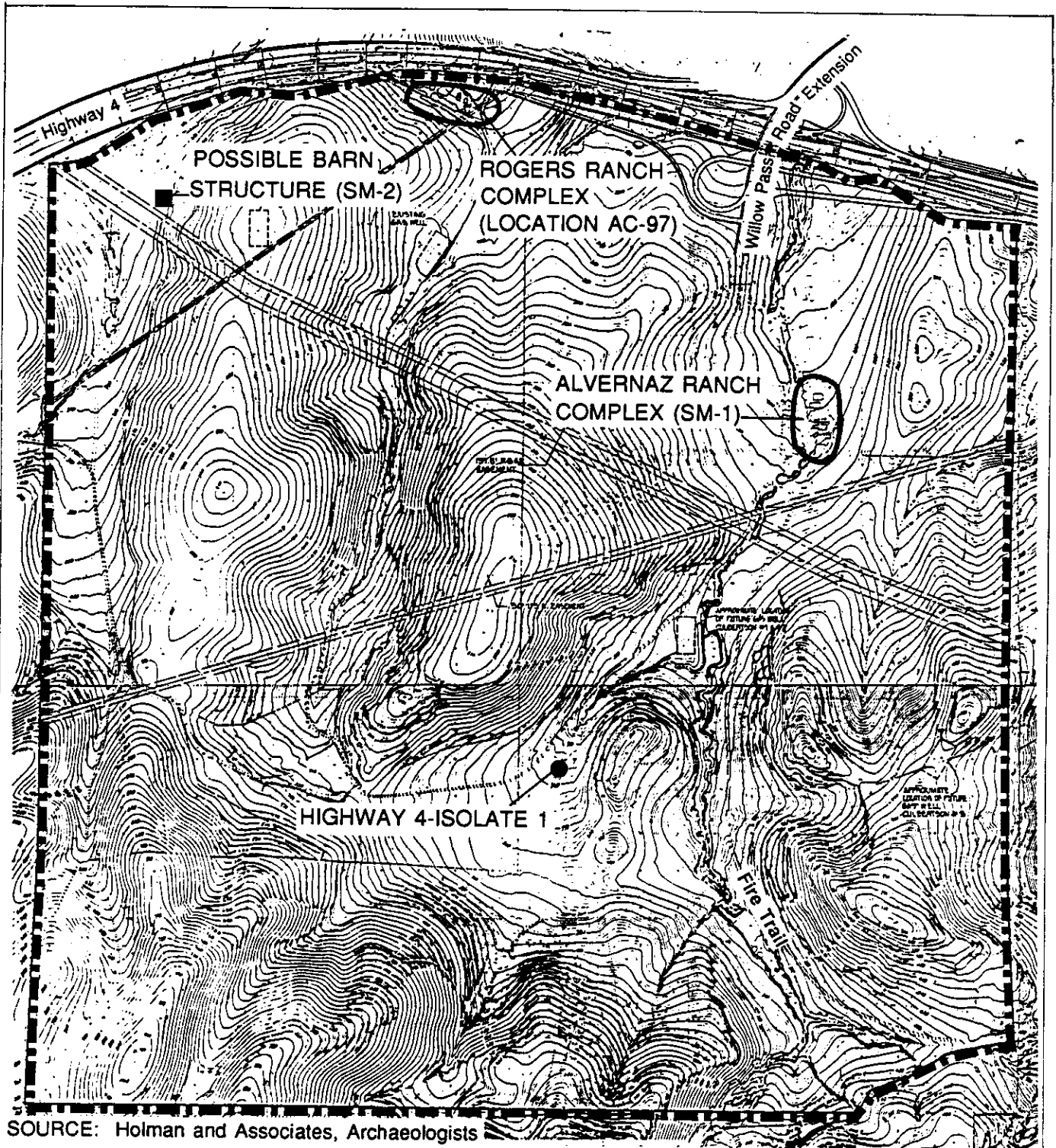
The 1989 studies identified two cultural resources, including the Rogers Ranch complex (identified as Location AC-97), and a single obsidian biface fragment (identified as Highway 4-Isolate 1). The locations of these features are shown on Figure 44. Based on conventional criteria of eligibility for inclusion in the National Register of Historic Places, the studies determined that neither feature possessed the level of significance which might

---

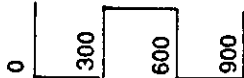
<sup>1</sup>Archaeological inventory search conducted March 18 and 19, 1992 by Holman & Associates, archaeological consultants.

<sup>2</sup>Study conducted by David Chavez and Sally B. Woodbridge, Cultural Resources Evaluation for the Pittsburg-Antioch Alternatives Analysis, Contra Costa County, CA, 1988. Reports on file with California Archaeological Inventory, Sonoma State University.

<sup>3</sup>Studies conducted by Suzanne Baker and Laurence Shoup, Cultural Resources of the Highway 4 Project, Near West Pittsburg, Contra Costa County, CA, 1989; Cultural Resources Report, Environmental Evaluation for Widening and Lowering of the Willow Pass Grade on Highway 4 between Willow Pass Road in Concord and Bailey Road in Pittsburg. Reports on file with California Archaeological Inventory, Sonoma State University.



SCALE IN FEET



## Figure 44 IDENTIFIED CULTURAL RESOURCES

San Marco Project City of Pittsburgh



qualify them for inclusion in the National Register. No other evidence of cultural artifacts or deposits were identified.

(2) Field Reconnaissance. An additional archaeological field surface reconnaissance of the project site was conducted on March 18 and 19, 1992 by Holman & Associates, EIR consulting archaeologists. Due to the steep, treeless, grass-covered hill topography that dominates much of the site, reconnaissance efforts focused on flats, drainage channels, ridges, and rock outcrops where prehistoric and historic sites and/or features are most likely to be located. The two previously recorded sites, the Rogers Ranch and Highway 4-Isolate 1, were revisited and examined by the EIR archaeologist for previously unidentified features or cultural remnants. Two additional isolated artifacts/features, including a second ranch complex (SM-1) and a barn structure (SM-2), were identified as a result of this 1992 field reconnaissance. The locations of these sites are also shown on Figure 44.

The characteristics and significance of these various onsite cultural resources are described below.

b. Onsite Cultural Resources

(1) Rogers Ranch Complex (Location AC-97). This location consists of a concrete foundation, concrete rubble from another structure, introduced trees, and wood debris. The location was inhabited from about 1885 well into the 20th Century.<sup>1</sup> Neither the historic remains nor its place in local history represent qualities necessary for inclusion in the National Register of Historic Places, and the visible historic remains do not appear to be significant enough to warrant further archival research or actual in-field testing.<sup>2</sup>

(2) Highway 4-Isolate 1. An obsidian biface fragment was recorded, but not collected, in a small, flat area near the center of the site. No evidence of any additional signs of cultural resources or prehistoric occupation was found at this location. However, without a test excavation, the location remains unevaluated as a potential prehistoric resource. Some potential also remains that the obsidian artifact may be associated with cultural deposits buried from slumping caused by the eroding surrounding hillsides.

(3) Alvernaz Ranch Complex (SM-1). An existing ranch complex consisting of structures and foundations is located on both sides of Shore Acres Creek 1,200 feet south of Highway 4 on the northwestern portion of the site, as shown on Figure 44 (also see photograph on page 82). On the east side of the creek, an existing ranch complex includes two houses, a garage, and a shed that appear to span the 20th century. The ranch has been occupied

---

<sup>1</sup>Baker and Shoup, 1989.

<sup>2</sup>ibid.

by the same family since the 19th century.<sup>1</sup> The west side of the creek also contains historic resources, including three 19th century structures, a barn foundation, an existing feed shed, a potential former blacksmith location, and a cellar hole.

The history of land use on the site and the location, age, and character of the structures in this ranch complex indicate that significant buried resources of historical importance could be present at this location. Specific descriptions of each of these features are described below:

*Existing Houses.* Both houses appear to have been built in the 20th century, and one may have been built at least than 50 years ago. Without an architectural evaluation, the age and significance of these structures could not be determined.

*Barn Foundation.* A dry-laid foundation of a barn measuring approximately 40 feet by 40 feet and constructed of undressed sandstone rocks, is located in the southwest area of the complex. (See Figure 1 in Appendix F.) It is estimated that the barn was torn down approximately ten years ago.<sup>2</sup> Remnants of the framework and siding from the structure remain piled at several locations around the foundation. Although many round nails were observed in this material, square nails were observed in the remains of the original framework of the barn, suggesting construction before 1890.

*Existing Feed Shed.* A standing redwood shed, measuring 20 feet by 15 feet, is located northeast of the barn foundation. (See Figure 1 in Appendix F.) The shed consists of a rusted corrugated metal roof standing on cement filled nail keg supports. The round nails in the structure suggest a post-1890 date of construction. Its weathered condition, and tongue-and-groove wall and ceiling paneling also suggest a construction date in the early 20th Century.

*Possible Blacksmith Shop.* A square area of possible wooden floor supports measuring 12 feet by 18 feet and bearing square nails is located 15 feet north of the feed shed. Tools found at the time of the structure's dismantling suggest past use as a blacksmith shop.<sup>3</sup>

*Cellar Hole.* The location of the probable original ranch house structure is now marked by a trash filled depression located on the west side of the creek, 125 feet north of the feed shed. (See Figure 1 in Appendix F.) The depression, which appears to be a past cellar hole, measures approximately 21 feet by 21 feet and appears to be at least four feet to five feet deep. No other architectural remains were observed. Modern trash now fills the cellar

---

<sup>1</sup>Mr. Dutra, ranch occupant, personal communication to Holman & Associates, March, 1992.

<sup>2</sup>Mr. Dutra, 1992.

<sup>3</sup>Ibid.

hole. A sparse scattering of white china fragments and bits of glass were observed on the creek bank just east of the cellar depression.

(4) Possible Barn/Structure (SM-2). As shown on Figure 44, a broad flat area or terrace approximately 50 feet by 50 feet is located on the edge of a flat east of a minor drainage channel at the northwest corner of the project site. This terrace, adjacent to an apparent historic road extending from the present Highway 4 alignment south to the gate at the head of modern Willow Pass Road, suggests a possible past barn/dairy operation at this location. A single badly rusted metal milk can observed in the nearby drainage was the only artifact found in the area.

(5) Other Locations. Two sizable "rock shelters" are located 2,200 feet southwest of the Rogers Ranch complex (Location AC-97). Neither location exhibited smoke blackening, bedrock mortars, evidence of midden deposit, artifacts or other evidence of prehistoric use or occupation. These shelters are not considered to be significant cultural resources.

## **2. IMPACTS**

The proposed project development activity would create significant impacts to the Rogers Ranch complex, the Highway 4-Isolate, the Alvernaz ranch, and the possible barn structure. Construction of the project would result in the removal of all of the structural features of these resources and massive grading of the site in these locations. Each of these locations would be covered with between 30 and 80 feet of fill.

### a. Rogers Ranch Complex (Location AC-97)

Although the archaeological field reconnaissance conducted on the project site did not reveal any evidence of prehistoric or historic materials, it remains possible that buried prehistoric and historic resources are present within the site area and could be encountered during site grading and construction of onsite infrastructure (street improvements; water sewer, and storm drainage systems, etc.) Such resources would be subject to damage during project grading and construction, and to vandalism if left unprotected. These possibilities represent a potential *significant adverse impact*.

### b. Highway 4-Isolate 1

It remains possible that buried prehistoric and historic resources are present within the site area and could be encountered during project grading and construction of onsite infrastructure (street improvements; water sewer, and storm drainage systems, etc.) Such resources would be subject to damage during grading and construction, and to vandalism if left unprotected. This possibility represents a potential *significant adverse impact*.

c. Alvernaz Ranch Complex (SM-1)

It is possible that prehistoric and historic resources are present within the site area and could be encountered during grading and construction of project residences, streets, and related onsite infrastructure (street improvements; water sewer, and storm drainage systems, etc.) Such resources would be subject to damage during grading and construction, and to vandalism if left unprotected. This possibility represents a *significant adverse impact*.

d. Possible Barn/Structure Location (SM-2)

As with the Alvernaz Ranch complex (SM-1), it is possible that prehistoric and historic resources are present at this location and could be encountered during project grading and construction of onsite infrastructure (street, water, sewer, and storm drainage systems, etc.) Such resources would be subject to damage during grading and construction, and to vandalism if left unprotected. This possibility represents a *significant adverse impact*.

e. Other Locations

Holman & Associates concluded that the "rock shelters" located 2,200 feet southwest of the Rogers Ranch complex (Location AC-97) are not cultural resources. As a result, the disruption of these sites caused by proposed construction activity would not represent a significant archaeological impact.

**3. MITIGATIONS**

a. Rogers Ranch Complex (Location AC-97)

An archaeologist should be present on the site during the initial phases of each construction sequence to monitor site clearing and grading and to identify and remove any significant 19th century artifacts revealed during construction which might be associated with previously unidentified subsurface features, such as wells, filled-in cellar holes, privy pits or other historic dump areas. The archaeologist selection should be subject to city approval. The archaeologist should be familiar with the history of the site prior to clearing and grading in order to properly identify relevant artifacts. The archaeologist should also identify and catalogue retrieved materials and prepare a summary report of findings. This formal archaeological report would constitute preservation of the history of the site in written form, and would compensate for the loss of the physical features of the site.

b. Highway 4-Isolate 1

The general vicinity of this location should be mechanically tested (i.e., backhoe or drill auger) under the supervision of a qualified archaeologist for any evidence of buried prehistoric deposits before project grading and construction activity is undertaken. If any

deposits are discovered, the archaeologist conducting the testing should immediately halt construction at this location, conduct further evaluation through hand excavation to assess the significance of any deposit, and based on this assessment, formulate necessary further mitigation measures. Such measures could include some type of salvage program.

c. Alvernaz Ranch Complex (SM-1)

Historic research (including an architectural evaluation) by a qualified archaeologist and architectural historian, and backhoe testing under the supervision of a qualified archaeologist subject to city approval, should be undertaken of this location before any grading or construction activity in the vicinity is commenced. The results of this research should be compiled in a summary report of findings. This archaeological report, constituting preservation of the history of the site in written form, would compensate for the loss of the physical features of the site. In addition, if historic resources are discovered during the backhoe testing, a specific archaeological mitigation program (i.e., monitoring of grading activity, salvage of resources) should be formulated by the archaeologist as warranted to offset potential impacts to the cultural resources at this location.

d. Possible Barn/Structure Location (SM-2)

Historic research, including an architectural evaluation, should be undertaken by a qualified archaeologist and architectural historian, and backhoe testing of this location should be undertaken under the supervision of a qualified archaeologist approved by the city, before any construction or grading activity is commenced. The results of the historic research should be compiled in a summary report of findings. This archaeological report, constituting preservation of the history of the site in written form, would compensate for the loss of the physical features of the site. If any prehistoric or historic resources are discovered during the backhoe testing, an archaeological mitigation program (i.e., monitoring of grading activity, salvage of resources) should be formulated to offset potential impacts to the cultural resources at this location.

e. Other Locations

No significant archaeological impact potential at other onsite locations has been identified; no mitigation is required.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
IV.K. Cultural Resources  
Page 308

---

## L. PUBLIC HEALTH AND SAFETY

---

This chapter describes existing conditions on the project site that may pose potential risks to health and safety, including electrical transmission lines and natural gas wells and pipelines. The chapter also describes the effects of these health and safety factors on the project, and associated mitigation needs.

### 1. SETTING

#### a. Electrical Transmission Lines

The San Marco site is traversed by two electrical transmission line easements, which are shown on Figures 3 and 4 in section III of this SEIR. One of these easements contains two parallel PG&E transmission lines; the other contains a USA transmission line. The specific characteristics and requirements associated with these easements and lines are described below.

(1) PG&E Electrical Transmission Lines. The Pacific Gas and Electric (PG&E) transmission line easement is 137.5 feet wide and is in fact comprised of two parallel, contiguous easements--an 87.5-foot easement containing a 230 kilovolt (kV) electrical transmission line, and a 50-foot easement containing a 115 kV line. As shown on Figures 3 and 4, the two parallel PG&E lines traverse the site in a northwesterly-southeasterly direction. The 230 kV line is strung on approximately 400-foot high steel truss towers spaced at approximately 1,800-foot intervals. The 115 kV line is strung on approximately 200-foot high steel truss towers spaced at approximately the same intervals (the Land Use section of this EIR includes a ground-level photograph of the two parallel lines.)<sup>1</sup>

PG&E easement provisions prohibit the location of any structures or other permanent obstructions within the easement that would inhibit maintenance access to a transmission line or tower. Beyond these easement requirements, PG&E has not adopted any additional guidelines or criteria with respect to residential or other setbacks from transmission lines. Normal landscaping, parking areas, and fencing are generally allowable.<sup>2</sup>

---

<sup>1</sup>Dale Simpson, Land Agent, Pacific Gas and Electric Company, personal communication, April 20, 1992.

<sup>2</sup>Simpson, personal communication, April 20, 1992.

(2) USA Electrical Transmission Line. The United States of America (USA) transmission line easement is 50 feet wide and contains a 69 kV line strung on 100-to-200-foot high wooden "H-beam" poles. As shown in Figures 3 and 4, this USA line traverses the site in a southwesterly-northeasterly direction.

The USA easement is subject to provisions set by the Western Area Power Association (WAPA), a division of the US Department of Energy. Similar to the PG&E limitations, the WAPA provisions prohibit structures or other permanent obstructions to maintenance access within the easement, and limit allowable uses to parking lots, trails, and landscaping, including trees under 15 feet high. The WAPA prefers, but cannot require, a 20-foot clear radial setback from the wooden transmission line poles.<sup>1</sup>

(3) Potential Health Effects of Transmission Line EMF Exposure. The location of the three power lines on the project site raises questions regarding related health and safety risks for humans, in particular, whether, and to what degree, electromagnetic emanations from the lines might be hazardous to humans.

In general, it is known that the flow of charge particles through electrical lines produces an electromagnetic field (EMF). Electric and magnetic fields are virtually ubiquitous; they are found everywhere electricity is used. Evidence also suggests that excessive long-term human exposure to EMF from high voltage transmission can be hazardous, causing adverse health effects such as cancer.<sup>2</sup>

The potential health effect(s) of EMF from electrical current has been the subject of intense investigation, with well over 100 studies (including about 20 epidemiological studies) new in progress worldwide. The most commonly used type of electricity is AC or alternating current. In the United States, alternating current reverses direction 60 times per second. To date, no conclusive link has been established between exposure to 60-Hz<sup>3</sup> electromagnetic fields and adverse health effects has been established.<sup>4</sup> However, there is enough scientific evidence to indicate that a link may exist, and that it is possible that the health risks of high current wiring can be significant. For example, some epidemiological

---

<sup>1</sup>Jose Vigel, Realty Officer, Western Area Power Administration, US Department of Energy, personal communication, April 1992.

<sup>2</sup>Questions have also been raised regarding other health effects, specifically pregnancy outcome and general physiological and psychological health.

<sup>3</sup>The unit to denote the frequency of AC alteration is called a Hertz (Hz) in honor of Heinrich Hertz who discovered radio waves. Leonard, Alvin, et. al., California Department of Health Services, Electric and Magnetic Fields: Measurements and Possible Effects on Human Health, 1990.

<sup>4</sup>Leonard, 1990; and State of California Public Utilities Commission, Report of the California EMF Consensus Group: Issues and Recommendations for Interim Response and Policy Addressing Power Frequency Electric and Magnetic Fields (EMFs), March 20, 1992.



studies have found a statistically significant association between high-current wiring configurations and childhood cancers, and other epidemiological studies have reported statistically significant associations between certain "electrical occupations" and leukemias, lymphomas, brain cancers, and male breast cancer.<sup>1</sup>

EMFs are not unique to high voltage overhead transmission lines, which transport large blocks of energy to load centers for local distribution. Electrical distribution lines, electrical appliances, computers, and various other occupational settings also emit EMFs. The range of EMF levels associated with these various sources is identified in Appendix H.<sup>2</sup> Generally, the range of EMF exposure within homes near transmission line rights-of-way (ROWS) is not unlike levels received from other common EMF sources.<sup>3</sup> This is because ordinary structures such as homes of wood frame construction reduce the electric field so that power line EMF levels within the home are roughly ten percent below exterior levels.<sup>4</sup> As a result, interior residential exposures from home appliances are similar to the exposure levels near high voltage transmission lines.

It is also known that EMF levels diminish greatly with distance from their source. Fields from compact sources (those containing coils or magnets such as small appliances and transformers) drop off rapidly with distance; doubling the distance from a small appliance decreases the EMF exposure level eightfold. For power lines, the EMF level decreases by one-quarter to one-half with a doubling of distance from the line.<sup>5</sup>

(4) EMF Standards and Regulations. There are currently no known federal, State of California, City of Pittsburg, or PG&E regulations regarding setbacks from electric power lines to limit EMF exposure. However, research has led to various recent pertinent policies and recommendations, which are described below.

*New York State Hearings.* Although a number of studies have been undertaken to determine whether, and to what degree, electromagnetic emanations from high voltage power lines might be hazardous to humans, no specific setback standards for lines of onsite PG&E and USA power line capacities (up to 230 kV) have been identified in the literature reviewed by the EIR authors. Evidence does suggest that long-term human exposure to EMF from high voltage transmissions lines of 345 or greater kV should be considered

---

<sup>1</sup>State of California Public Utilities Commission, Report of the California EMF Consensus Group: Issues and Recommendations for Interim Response and Policy Addressing Power Frequency Electric and Magnetic Fields (EMFs), March 20, 1992.

<sup>2</sup>See Figures 3a and 3b in Appendix H.

<sup>3</sup>Ibid.

<sup>4</sup>Ibid.

<sup>5</sup>PUC, pages 17 and 18.

potentially hazardous. New York State administrative law judges who presided over an extensive 1976-1977 New York Public Services Commission (PSC) hearing on a proposed 765 kV transmission line ruled that a 350-foot right-of-way was warranted within which no person shall live or work regularly. The judges "saw no need to take any action with respect to transmission lines carrying voltages of less than 765,000 volts."

*California PUC Investigations.* In response to public concern, the California Public Utilities Commission (PUC) has initiated a process to provide more specific guidance regarding EMF exposure. On January 15, 1991, the PUC issued an Order Instituting Investigation "...to develop policies and procedures for addressing the potential health effects of electric and magnetic fields of utility facilities." The PUC acknowledged that "...the scientific community has not reached consensus on the nature of any health impacts from contact with electric and magnetic fields," and, given the ubiquitous nature of magnetic fields, the PUC also stated that "It is extremely difficult for scientists and regulators to isolate the impact of utility-related exposures on public health."<sup>1</sup>

Subsequently, the PUC in October 1991 requested recommendations for interim actions from a PUC-established "EMF Consensus Group" regarding the potential health effects from EMFs. On March 20, 1992, the EMF Consensus Group published a report advising the PUC on an interim regulatory response regarding EMF concerns. Some members advocated erring on the side of caution and argued that it is prudent to exercise foresight now by taking reasonable steps to avoid additional EMF exposure, since the costs of such actions may be comparatively minimal (i.e., in comparison to increasing setbacks later after urbanization has occurred) and might reap substantial benefit. Other members felt that without the clear establishment of a cause and effect relationship and the identification of a bio-active component of EMFs, the idea of field management to lower EMF exposure levels would not be justified on a scientific basis.<sup>2</sup>

The consensus group did agree, however, to formulate several compromise recommendations for consideration by the PUC regarding EMF research, education, policy, and procedure, including the following:

1. *Field Reduction.* The PUC should adopt an interim policy that authorizes utilities to implement no-cost or low-cost steps to reduce EMF exposure in response to public concern and scientific uncertainty.
2. *Guidance for the Public.* Concerned individuals should educate themselves on issues of EMF to decide if they wish to avoid EMF exposure. In the absence of specific knowledge of health impacts from EMFs, or which characteristics of EMF

---

<sup>1</sup>Ibid.

<sup>2</sup>Public Utilities Commission, page 19.

might be of concern, individuals should make their own decisions for action, including "prudent avoidance."

3. *Other Policy Consensus Recommendations.* Six additional policies address (a) guidance for utility workers, (b) taking public concern into account when siting new electric facilities, (c) support for authorization for utilities to undertake EMF measurements at residences and workplaces, and (d) encouragement of cooperative dialogue among industries such as appliance, electrical equipment, and the building industry.

*PG&E Requirements.* PG&E has setback requirements for transmission lines within its easements. However, these are based on access needs, not on public health concerns.<sup>1</sup> Beyond these internal easement requirements, PG&E has not adopted any additional guidelines or criteria with respect to residential setbacks from transmission lines.

*California Department of Education.* The Schools Planning Division of the California Department of Education has formulated a policy that establishes minimum setbacks between transmission line ROWs and new schools. Although the division acknowledges that there is no hard evidence proving that exposure to power lines causes adverse health effects, they have taken a conservative stance and recommend the following setbacks for new school structures:

- 100 feet from the edge of the easement of a 100-110 kV line;
- 150 feet from the edge of the easement for a 220-230 kV line; and
- 350 feet from the edge of an easement for a 500-550 kV line.<sup>2</sup>

#### b. Natural Gas Wells

(1) Onsite Gas Wells Locations. The project site is located within the Willow Pass Natural Gas Field. There are eight natural gas wells onsite, including four that are active and four that are abandoned dry holes. As shown on Figure 4, there are two active gas wells located in the eastern portion of the site and two active wells in the northern portion of the site. Well maintenance activity is currently being conducted at this northern site. There is

---

<sup>1</sup>John D. Paoli, Regional Land Superintendent, Pacific Gas & Electric Company, personal communication, April 1992.

<sup>2</sup>Stan Rose, Consultant, School Facilities Planning Division, personal and written communication, April 10, 1992.

one abandoned dry well in the northern portion of the site and three in the southwest portion of the site.<sup>1</sup>

The property owners currently lease the land on which the gas wells are located to Chevron and another oil exploration company, for gas exploration and extraction purposes. According to the applicant, the wells are not producing a substantial amount of natural gas at the current time.<sup>2</sup>

(2) State Gas Well Abandonment Regulations. Section 1723 of Title 14 of the California Code of Regulations (included in Appendix G of this SEIR) requires that abandoned gas wells be filled with cement and heavy drilling mud to avoid the risk of explosion. If abandoned wells are not filled correctly, there is a risk that natural gas could seep into the abandoned well and an explosive mixture could form.

c. Natural Gas Pipeline

PG&E has a ten-foot natural gas pipeline easement at the southwestern edge of the site. The easement grants PG&E the right to access and maintain the pipeline.

d. Fuel Storage Tank

There is a small above-ground fuel storage tank onsite located near one of the existing natural gas wells in the northern portion of the site. The tank is being used to fuel an electrical generator which in turn operates the existing gas exploration rigs.

## **2. IMPACTS**

a. Electrical Transmission and Distribution Line Impacts

(1) PG&E Electrical Transmission Lines. As shown in Table 39, there are approximately 66 single family lots and 7 multifamily units which are located within 150 feet of the edge of the 230 kV transmission line easement. There are approximately 77 multifamily units located within 100 feet of the 115 kv line easement. Based on California Department of Education setback recommendations for new schools, EMF exposure among these

---

<sup>1</sup>Stephen E. Oliva, Environmental Program Coordinator, State of California department of Conservation, written communication, August 21, 1991; and Robert A. Reid, Deputy oil and Gas Supervisor, State of California Department of Conservation, Division of Oil and Gas, personal communication, May 5, 1992.

<sup>2</sup>Al Stanley, Project Manager, Seecon Corporation, personal communication, April 16, 1992.

Table 39  
**PROJECT HOUSING UNITS NEAR ELECTRICAL TRANSMISSION LINES**

|                                                           | Villages       |           |           |           |           |           |                | Total<br>(Units) |
|-----------------------------------------------------------|----------------|-----------|-----------|-----------|-----------|-----------|----------------|------------------|
|                                                           | <u>C</u>       | <u>D</u>  | <u>H</u>  | <u>J</u>  | <u>K</u>  | <u>L</u>  | <u>M</u>       |                  |
| Units within 150 feet of the<br>PG&E 230 kV line easement |                |           |           |           |           |           |                |                  |
| Single-family lots                                        | --             | --        | 26        | 10        | --        | 30        | --             | 66               |
| Multifamily                                               |                |           |           |           |           |           |                |                  |
| Structures                                                | 2 <sup>1</sup> | --        | --        | --        | --        | --        | --             | --               |
| Units                                                     | 7              | --        | --        | --        | --        | --        | --             | 7                |
| Subtotals (units)                                         | <u>7</u>       | <u>--</u> | <u>26</u> | <u>10</u> | <u>--</u> | <u>30</u> | <u>--</u>      | <u>73</u>        |
| Units within 100 feet of the<br>PG&E 115 kV line easement |                |           |           |           |           |           |                |                  |
| Single-family lots                                        | --             | --        | --        | --        | --        | --        | --             | --               |
| Multifamily                                               |                |           |           |           |           |           |                |                  |
| Structures                                                | 3 <sup>2</sup> | --        | --        | --        | --        | --        | 5 <sup>3</sup> | --               |
| Units                                                     | 17             | --        | --        | --        | --        | --        | 60             | 77               |
| Subtotals (units)                                         | <u>17</u>      | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>60</u>      | <u>77</u>        |
| Units within 100 feet of the<br>USA 69 kV line easement   |                |           |           |           |           |           |                |                  |
| Single-family lots                                        | --             | 18        | --        | --        | 6         | 15        | --             | 39               |
| Multifamily                                               |                |           |           |           |           |           |                |                  |
| Structures                                                | --             | --        | --        | --        | --        | --        | 8              | --               |
| Units                                                     | --             | --        | --        | --        | --        | --        | 120            | 120              |
| Subtotals (units)                                         | <u>--</u>      | <u>18</u> | <u>--</u> | <u>--</u> | <u>6</u>  | <u>15</u> | <u>120</u>     | <u>159</u>       |
| TOTALS (UNITS)                                            | <u>--</u>      | <u>42</u> | <u>26</u> | <u>10</u> | <u>6</u>  | <u>45</u> | <u>180</u>     | <u>309</u>       |

SOURCE: Wagstaff and Associates, based on review of project development plans (Figure 5). The term "units" refers to single-family lot lines and multifamily structures.

<sup>1</sup> Includes one entire structure and one unit within a second structure.

<sup>2</sup> Includes two entire structures and five units within a third structure.

<sup>3</sup> Includes two entire structures and a portion of three additional structures.

approximately 140 residential units may represent a potentially significant impact. However, because there is no conclusive evidence regarding the health risks of EMF exposure, the significance of this impact cannot be determined.

(2) USA Electrical Transmission Line. Due to the relatively low EMF levels along the 69 kV USA power line, and because the California Department of education does not recommend setbacks between schools and power line easements under 100 kV, it is assumed that the potential for health risks associated with this 69 kV line would be less than significant.

b. Natural Gas Wells

The applicant plans to abandon the existing gas wells on the San Marco site as the project is developed. According to the applicant, the current gas well leases stipulate that the lessees shall give up all surface rights to the land as the portions of the site on which the gas wells are located are developed.<sup>1</sup>

Two of the existing wells, one active and one that was abandoned in April of 1992, are located in proposed Village B. One active well is located in proposed Village C. Two abandoned dry holes are located in proposed Village E. Two active wells are located in proposed Village H. One abandoned dry well is located in proposed Village N. Unless these gas wells are properly abandoned to current Division of Oil and Gas (DOG) standards specified in Section 1723 of Title 14 of the California Code of Regulations, future project residents in Villages B, C, E, H and N could be subject to the risk of explosion. This risk represents a *significant adverse impact*.

c. Natural Gas Pipeline

PG&E has a ten-foot natural gas pipeline easement at the southwestern corner of the site. The easement grants PG&E the right to access and maintain the pipeline. As shown in Figure 5, Ranchette Lot 1268 proposed in Village N in the southwestern portion of the site would encroach into the pipeline easement. Home construction and other improvements made to this lot would be required to comply with related PG&E easement provisions. The size of the lot provides adequate design flexibility to readily avoid conflicts with easement provisions.

d. Fuel Storage Tank

It is possible that fuel spills have occurred around the fuel storage tank or that the tank has leaked and that soil in the vicinity of the tank could be contaminated. If fuel spills or leaks have occurred and the soil is contaminated, construction workers could be exposed to

---

<sup>1</sup>Al Stanley, Project Manager, Seecon Corporation, personal communication, April 16, 1992.

contamination in the short-term during the project site preparation work and future residents could be exposed to contamination over the long-term. Until appropriate remediation is completed, this possibility represents a *significant adverse impact* of the project.

### 3. MITIGATION MEASURES

#### a. Electrical Transmission and Distribution Lines

The significance of the health risk associated with different levels of EMF exposure has not been officially established. However, the following measures are suggested to reduce such risk potentials:

1. Setbacks. The applicant should endeavor to redesign the site plan such that proposed project residential structures are located at least 150 feet from the edge of the 87.5-foot 230 kV PG&E transmission line easement, and 100 feet from the 50-foot 115 kV PG&E transmission line easement. These setback criteria would reflect the setback recommendations for new schools formulated by the School Facilities Planning Division of the California State Department of Education. This measure would require the relocation of up to 250 proposed residential units.

2. Disclosure. Prospective residents of all project homes within 200 feet of the 230 kV line, 150 feet of the 115 kV line, and 100 feet of the 69 kV line easement edge should be notified in writing by the city or applicant of the potential EMF health risks associated with power transmission lines. This could be achieved by requiring the project proponent to include such disclosures in the sales and rental materials to be signed by future project residents.

#### b. Natural Gas Wells

The following two mitigation measures should be implemented to reduce project natural gas well hazard impacts to a less than significant level:

(1) Remediation. Pursuant to Section 3208.1 of the Public Resources Code, the applicant would be required to contact the State Division of Oil and Gas district office in Woodland prior to commencement of any residential construction within 500 feet of the well, to determine whether the well has been abandoned to current abandonment standards (as required in Section 1723 of Title 14 of the California Code of Regulations), and whether remedial work on a particular well would be necessary.<sup>1</sup>

---

<sup>1</sup>Stephen E. Oliva, Environmental Program Coordinator, State Department of Conservation, written communication, August 21, 1991.

(2) Avoid Abandoned Wells. Revise the site plan to avoid construction of residential units over the wells. If avoidance is not possible, State Division of Oil and Gas (DOG)-approved vent systems should be installed to collect and disperse any gas vapors that may be emitted from the wells.<sup>1</sup>

c. Natural Gas Pipeline

Development entitlements (CC&Rs) for ranchette lot 1268 in Village N at the southwestern corner of the site should include the necessary building setback and other limitations necessary to avoid encroachment into PG&E's gas pipeline easement.

d. Fuel Storage Tank

Prior to commencement of residential construction within 500 feet of the existing fuel storage tank, the tank should be removed, the soils around the tank tested for contamination and, if necessary, the soil cleaned or removed to ensure that the site is devoid of any contamination from the fuel tank. Such removal would require a permit from the Environmental Health Division of the Contra Costa County Health Services Department. If contaminated soils are discovered, a remediation plan would need to be submitted to and approved by the Toxic Substances Control Division of the California Environmental Protection Agency (Cal-EPA). Implementation of an approved remediation plan would be expected to reduce related project impacts to a less than significant level. If any soil or water pollution is discovered during project construction, an Unauthorized Release Form and any remediation plan must be sent to Contra Costa County and the Regional Water Quality Control Board.

---

<sup>1</sup>Stephen E. Oliva, Environmental Program Coordinator, State Department of Conservation, written communication, August 21, 1991.



**V. PROJECT CONSISTENCY WITH ADOPTED  
LOCAL AND REGIONAL PLANS**

---

## V. RELATIONSHIP TO ADOPTED PLANS AND POLICIES

---

The project site is located in the City of Pittsburg and is subject to review and approval by the Pittsburg City Council and Planning Commission. As warranted by state law, development review in the City of Pittsburg is guided by the policies set forth in the Pittsburg General Plan (1988).

Section 15125(b) of the CEQA Guidelines require EIRs to "...discuss any inconsistencies between the proposed project and applicable general and regional plans." The Guidelines indicate that the objective of the discussion is to provide information to find ways to modify the project to reduce any identified inconsistencies with relevant plans and policies. This EIR chapter evaluates project relationships to pertinent goals and policies of the Pittsburg General Plan and adopted regional plans, including the Bay Area Air Quality Management District's (BAAQMD) 1991 Clean Air Plan, the Association of Bay Area Governments (ABAG) San Francisco Bay Area Regional Plan (1980), and the San Francisco Regional Water Quality Control Board's (WQCB) 1991 Water Quality Control Plan.

A Development Agreement was entered into by the City of Pittsburg and the applicant on August 1, 1990. The Development Agreement specifies the terms under which the proposed project would be developed. The Development Agreement exempts the project from certain city policies. Page 5 of the Development Agreement states that *"To the extent that the proposed Project...differs from the current zoning regulations, the provisions of this agreement shall prevail."* Page 7 of the agreement states that *"The parties recognize that in order for the project site to accommodate up to 2,938 mixed residential units, grading in excess of that permitted under the applicable Hillside regulations will be necessary. City agrees that in its review and approval of Developer's grading plans, it shall permit additional grading, which is necessary to construct infrastructure and building pads to effectively and efficiently accommodate the maximum number of units Developer is permitted and proposes to construct, subject to the normal property development process of the city."*

### A. PITTSBURG GENERAL PLAN

The following section evaluates the relationship of the proposed project to selected relevant policies set forth in the Pittsburg General Plan.

#### 1. General Plan Land Use Designation

The Pittsburg General Plan Land Use Map designates several land uses for the project site including: *RR-Rural Residential*, *RE-Residential Estate*, *RL-Residential Low Density*, *RM-Residential Medium Density*, *PK-Parks and Recreation*, *OS-Open Space*, and an *Agricultural Preserve* overlay.

The four *Residential* land use designations are distinguished by the varying minimum amounts of land required per housing unit, as shown in Table 40.

The *Parks and Recreation* designation is given to areas designated for community and neighborhood parks. The general plan indicates a proposed community park on the project site. The project proposed by the applicant would include one community park, two community recreation areas, and three village parks.

The city's Land Use Map also identifies the approximately 370 acres of the site which have been subject to an *Agricultural Preserve* overlay land use classification. The *Agricultural Preserve* designation is given to agricultural lands such as grazing lands that are likely to remain as open space for at least ten years under Williamson Act agreements. The general plan states that "If these lands are subject to no other environmental constraints and can be provided with urban services, these lands are likely to be suitable for urban expansion after the contracts have expired or have been cancelled."<sup>1</sup> The Williamson Act agreements on the project site are scheduled to expire in 1997.

The site also contains a General Plan Land Use Element designated "major ridgeline," several "minor ridgelines" and a "stream" designation.<sup>2</sup> The *Land Use Element* includes several policies relating to preservation of "major ridges" and "streams." Other elements of the general plan also contain policies which encourage the preservation of riparian and other wildlife habitat, and to preserve and enhance the open space, habitat, recreational, and aesthetic values of creeks.<sup>3</sup> This language would apply to the drainage channels on the site, particularly Shore Acres Creek.

## 2. General Plan Density Limitations

As mentioned above, the proposed residential uses for the site are generally permitted by current Pittsburg General Plan land use designations. The proposed project would divide the project site into 13 "villages" consisting of varying residential densities and housing types running from *Rural Residential* to *Residential High Density* characteristics. The densities would range from 42 "ranchettes" with a density of 0.4 units per gross acre, to numerous apartment structures with a density of 16.9 units per gross acre.

The apartment portion of the project, Village B, would exceed the allowable density under the current *Residential Medium Density* land use designation. As shown in Table 40, the

---

<sup>1</sup>Pittsburg General Land Use Plan, p. 27.

<sup>2</sup>City of Pittsburg General Plan, Figure 2.

<sup>3</sup>City of Pittsburg General Plan, pages 28, 35, and 61.

Table 40  
DENSITIES OF GENERAL PLAN RESIDENTIAL DESIGNATIONS

---

| <u>General</u>                | <u>Density Range</u>        |
|-------------------------------|-----------------------------|
| RR Rural Residential          | 0.05 - 0.2 units/gross acre |
| RE Residential Estate         | 0.2 - 3.0 units/gross acre  |
| RL Residential Low Density    | 3.1 - 5.0 units/gross acre  |
| RM Residential Medium Density | 5.1 - 14.0 units/gross acre |

---

SOURCE: City of Pittsburg, Pittsburg General Plan, September 1988

Note: The Pittsburg General Plan defines gross developable acre as the "...site area less the area occupied by nonresidential uses and areas of unmitigable geological and physical constraints, plus half of the area of streets abutting the site."

maximum allowable density for the *Residential Medium Density* is 14.0 units per gross acre. Village B includes apartment densities of up to 16.9 units per gross acre, a density consistent with the city's *Residential High Density* designation. However, the average density of the project is 4.6 units per gross acre.

The site currently has a temporary "study" zoning ordinance classification. The proposed zoning is *Planned Development District (PD)* which specifies that the "...total number of dwelling units in a PD plan may not exceed the number permitted by the General Plan density for the total area of parcels designated for residential use and for open space." Assuming that the site were designated PD, the proposed density would be consistent with city policy.

### 3. General Plan Land Use Policies

The city's general plan also includes a number of specific land use policies that are pertinent to the project. These policies and corresponding project relationships, are identified below:

#### Community Image

Design aesthetically pleasing roadways, lined with trees or other appropriate landscaping, that connect Pittsburg neighborhoods and serve planned development. (Policy 2.1A, p. 5.)

#### Project Relationship

Figure 10 herein indicate that the edges of the primary project streets--Willow Pass Road, Leland Road, and Street "B"--and smaller residential streets, would be lined with trees. Intersections and medians would be accented with trees. The project would be consistent with this policy.

- r Preserve the predominant single-family residential character of Pittsburg. (Policy 2.1D, p.6.)

Approximately 65 percent (415 acres) of the project site would contain single-family units and 22 percent (139 acres) would contain multi-family units. However, approximately 46 percent (1,363) of the 2,938 project units would be single-family and 54 percent (1,575) would be multi-family units.

- r Preserve the feel of a city surrounded by open space, and preserve view corridors to the hills and to the waterfront. (Policy 2.1E, p.6.)

The project as proposed would be partially consistent with this policy. The city would remain surrounded by open space; however, the project would extend urban development more than three quarters up the side of

r  
r  
r  
r

the hillsides in the Southwest Hills area. The amount of open space south and above the project would appear to be minimal from many vantage points below. This inconsistency with the general plan could be corrected through implementation of mitigation measures recommended in this SEIR.

View corridors to the hills and the waterfront would not be disrupted by the project.

Remove wooden poles and overhead utility lines other than transmission lines in central areas, and ultimately throughout the city, and require undergrounding of utilities installed to serve all new developments. (See also policy 5.3J.)

The project is expected to underground new utilities and would therefore be consistent with this policy.

*This policy applies only to utility lines serving users and not to transmission lines such as the PG&E transmission lines that run from the hills to the PG&E plant in the Northwest River Area. (Policy 2.1G, p. 6.)*

- r Endeavor to retain existing creekway patterns, hillsides over 30 percent slopes, and major ridgelines; make open space more accessible to the public with a park and trail system that takes advantage of surrounding open space. (Policy 2.1K, p. 6.)

r  
r  
r

The project as proposed is inconsistent with this policy due to the proposed filling of Shore Acres Creek and other ephemeral drainageways, grading of slopes over 30 percent (including 60 percent and 90 percent slopes), and modification of a major ridgeline area. The project would provide a pedestrian trail system onsite to provide access to onsite parks. Implementation of EIR Alternative C, the Mitigated Alternative, would resolve this inconsistency.

Growth Strategy Policies

Seek cooperation of Contra Costa County and developers to secure annexation to Pittsburg of hillside areas designated for urban use prior to granting development approvals. (Policy 2.2H, p. 9.)

Allow urban development only in accord with a plan for full urban services (police, fire, parks, water, sewer, streets, and storm drainage) to which all providers are committed. Areas lacking full services are deemed outside the urban-service area and are unsuited for urban development regardless of Plan designation until services are assured. (Policy 2.2I, p. 9.)

Project Relationship

The project site, along with other large parcels in the Southwest Hills Area, has been annexed by the city.

If constructed today, the project would be inconsistent with this policy because current police and fire services would not be adequate to serve the proposed





project. Police and fire mitigation measures recommended in the Municipal Services section (IV.H) of this SEIR would have to be implemented for the project to achieve consistency with this policy.

Subarea Policies (Hillside Areas)

r Encourage development which is sensitive  
to the environmental and aesthetic  
qualities of the hillside areas, especially  
r major ridgelines. (Policy 2.3Q, p. 13.)  
r  
r

Do not permit development which does  
not take into account hazardous physical  
and environmental conditions in the  
Hillside areas. (Policy 2.3R, p. 13.)  
r  
r

Preserve land under Williamson Act  
contract in agriculture consistent with state  
law until urban services are available and  
development would occur in an orderly  
fashion. (Policy 2.2T, p. 13.)  
r  
r  
r

r Encourage development, especially of  
roads, that is sensitive to the topography  
of the hillside areas. To achieve  
r adequate circulation in the hillside areas,  
r it may be necessary to construct roads  
r and other public infrastructures which  
traverse major ridgelines. (Policy 2.2W,  
p. 13.)

Project Relationship

The project as proposed is inconsistent  
with this policy for the reasons discussed  
above under the project relationship to  
Policy 2.1K. Implementation of Alternative  
C, the Mitigated Alternative, would resolve  
this inconsistency.

As proposed, the project is inconsistent  
with this policy if the associated public  
health and safety risks identified in this  
SEIR are not adequately addressed.  
Implementation of mitigation measures in  
the Soils and Geology and Public Health  
and Safety sections of this EIR (IV.D and  
IV.L) would resolve this inconsistency.

The project design does not retain the  
general plan *Agricultural Preserve* overlay  
on the approximately 370 acres of  
Williamson Act contracted land. However,  
under the current contract provisions, no  
development of these lands could take  
place prior to the 1997 contract expiration  
date. Alternately, the applicant could  
request cancellation of the existing  
Williamson act contracts.

The project as proposed is inconsistent  
with this policy due to the mass grading  
approach proposed to accommodate the  
project. Implementation of Alternative C,  
the Mitigated Alternative, would improve  
project consistency with this policy.

Encourage the incorporation of links to  
trails and other park and recreation

The project is generally consistent with  
this policy. Pedestrian trails and



facilities into plans for development in the hills. (Policy 2.3X, p. 13.)

sidewalks are planned between all internal park and recreation facilities and on all streets. Future park and recreation facilities associated with anticipated development of the Alves and other adjacent and nearby properties would eventually warrant inter-project trail connections. Provisions should be included in the San Marco project to accommodate this eventuality.

Prepare specific plans or development agreements for the Southwest Hills and other areas designated for development. (Policy 2.3Y, p. 13.)

The City of Pittsburg and the applicant have entered into a Development Agreement for the proposed project.

#### Residential Areas

#### Project Relationship

Maintain the single-family home as the preponderant dwelling type. (Policy 2.B, p. 18.)

Please refer to the statement regarding the relationship to policy 2.1D above.

Broaden the choice of type, size, and price of single-family homes. (Policy 2.5B, p. 18.)

The project would be consistent with this policy; over 50 percent of the single-family homes would be affordable to *moderate* income households, and the homes vary in type, size, and price.

Ensure that residential development shares the cost of providing services and amenities for Pittsburg residents. (Policy 2.5D p. 18.)

The Development Agreement ensures that the applicant shall bear the cost burden of providing the necessary services and amenities to residents of the project.

Discourage residential subdivisions with large unusable areas. (Policy 2.5F, p. 18.)

The project is consistent with this policy. As proposed, the project "mass grading" plan estimates existing large unstable (landslide and slope creep) areas on the site. However, measures recommended in section IV.D.3 of this SEIR to mitigate differential settlement and other impacts of the project's extensive and deep fill areas must also be effectively implemented to achieve consistency with this policy.

✓ Encourage residential subdivisions that are sensitive to topography and provide for functional and aesthetically pleasing neighborhoods. Grading should be sensitive to existing terrain. (Policy 2.5G, p. 18.)

The project is inconsistent with this policy. The development and grading plan are not sensitive to the site's hilly topography. The aesthetic impacts of the project are described in section IV.F of this SEIR (Visual Factors). The project as planned would require mass grading of steep slopes (up to 90 percent slopes) involving cuts up to 120 feet deep and 130 feet high. An estimated 7.5 to nine million cubic yards of earth would be moved to accommodate the project.

Encourage the construction of larger dwelling units. (Policy 2.5H, p. 18.)

The project promotes this policy; some of the proposed homes include four or five bedrooms.

Require reasonable contributions from developers, as appropriate and required, for provision of community facilities and services. (Policy 2.5I, p. 18.)

The project is partially consistent with this policy. The applicant has proposed to provide one 36-acre community park, two community recreation sites (three and five acres), three village parks (less than one acre each), and a pedestrian trail system. Provisions for the completion of such facilities in a sequence which relates adequately to the needs of the project residential phasing would be required, as specified in the Municipal Services section (IV.H) of this EIR, to fully achieve consistency with this policy.

r  
r  
r  
r

#### 4. Open Space Policies

There are a number of general plan *Open Space Element* policies that are relevant in consideration of this residential project. Relevant open space policies and corresponding project relationships are summarized below:

##### Open Space Policies

Retain major ridgelines as open space. (Policy 3.5A, p. 27.)

##### Project Relationship

The project as proposed is inconsistent with this policy because it proposes development on a "major ridgeline" area as identified on Figure 2 of the Pittsburg General Plan. Section IV.A.3 of this EIR identifies mitigations to achieve project consistency with this policy.

- r Preserve natural creek corridors of significance to the City. (Policy 3.5B, p. 27.)

The project as proposed would be inconsistent with this policy because it would fill Shore Acres Creek. Measures are recommended in sections IV.A.3, IV.F.3, and IV.G.3 of this SEIR to preserve the creek.

r

Require that open space which is designated as a condition of development approval be permanently restricted to open-space use by recorded map or deed. (Policy 3.5F, p. 28.)

The project could achieve consistency with this policy if such restrictions on all project open space areas were adopted by the city as a condition of project approval.

Establish standards for the management and maintenance of open space within subdivisions.

The project could achieve consistency with this policy if an adequate open space management and maintenance program were required by the city as a condition of project approval. Also see the discussion of the relationship of the project with Policy 9.1B, below.

*Regulations should include standards to ensure control of potential hazards and mechanisms for repair of damage.* (Policy 3.5G, p. 28.)

Require revegetation of cut-and-fill slopes. (Policy 3.5H, p. 28.)

Implementation of erosion control mitigation measures identified in the Soils and Geology section (IV.D) and Drainage and Water Quality section (IV.E) of this SEIR would provide for consistency with this policy.

- r Require setbacks from creeks and drainage channels based on individual creek and stream characteristics, including recreational and aesthetic value. (Policy 3.5I, p. 28.)

The project as proposed is inconsistent with this policy. Shore Acres Creek and the westernmost drainage channels are General Plan recognized "streams or drainage channels" as shown on Figure 41 of this SEIR. No setbacks proposed from Shore Acres Creek or the other onsite drainage channels. Measures are recommended in section IV.G.3 of this SEIR to improve consistency with this policy.

r  
r  
r  
r

Reserve stream-channel setbacks necessary for flood control and habitat maintenance as open space. (Policy 3.5K, p. 28.)

Same as relationship with policy 3.5I, above.

## 5. Parks and Recreation Policies

The general plan sets forth several parks and recreation policies that are pertinent to the proposed project. These policies and corresponding relationships are summarized below:

### Park Standards and Funding Policies

Establish a standard of five acres of public park per 1,000 residents, with park facilities to be within one-half mile of all homes. (Policy 4.1C, p. 32.)

Minimize substitution of private recreational facilities for public parks in order to ensure permanent availability for use by the entire community. (Policy 4.1E, p. 32.)

- r Establish a neighborhood park standard of three acres for every 1,000 residents. (Policy 4.1G, p. 32.)

### Project Relationship

The project includes 47 acres of parkland to serve an estimated project population of 7,730 people, providing approximately six acres of park per 1,000 people. The project is consistent with this policy provided that the proposed parks are completed when needed and are open to the public. (The Development Agreement indicates that the parks would be dedicated to the city.) Each project unit would be located within a one-half mile radius of a public park.

The project would be consistent with this policy. The Development Agreement specifies that the parks would be dedicated to the city.

The proposed community recreation areas and village parks total 11 acres, providing approximately 1.4 acres of neighborhood park per 1,000 residents. (Based upon the applicant's description of these facilities, the proposed "community recreation areas" and "village parks" are assumed to be similar to neighborhood parks.) However, as discussed below, the project exceeds the community park standard.

Establish a community park standard of two acres for every 1,000 residents.

*Table 4.3 shows that Pittsburg already has more than enough community parkland. (Policy 4.1H, p. 32.)*

Whenever possible, require dedication of fully useable parkland rather than in-lieu fees. In-lieu fees should meet the cost of purchasing parkland if land is not dedicated. (Policy 4.1J, p. 32.)

Require all residential developers, including apartment builders, to provide park and recreation facilities either by reserving sites or by paying a fee in lieu of dedication. (Policy 4.1K, p. 32.)

Strongly encourage the development of landscaped and dedicated open space, parkways, trail systems and special recreational facilities. (Policy 4.1M, p. 32.)

#### Park and Recreation Facilities, Planning, and Management

Pursue the development of a recreational trail system utilizing available public utility rights-of-way, and linking with other recreational facilities where possible. (Policy 4.2F, p. 35.)

The project is consistent with this policy. The proposed 36-acre park provides approximately 4.7 acres of community park per 1,000 residents.

The project is consistent with this policy; it provides usable park and recreation facilities on site.

Please refer to the discussion of project consistency with Policy 4.1J, above.

The project is consistent with this policy due to the provision of parks, trails, and other onsite recreational facilities.

#### Project Relationship

The project is consistent with this policy because it includes a trail system along the PG&E utility right-of-way. Please refer to the discussion of project consistency with Policy 2.3X regarding possible trail connections with other anticipated future southwest area developments.

### 6. Public Facilities, Institutions and Utilities Policies

The pertinent policies of the *Public Facilities, Institutions, and Utilities Element* of the General Plan and corresponding relationships are summarized below:

#### Schools Policies

Ensure that sufficient school classrooms will be available before approving

#### Project Relationship

As discussed in the Municipal Services section of this SEIR (IV.H), mitigation



residential development projects. (Policy 5.1D, p. 39.)

measures to reduce project school enrollment impacts would have to be implemented for the project to achieve consistency with this policy.

Institutions, Cultural Facilities  
and Historic Resources Policies

Project Relationship

r Locate child-care facilities in residential  
r areas if there is sufficient available space  
r for outdoor activity, and traffic, parking  
r and noise are controlled. Determine need  
r for and, where applicable, location of  
r child-care facilities at the time a specific  
r plan, tentative map or development plan is  
r approved. (Policy 5.2J, p. 41.)

The general plan policy states that the need for child care facilities should be determined at the time a tentative map or development plan is approved. A recent City of Pittsburg survey of existing day care facility capacities in the community determined that three of the six day care providers in the City had no waiting list.

Utilities and Public Services Policies

Project Relationship

Require buffer landscaping and multiple use, where feasible, of utility sites and rights-of-way to harmonize with adjoining uses. (Policy 5.3C, p. 42.)

The project is consistent with this policy; pedestrian trail and landscaping are proposed in the PG&E transmission line ROW.

Require the undergrounding of all utility lines adjacent to new construction as a condition of development. (Policy 5.3J, p. 43.)

It is expected that the project would include undergrounding of all new utility lines and that therefore, the project would be consistent with this policy.

7. Traffic and Circulation Policies

In the project vicinity, State Highway 4 is a general plan-designated arterial street, and Willow Pass Road and Avila Road are general plan-designated collector streets. The Transportation section of this SEIR (IV.C) discusses the anticipated effect of the project on these and other streets. There are a number of general plan traffic and circulation policies pertinent to the proposed project. These policies and corresponding project relationships are summarized below:

Standards for Traffic  
and Roadway Improvements Policies

Project Relationship

Strive to maintain traffic LOS C or better as the standard at all intersections with LOS D during no more than three hours

The project would result in LOS D or worse at several intersections during either the AM or PM peak hour.

of the day (AM, PM, and noon peaks).  
(Policy 6.1A, p. 45.)

Implement to the extent feasible  
Circulation Element improvements prior to  
deterioration in levels of service below the  
stated standard.

*Development approvals should require  
reasonable demonstration that traffic  
improvements necessary to serve the  
development without violating the standard  
will be in place in time to accommodate  
trips generated by the project. (Policy  
6.1F, p. 45.)*

Improve intersections as needed to  
maintain traffic levels of service and safety  
on major roadways.

*Specific improvements should be identified  
and implemented on the basis of detailed  
traffic studies. Improvements may include  
intersection approach lane expansion,  
related channelization improvements and  
traffic signal installations. Intersections  
and interchanges where needed  
improvements are projected are listed in  
Table 6.1. Other intersections not  
identified in the table also may need  
future improvements. (Policy 6.1G, p. 45.)*

#### Freeways and Arterial Roadways

r Recognize and preserve the scenic  
r qualities of Highway 4. (Policy 6.2F,  
r p. 47.)  
r  
r

Maximize the carrying capacity of arterial  
roadways by controlling the number of  
intersections and driveways, minimizing

Mitigations recommended in section IV.C.3  
of this SEIR would improve LOS to  
acceptable levels at all critical  
intersections.

The project does not include any  
proposals for offsite circulation system  
improvements. This SEIR identifies all  
improvements needed to address current  
traffic, future base case traffic, and project  
generated traffic.

The project does not include proposals for  
offsite intersection improvements. This  
SEIR identifies all offsite intersection  
improvements necessary to maintain  
acceptable levels of service and safety on  
the local and regional circulation system  
affected by the project.

The project as proposed is inconsistent  
with this policy. Implementation of the  
mitigation measures described in section  
IV.F.3 of this SEIR would improve  
consistency with this policy.

The project is generally consistent with  
this policy. This SEIR makes  
recommended design changes for those

residential access, and requiring sufficient onsite parking to meet the needs of each project.

limited areas where proposed roadway design is problematic.

*Additional guidelines for arterial access include providing smooth ingress/egress to development fronting on arterials. This includes designing parking areas so that traffic turning into the parking areas does not stack up on the arterial roadway, combining driveways to serve small parcels, and maintaining adequate distance between driveways and intersections to permit efficient traffic merges. (Policy 6.2G, p. 47.)*

Upgrade or extend the hillside access routes at Bailey Road, Buchanan Road, Range Road, and James Donlan Boulevard, as development potential warrants. (Policy 6.2P, p. 48.)

The project does not include proposals to upgrade any of these roads. However, this SEIR includes recommendations for project participation in several improvements to Bailey Road.

Collector and Local  
Roadways Policies Project Relationship

Design local roadways and implement traffic-control measures to keep traffic below 500 vehicles per day. (Policy 6.3A, p. 48.)

The project design is consistent with this policy.

Design local roadways and implement traffic-control measures to keep traffic on collector roadways at 3,000 vehicles per day or less, where possible. (Policy 6.3B, p. 48.)

The project design is consistent with this policy.

Avoid adding traffic to roadways carrying volumes above the standards, and consider traffic control measures where perceived nuisance is severe.

The project design is consistent with this policy.

*Traffic above the standards may cause residents to become concerned about noise, speeding, child safety, and loss of*

*privacy. The limit of tolerance for residential streets is about 5,000 cars per day. (Policy 6.3E, p. 49.)*

Design local roadways as short, discontinuous roadways to discourage use by through traffic.

*Implementation of improvements for arterial and collector roadways will also reduce diversion to local roadways. (Policy 6.3F, p. 49.)*

New development should not be expected to use existing collector roadways already carrying high traffic volumes. (Policy 6.3G, p. 49.)

The project design is consistent with this policy.

The project design is consistent with this policy.

#### Transportation Systems Management

Evaluate sites for carpool parking and establish standards for such site development. (Policy 6.4J, p. 50.)

The project as proposed does not establish such sites; however, this SEIR recommends construction of a 200-300 space park-and-ride lot on or near the project site.

#### Bikeways and Pedestrian Paths Policies

Develop bike routes that provide access to schools, parks and to and along the riverfront. (Policy 6.5C, p. 51.)

#### Project Relationship

The preliminary plans submitted to the City by the applicant do not propose any bike routes. However, page 3 of the Development Agreement specifically mentions that the applicant agrees to "...develop and construct on the property...walk and bicycle paths."

Ensure safe, pleasant and convenient pedestrian paths, sidewalks, and trails to accommodate all segments of the population. (Policy 6.5D, p. 51.)

The project includes provisions for a comprehensive sidewalk system and a limited amount of trails through the proposed park areas and in the PG&E transmission line easement.

Continue to support programs to improve the mobility of the elderly and

The project would be required to meet all provisions in the city's building code for

handicapped, remove existing architectural barriers, and require that new development be accessible to those with physical impairments. (Policy 6.5E, p. 51.)

handicapped accessibility. No special additional provisions to address handicapped or elderly needs have been proposed.

Develop a series of continuous pedestrian systems within...residential neighborhoods. (Policy 6.5G, p. 51.)

The project achieves consistency with this policy by providing sidewalks on every street and pedestrian paths in open space areas.

## 8. Housing Element

There are a number of specific general plan policies for housing contained in the existing adopted *Housing Element* which are particularly relevant in consideration of this residential project. The Draft Housing Element is currently under state review. These policies and corresponding relationships are summarized below:

### Affordable and Senior Citizen Housing Policies

Regulate new residential development so as to continue to foster a variety of housing types, densities and costs, including low- and moderate-income units, while preserving the character of the individual neighborhoods, and discouraging the concentration and encouraging the dispersal of assisted and low-income housing. (Policy 7.1A, p. 52.)

### Project Relationship

As indicated by the findings in section IV.B.3 of this SEIR, the project is consistent with this policy because it provides a variety of housing types, densities, and costs, including some single-family units and apartments which would be affordable to some above moderate, moderate, and low income families. However, no project units would be affordable to very low-income families.

### Potential New Housing and Housing Sites

Do not allow housing developments to be built in environmentally hazardous areas that cannot support such development. (Policy 7.2A, p. 54.)

### Project Relationship

Mitigation measures included in section IV.D (Soils and Geology) of this SEIR would reduce seismic and other geotechnical hazard potentials to less than significant levels. Mitigation measures included in section IV.L (Public Health and Safety) would be expected to reduce other project-related health and safety hazards to less than significant levels.

Ensure that housing will have ready access to neighborhood commercial facilities and to the community circulation system. (Policy 7.2D, p. 54.)

The project is consistent with this policy. The Oak Hills Shopping Center is located approximately one mile east of the site on Bailey Road. The project site will have ready access to Highway 4, Willow Pass Road, Bailey Road, Leland Road, and BART. The project would be more consistent with this policy if it included its own neighborhood commercial center.

- r Ensure that housing will exist in a healthy
- r environment free of through traffic and
- r served by adequate public utilities,
- r facilities and services, such as water and sewers, schools, parks, paved streets, lighting, and police and fire protection. (Policy 7.2E, p. 54.)

The project is consistent with this policy. Residential units are sited on local streets with cul-de-sacs eliminating through traffic.

If municipal service mitigation measures recommended in this SEIR were implemented, the project would be served by adequate municipal services.

Allow for a variety of housing types to be built on residential sites to increase choice for Pittsburg households. (Policy 7.2H, p. 54.)

The project complies with this policy by offering single-family homes of varying sizes, as well as apartments and townhomes.

Encourage the development of housing on larger size lots which will provide opportunities for accommodating a wider range of housing units and a broader income distribution among residents. (Policy 7.2I, p. 54.)

The project is consistent with this policy. The project proposes 42 ranchette lots that range from approximately one-quarter of an acre to approximately 23 acres in size. The average ranchette lot size is approximately 2.5 acres.

#### Access to Housing Policies

Ensure that adequate provisions are made in new developments for families with children, including provisions for amenities such as tot lots and play yards. (Policy 7.5D, p. 59.)

#### Project Relationship

This project is generally consistent with this policy by providing a community park, recreation areas, and village parks (including tot lots).

## 9. Conservation Element

The *Conservation Element* and the *Safety Element* form the *Environmental Management* component section of the general plan. The *Conservation Element* contains policies for protecting wetlands, creeks, wildlife vegetation, and air quality. Relevant policies and project consistency are discussed below:

### Creeks and Watershed Protection Policies

### Project Relationship

- r Preserve and enhance Pittsburg's creeks for their value in providing visual amenity, drainage, and wildlife habitat. (Policy 8.1A, p. 61.)

This project as proposed is inconsistent with this policy because it includes the filling of all creeks on the site. Implementation of mitigations recommended in section IV.G.3 of this SEIR would resolve this inconsistency.

- r Where possible, integrate creeks with trails and other recreational open space. Encourage provision of public access to creek corridors. (Policy 8.1C, p. 61.)

The project as proposed is inconsistent with this policy because Shore Acres Creek would be filled, thereby eliminating the opportunity for such integration. Section IV.G.3 of this SEIR includes recommendations for preserving Shore Acres Creek and the other creeks on the project site.

Discourage culverting of creeks of significance to the City. (Policy 8.1F, p. 62.)

Assuming that Shore Acres Creek is a creek of significance to the city (it is featured on Figure 2 in the Pittsburg General Plan), the project would be inconsistent with this policy. Implementation of mitigations recommended in section IV.G.3 of this SEIR would resolve this inconsistency.

- r Protect existing stream channels by requiring buffering or landscaped setbacks and storm runoff interception. (Policy 8.1H, p. 62.)

The project as proposed is inconsistent with this policy because the project involves filling of stream channels and grading of stream banks. Implementation of mitigations recommended in section IV.G.3 of this SEIR would resolve this inconsistency.

Wildlife and Vegetation Policies

- r Protect natural environments in recognition of their importance as wildlife habitats and visual amenities. (Policy 8.2A, p. 63.)
  
- r Manage open space in a manner consistent with wildlife protection. (Policy 8.2B, p. 63.)

Project Relationship

The project as proposed is inconsistent with this policy. Wetland and intermittent streambed habitat would be lost due to proposed extensive grading of the site. SEIR section IV.G.3 includes measures to mitigate these impacts.

The project as proposed is inconsistent with this policy; the project does not include provisions for the management of open space in





the southwest ridge area; all other open space areas would be used for recreational activities. This SEIR includes mitigation recommendations which would restrict the activity within the southwest ridge open space area, allowing for use of this area by wildlife. These measures would ensure consistency with this policy.

- r  
r  
r Require preservation or, where preservation is not possible, replacement of riparian vegetation. (Policy 8.D, p. 63.)

The project as proposed is inconsistent with this policy because approximately 0.75 acres of riparian vegetation would be eliminated by the project and there are no proposals for habitat replacement. This SEIR includes recommendations for the preservation and/or replacement of existing riparian vegetation which would ensure project consistency with the policy.

Air Quality Policies

Encourage transportation modes that minimize motor vehicle use and resulting contaminant emissions. (Policy 8.3D, p. 64.)

Project Relationship

The project location in proximity to the new West Pittsburg BART station promotes this policy. However, there are no bike paths, bus stops, or carpool lots proposed in the preliminary project plans. Page 3 of the Development Agreement does indicate that bike paths would be provided. In addition, this SEIR includes mitigation recommendations which would increase project consistency with this policy.

Water Conservation Policies

- r Encourage and support water conservation  
r programs. (Policy 8.4A, p. 67.)

Project Relationship

The preliminary project plans as proposed do not address this policy. The applicant has not stated whether conservation measures such as low-flow fixtures would be implemented. Consistency with this policy could be achieved through conditions of approval related to landscaping, low flow fixtures, etc.

Minimize use of water for maintenance of landscaped areas. *Use of native plant and other low water-using landscaping materials, and use of reclaimed water are possible ways to conserve the domestic*

Some of the trees specified in the applicant's proposed preliminary landscaping plan (see section C.6 of the Project Description) are drought-tolerant (e.g., Japanese Black Pine, Deodar



*water supply without sacrificing parks and golf courses. (Policy 8.4C, p. 67.)*

Cedar). However, other proposed species, such as Southern Magnolias, need moist soil and could not be classified as "low water-using landscape materials."

## 10. Safety Element

The *Safety Element* of the general plan provides information on potential hazards involving geology, soils, flood, fire, and hazardous materials. The policies that are relevant to the proposed project and the relationships of the project to these policies are identified below:

### Geologic and Soils Hazards Policies

Investigate and mitigate geologic and seismic hazards or locate development away from such hazards in order to preserve life and protect property. (Policy 9.1A, p. 69.)

The project could achieve consistency with this policy by implementing the mitigation measures from the Soils and Geology section of this SEIR.

Require financial protection for public agencies and individuals as a condition of development approval where geologic conditions indicate a potential for high maintenance costs. (Policy 9.1B, p. 69.)

Consistency with this policy could be achieved by implementing mitigation measure IV.D.3. from the Soils and Geology section of this SEIR, which addresses maintenance and repair responsibilities for geotechnical hazards.

Give primary consideration to geologic conditions in the selection of land use and in the design of development in Pittsburg. Retain high-risk areas in low-occupancy or open forms of use where potential risks are unmitigable. (Policy 9.1C, p. 69.)

The project is proposed in a relatively high-risk area due to slope stability, seismic hazards, and soil characteristics. However, as discussed in the Soils and Geology section of this SEIR, all of the geotechnical and soil hazards could be reduced to less than significant levels by implementing the identified mitigation measures.

Limit cut slopes to 3:1 (33 percent slope) except where an engineering geologist can establish that a steeper slope would perform satisfactorily over the long term. Encourage use of retaining walls or rock-filled crib walls as alternatives to high cut slopes. (Policy 9.1L, p. 70.)

The project is consistent with this policy; the maximum cut slope is proposed to be 3:1.

Require contour rounding and revegetation. Require blending of cut-and-fill slopes with existing contours, and provision of horizontal variation, in order to mitigate the artificial appearance of engineered slopes. Require revegetation to control erosion. (See Policy 3.5H.) (Policy 9.1M, p. 70.)

Form geologic hazard abatement districts prior to development approval, where appropriate, to ensure that geotechnical mitigation measures are maintained over the long term, and that financial risks are equitably shared among owners and not borne by the City of Pittsburg. (Policy 9.1N, p. 70.)

#### Flood, Fire, and Hazardous Materials

Evaluate storm-drainage needs for each project in the context of demand and capacity when the drainage area is fully developed. Require drainage improvements or other mitigation of the project's impacts on the storm drainage system appropriate to the project's share of cumulative effect. (Policy 9.2E, p. 73.)

Require assessment of potential downstream flood impacts and drainage of all major new developments. When significant impacts are identified, require the project sponsor to provide adequate mitigation or assume the costs of necessary facilities to be constructed by public agencies. (Policy 9.2G, p. 73.)

Assure through the Master Drainage Plan and development ordinances that proposed new development adequately provides for development of on-site and

As proposed, the project is not consistent with this policy. Several of the proposed graded slopes would not appear as natural slopes.

Mitigation measure IV.D.3. in the Soils and Geology section of this SEIR should be implemented to achieve consistency with this policy.

The project is consistent with this policy. As discussed in the Drainage and Water Quality section of this SEIR, the proposed drainage facilities would ensure that the project would have a less than significant impact on peak discharge. In addition, the project retention facilities would likely reduce the potential for downstream flooding compared to existing conditions.

Please refer to the statement above regarding the project's consistency with policy 9.2E.

Please refer to the statement above regarding the project's consistency with policy 9.2E.

downstream off-site mitigation of potential flood hazards and drainage problems and requires development fees to fund the required improvements. (See also Policy 2.2M.) (Policy 9.2H, p. 73.)

#### 11. Noise Element

The general plan *Noise Element* contains three policies that are related to the proposed project. These policies and the relationship of the project are identified below:

Ensure that new development is compatible with the noise environment. (Policy 10C, p. 74.)

As discussed in the Noise section of this SEIR, residents at 19 of the 22 noise measurement locations would experience noise levels above the normally acceptable exterior  $L_{dn}$  standards of 60 dB for new residential development. Also, in the areas where exterior noise levels exceed 60 dB, the interior noise levels would exceed the 45 dB  $L_{dn}$  standard when windows are open for ventilation. Mitigation measures identified in the Noise section of this SEIR (IV.I.3), including berms, sound walls, and fences, would reduce noise impacts and would help the project achieve compliance with this policy.

Require an acoustic study for all proposed projects that would have noise exposure greater than normally acceptable as indicated by Figure 18 and Table 9. (Policy 10G, p. 76.)

As discussed in SEIR section IV.I.3, an acoustic study would be required for the project to achieve consistency with this policy.

Require noise attenuation programs for new developments exposed to noise above normally acceptable levels which include measures to shield sensitive uses from noise sources. Encourage noise attenuation programs which avoid visible sound walls, where practical. (Policy 10H, p. 76.)

Please refer to the discussion above regarding Policy 10C. This EIR recommends the use of berms as an alternative to noise walls in high visibility locations.

## **B. PROJECT RELATIONSHIP TO REGIONAL PLANS**

In keeping with CEQA EIR requirements, project relationships to adopted regional plans are described below, including the Bay Area Air Quality Management District's 1991 Clean Air Plan, the Association of Bay Area Governments San Francisco Bay Area Regional Plan (1980), and the San Francisco Regional Water Quality Control Board's 1991 Water Quality Control Plan.

### **1. Bay Area Air Quality Management District**

Bay Area Air Quality Management District (BAAQMD) policies set forth in the District's 1991 Clean Air Plan call for consideration of traffic-related air quality impacts in the review of residential developments such as the San Marco project. Specifically, the District calls for such air quality effects to be analyzed in the environmental impact reports on such projects, subject to BAAQMD review. The air quality section of this EIR includes an analysis of air quality impacts. Although this EIR identifies mitigation measures to reduce air quality impacts, project contributions to significant cumulative regional air quality degradation would constitute an unavoidable adverse impact that could not be fully mitigated.

### **2. Association of Bay Area Governments**

(a) San Francisco Bay Area Regional Plan and Housing Needs Determination. The Association of Bay Area Governments (ABAG) adopted the San Francisco Bay Area Regional Plan in July 1980. The ABAG Regional Plan includes a number of regional housing and economic development policies that are pertinent to the San Marco project. A principal plan objective is to *"increase the housing supply in accord with regional housing needs."* In pursuit of this objective and in keeping with related state laws requiring councils of governments to periodically determine existing and projected regional housing needs for persons of all income levels, ABAG published its latest San Francisco Bay Area Housing Needs Determinations in January 1989.

(b) Other ABAG Housing Policies. The housing needs determinations have been estimated based on consideration of a number of objectives and policies set forth in ABAG's San Francisco Bay Area Regional Plan, including the basic goal of increasing housing supplies in accord with regional needs, and the policy of maintaining a subregional balance between housing and jobs. The ABAG regional plan states that *"New residential development should be located in or near areas that offer employment opportunities and should be discouraged elsewhere."*

To meet these housing goals, the ABAG regional plan includes numerous housing policies pertinent to consideration of the San Marco project. The ABAG plan calls for stimulating private housing development, consistent with local and regional policies, needs, and goals; increased residential densities where practical; and housing construction sufficient to produce vacancy rates that will increase housing choice and check the rate of housing price



inflation. The plan also promotes the "infill" development concept, encouraging new residential development where public services and facilities are adequate.

Other pertinent ABAG policies include preservation of community values and a safe, healthy environment; discouragement of new development in areas containing environmental hazards, unless adequate mitigation is taken; and location of new housing close to commercial services and jobs in order to promote easy access.

(c) Land Use Policy Framework. An ABAG policy document entitled A Proposed Land Use Policy Framework for the San Francisco Bay Area was adopted by ABAG in July of 1990. The purpose of the policy framework is to encourage *"...a city centered concept of urban development with balanced growth guided primarily into or around existing communities while preserving surrounding open space."* There are six policies supported by action statements that address the same basic goals as the policies in ABAG's 1980 San Francisco Bay Area Regional Plan.

(d) Project Consistency with ABAG Plans. The San Marco project is consistent with, and would further, most of the ABAG housing goals and policies summarized above. Specifically, the project would increase the local housing supply by 2,938 units, representing approximately 75 percent of the projected 1988-1995 need for new housing in Pittsburg. Please refer to the Population and Housing section of the SEIR for a discussion of specific housing needs by household income category. As discussed in the Population and Housing section, the project would aid in meeting the Bay Area housing needs because over roughly 25 to 30 percent of the 2,938 project units would be affordable to households in the *low* income range, roughly 45 to 50 percent would be affordable to households in the *moderate* income category, and roughly 25 percent would be affordable to households in the *above moderate* income category.

### 3. San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay Regional Water Quality Control Board (RWQCB) is the local agency that is responsible for administering the US Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) permit program. Starting in late summer 1992, the NPDES program will include permitting of project sites that disturb more than five acres of land. Developments of this size will be required to address non-point source pollutants from sheet runoff, not just construction-related impacts. The RWQCB also has a plan to improve regional water quality.

The RWQCB's 1991 Water Quality Control Plan is a document that contains policies to control water quality, including urban runoff management and construction activity control. The Regional Board is currently developing guidelines identifying Best Management Practices (BMPs) for reducing non-point source pollutants. These practices vary, but generally include increased street cleaning, oil and grease separators for large parking areas, infiltration areas, and trash racks. Related future regulations to be established by the

RWQCB could possibly mandate costly retro-fitting of the project storm drain system. In response and as specified in the Drainage and Water Quality section of this SEIR, the applicant should either:

- (1) incorporate some of these BMP and facilities into the subdivision storm drainage design,
- (2) design the project storm drainage system in a way that will easily facilitate the future installation of non-point source pollutant control devices, and/or
- (3) set aside funds to comply with future regulatory requirements.

r In addition, the RWQCB has an adopted a Wetland Fill Policy which requires no net loss of  
r wetland value. Implementation of mitigations recommended in this EIR would ensure  
r compliance with this policy.

r 4. Contra Costa County Congestion Management Program

r The Contra Costa County Congestion Management Plan (CMP) designates Highway 4 as a  
r CMP Route and designates an LOS standard of F for the highway. Highway 4 currently  
r operates at LOS F in the AM peak hour between Bailey Road and Willow Pass Road in  
r Concord. The same segment also operates at LOS F in the PM peak hour in the  
r eastbound direction. Following completion of the project and the Willow Pass Grade  
r Highway Improvement Project, Highway 4 would operate within the CMP LOS standard.



## **VI. ALTERNATIVES TO THE PROPOSED PROJECT**

---

## VI. ALTERNATIVES TO THE PROPOSED ACTION

---

The proposed San Marco Project development plan shown on Figure 5 has been considered in this assessment as the principal proposal for development of the 639-acre project site, and has been subjected to detailed impact analysis in this SEIR. To provide a further understanding of the environmental effects of the project and possible approaches to reducing significant impacts, and to meet CEQA requirements, four alternatives to the proposed action are described and evaluated in this chapter. The four alternatives are:

- *No Project.* The CEQA-required no project alternative, which assumes continuation of the present use of the site.
- *Alternative Residential Layout.* Development of the site with the same number of residential units as the proposed project (2,938) but with revisions in housing type and layout in order to accommodate a broader housing market (i.e., the revised 2,938-unit layout prepared for the city by McGill, Martin, Self, civil engineers).
- *Mitigated Residential Scheme.* Development of the site with the same number of residential units as the proposed project (2,938) but with incorporation of various other mitigation measures listed in this SEIR.
- *Reduced Intensity Scheme.* Development of the site with a revised layout and reduced number of units in order to reduce or minimize identified adverse environmental impacts.

### A. NO PROJECT

#### 1. Principal Characteristics

This alternative would involve maintaining the existing undeveloped characteristics of the site without any new construction. The site's existing agricultural (range land), related residential, and natural gas well uses would remain unaltered.

#### 2. Mitigating Effects

(a) Land Use. No land use compatibility problems between the proposed urban density residential development, and the existing onsite power transmission lines and nearby agricultural uses would be created. The significant loss of local hillside open space value which would occur with the proposed project would be avoided. The largest of the five

remaining unsubdivided properties within the site's Southwest Hills planning area would remain undeveloped. As a result the westerly extension of urbanization in southwest Pittsburg would be reduced by approximately 5,000 feet (639 acres).

(b) Population and Housing. No mitigating needs have been identified in this SEIR.

(c) Transportation. No new traffic would be added to the local and regional circulation system from the San Marco site. The comparative traffic generation impacts of this and the other three alternatives discussed in this section are illustrated in Table 41.

(d) Geology and Soils. The massive earthwork associated with the proposed development (movement of over six million cubic yards of earth on the site, with cuts up to 120 feet high and fills up to 130 feet high) would be avoided. As a result, no new housing, roads, or infrastructure would be subject to related ground settlement, slope stability, soil shrink-swell, soil erosion, seismic, groundwater, and corrosive soil impacts identified in this SEIR.

(e) Drainage and Water Quality. The natural drainage and runoff characteristics of the project site would remain unaltered. As a result, no increase in the volume of total storm flow in the downstream West Pittsburg drainage system would occur. In addition, no new erosion and non-point water pollution impacts would be added to the downstream drainage system.

(f) Visual Quality. The transformation of the largest of the five remaining unsubdivided properties in the city's Southwest Hills are to an intensive suburban residential landscape would be avoided. The massive grading program, including the proposed substantial modifications to project topography (reduction in hill forms, filling of draws) would be avoided. The southwest urban extension of the city towards the southwest would be at least temporarily reduced by 639 acres (approximately 5,000 feet). As a result, the hillside and ridgeline backdrops of West Pittsburg and this segment of Highway 4 and the rural, rangeland character of this portion of the Southwest Hills would be retained.

(g) Vegetation and Wildlife. No loss of jurisdictional wetland and riparian vegetation would occur.

(h) Municipal Services. The significant increases in service demands for schools, water, sewer, police, fire protection, parks and recreation, and library services which have been identified in this SEIR for the project would not occur.

(i) Noise. No new homes would be exposed to the projected adverse noise environments along Highway 4 and along the West Leland Road and southerly Willow Pass Road extensions through the site.

Table 41

ALTERNATIVES: TRAFFIC GENERATION COMPARISON

| <u>Units</u>       | <u>Project</u> | <u>No Project</u> | <u>Alternative<br/>Residential<br/>Layout</u> | <u>Mitigated<br/>Residential<br/>Scheme</u> | <u>Reduced<br/>Intensity<br/>Alternative</u> |
|--------------------|----------------|-------------------|-----------------------------------------------|---------------------------------------------|----------------------------------------------|
| Single Family      | 1,363          | 2                 | 1,180                                         | 1,276                                       | 590                                          |
| Apartments         | 1,236          | 0                 | 1,040                                         | 1,236                                       | 520                                          |
| Townhouses         | <u>339</u>     | <u>0</u>          | <u>720</u>                                    | <u>339</u>                                  | <u>360</u>                                   |
| Totals             | 2,938          | 2                 | 2,940                                         | 2,851                                       | 1,470                                        |
| Daily Trips        |                |                   |                                               |                                             |                                              |
| Single Family      | 13,016         | 19                | 11,269                                        | 12,186                                      | 5,635                                        |
| Apartments         | 7,997          | 0                 | 6,729                                         | 7,997                                       | 3,364                                        |
| Townhouses         | <u>1,987</u>   | <u>0</u>          | <u>4,219</u>                                  | <u>1,987</u>                                | <u>2,110</u>                                 |
| Totals             | 23,000         | 19                | 22,217                                        | 22,170                                      | 11,109                                       |
| PM Peak Hour Trips | 2,370          | 2                 | 2,222                                         | 2,217                                       | 1,111                                        |

SOURCE: Wagstaff and Associates; Crane Transportation Group

(j) Air Quality. The project impacts on local or regional air quality would not occur.

(k) Cultural Resources. No project impacts to onsite cultural resources (i.e., the old Rogers Ranch and Alvernaz Ranch complexes) would occur.

(l) Public Health and Safety. The project-related exposure of additional residential development to the potential health risks associated with power transmission line electromagnetic fields and the potential safety risks associated with onsite natural gas wells would be avoided.

### **3. Adverse Effects**

(a) Land Use. No additional adverse land use impacts would occur.

(b) Population and Housing. Needed housing units would not be provided.

(c) Transportation. No significant adverse environmental effects would occur. Construction by the project proponent of the San Marco site segments of the general-plan-designated West Leland Road-Avila Road interconnection and Willow Pass Road southern extension to Bailey Road would not occur.

(d) Geology and Soils. No additional significant adverse effects would occur.

(e) Drainage and Water Quality. No additional significant adverse effects would occur.

(f) Visual Quality. No additional significant adverse effects would occur.

(g) Vegetation and Wildlife. No significant additional adverse effects would occur.

(h) Municipal Services. No significant additional adverse effects would occur.

(i) Noise. No significant additional adverse effects would occur.

(j) Air Quality. No significant additional adverse effects would occur.

(k) Cultural Resources. No significant additional adverse effects would occur.

(l) Public Health and Safety. No significant additional adverse effects would occur.



## **B. ALTERNATIVE RESIDENTIAL LAYOUT**

### **1. Principal Characteristics**

This alternative would involve development of the 639-acre site with the same number of residential units as the proposed project (2,938), but with revisions to the layout and housing types breakdown in order to accommodate a broader range of housing demands. The development scheme, which was formulated for the city by McGill-Martin-Self, civil engineers, is illustrated on Figure 45. This alternative design would cover approximately the same portion of the project site.

The circulation layout of this alternative would be basically the same as the project, with a similar alignment of the Leland Road and Willow Pass Road arterial extensions throughout the site, a similar Roadway B collector loop, and a similar system of secondary residential streets. However, the scheme would include several differences in design to provide a greater variation in housing product and a greater distinction between the various project villages. These design differences would include (a) a reduction in the average single-family village size from 136 to 118 lots (necessitating the addition of two villages); (b) inclusion of a greater variety of lot widths and lot sizes between different villages;<sup>1</sup> (c) inclusion of 720 rather than 339 townhouses; (d) a reduction in the number of single-family detached homes from 1,363 to 1,180; (e) a reduction in the total number of apartments from 1,236 to 1,040; (f) the addition of several open space features between the 14 villages (described in more detail below); and (g) redesign of the internal circulation aspects of each village to reduce access between villages and strengthen the identity of each individual village.

The proposed permanent open space areas on the site would remain generally similar in quantity and location to what is proposed in the project with the following exceptions: (a) the open space area proposed in the southwest portion of the site would be modified to provide open space along the western boundary and on the highest knoll on the site; (b) an open space corridor would be created along the lower, riparian reaches of Shore Ares Creek; (c) the ownership characteristics of the southwest open space area would change from private lots to separate, commonly owned parcels; and (d) this alternative would include a major open space corridor extending from the community park/detention basin (located between the PG&E easement and Leland Road) southward through Village E, between Villages H and J to the southwest ridge open space area.

---

<sup>1</sup>Nine of the ten villages in this alternative would have gross densities of four units per acre or less while the project would have only four villages with this low of density. Four of the villages in the proposed project would have densities greater than five units per acre while none of the villages in this alternative would be that dense.

This alternative design also differ from the project in that proposed Village A, a village containing large lot, single-family detached homes in the project design, would be changed to contain multi-family homes similar to all the other project villages on the north side of the site.

## **2. Mitigating Effects**

**(a) Land Use.** The alternative would substantially change the land use character of the project. More physical distinction between the various residential villages would be provided. The degree of project hilltop retention would be increased. The Willow Pass extension would include a substantial open space setback along its entire project length. And Village A which is on relatively level land and adjacent to the freeway, would be converted from a large-lot single family residential subdivision to a more appropriate multifamily neighborhood.

This alternative would also result in minor improvements in project compatibility with adjacent agricultural uses due to the minor adjustments made in open space buffer areas.

**(b) Population and Housing.** This alternative would provide a greater variety in housing type and costs.

**(c) Transportation.** As shown in Table 41, this alternative would have a slightly lower (approximately 6 percent less) daily and peak hour trip generation total due to the greater percentage of multi-family units.

**(d) Geology and Soils.** No significant mitigating effects have been identified.

**(e) Drainage and Water Quality.** No significant mitigating effects have been identified.

**(f) Visual Quality.** This alternative would reduce visual impacts of the project by locating those homes proposed in the upper elevations of the site away from the most prominent knolls; by creating more design variety and distinction between the various villages, thereby reducing monotony and increasing visual interest; by creating a continuous open space setback along the Willow Pass Road extension to create a distinctive, parkway effect; by preserving existing riparian zones along Shore Acres Creek; and by improving assurances that the designated open space area in the upper, southwest portion of the site would be permanently preserved and undisturbed.

**(g) Vegetation and Wildlife.** This alternative would allow for the preservation of the riparian and other vegetation along the larger northern portion of Shore Acres Creek. This design change would be possible due to the conversion of proposed Village A to a multi-family "townhouse" village, a change which would allow for more clustering of project homes



| SUMMARY           |           |                |             |       |       |
|-------------------|-----------|----------------|-------------|-------|-------|
| MULTI-FAMILY Type | Product   | Net Area Acres | Density U/A | Units | Seeno |
| A.                | Townhouse | 30             | 10          | 300   |       |
| B.                | Apartment | 36             | 16          | 575   |       |
| C.                | Townhouse | 42             | 10          | 420   |       |
| D.                | Apartment | 29             | 16          | 465   |       |
| Subtotal          |           |                |             | 1760  | 1575  |
| SINGLE-FAMILY     |           |                |             |       |       |
| E.                | 50 x 90   | 46             | 4.7         | 220   |       |
| F.                | 60 x 100  | 30             | 4.0         | 120   |       |
| G.                | 70 x 90   | 24             | 3.7         | 90    |       |
| H.                | 80 x 80   | 28             | 3.5         | 100   |       |
| I.                | 70 x 90   | 30             | 3.7         | 110   |       |
| J.                | 80 x 80   | 37             | 3.5         | 130   |       |
| K.                | 80 x 80   | 35             | 3.5         | 120   |       |
| L.                | 70 x 90   | 29             | 3.7         | 110   |       |
| M.                | 60 x 100  | 23             | 4.0         | 90    |       |
| N.                | 80 x 100  | 30             | 3.0         |       |       |
| P.                | 80 x 100  |                |             |       |       |
|                   |           |                |             | 1180  | 1363  |
|                   |           |                |             | 2940  | 2938  |

Figure 45  
ALTERNATIVE RESIDENTIAL LAYOUT

and preservation of some of these creek resources. This alternative would also provide more opportunity for wildlife adaptive to urban residential development to pass through the project within the several additional open space corridors included in the design.

(h) Municipal Services. No significant mitigating effects have been identified.

(i) Noise. Noise impacts would be significantly reduced for homes located in Village A due to the lesser sensitivity of multi-family dwellings to noise and the increased opportunity for greater setbacks from noise sources, i.e., Highway 4 and Willow Pass Road extension. In addition, the proposed open space setbacks along the Willow Pass Road extension would significantly reduce projected traffic noise impacts on homes along this route.

(j) Air Quality. No significant mitigating effects have been identified.

(k) Cultural Resources. No significant mitigating effects have been identified.

(l) Public Health and Safety. No significant mitigating effects have been identified.

### **3. Adverse Effects**

(a) Land Use. This alternative would increase the number of single-family homes in Village G which would share a property line with the DeBonneville property, the planned location of an "animal center" and related activities which could be incompatible with residential land use.

(b) Population and Housing. No significant adverse effects have been identified.

(c) Transportation. No significant additional adverse impacts have been identified.

(d) Geology and Soils. No significant additional adverse impacts have been identified.

(e) Drainage and Water Quality. No significant additional adverse impacts have been identified.

(f) Visual Quality. No significant additional adverse impacts have been identified.

(g) Vegetation and Wildlife. No significant additional adverse impacts have been identified.

(h) Municipal Services. No significant additional adverse impacts have been identified.

(i) Noise. No significant additional adverse noise impacts have been identified.

(j) Air Quality. No significant additional adverse air quality impacts have been identified.

(k) Cultural Resources. No significant additional adverse impacts to cultural resources have been identified.

(l) Public Health and Safety. No significant additional adverse impacts have been identified.

## **C. MITIGATED RESIDENTIAL SCHEME**

### **1. Principal Characteristics**

This alternative would include several project design modifications intended to reduce identified impacts to less than significant levels. These modifications would include:

- the incorporation of strategic planting in the project landscaping plan to screen the PG&E and USA transmission lines from adjacent residential vantage points;
- placement of a conservation easement over the 95-acre area along the southern ridgeline of the property to preserve this area as permanent open space;
- construction of special dog-proof fencing adjacent to existing agricultural and grazing activities;
- construction of a 300 space park-and-ride lot in Village A near the intersection of Willow Pass Road extension (covering approximately 2.5 to 3.0 acres and resulting in the elimination of approximately eight to nine project lots);
- redesign of site plan to eliminate the Village A Street connection to Leland Road near the intersection with project Street A (Willow Pass Road extension);
- provision an emergency access connection from the west end of Leland Road or the south end of Willow Pass Road on the San Marco site to the local street system outside of the project (e.g., into future development on the Alves property);
- signalization of the intersection of Leland Road/Willow Pass Road Extension when warranted;
- signalization of the Leland Road intersections with Street B, and with the access roads to Village A, C, and M;
- implementation of an erosion control plan during and following project construction;
- inclusion of provisions for street cleaning, oil and grease separators in parking lots, infiltration areas, and trash racks as part of the project drainage system;
- r ■ redesign the site plan to remove all development above elevation 750;
- revegetation and landscaping of disturbed common areas;

- ✓ ■ redesign of the Village A component of the project to preserve the corridor of riparian and other vegetation along Shore Acres creek between the PG&E transmission line and Highway 4 (resulting in the elimination of up to 10 more project lots in Village A);
- ✓ r ■ redesign of the project to preserve or replicate and enhance with native riparian r vegetation along existing creeks and ephemeral drainage channels on the project site;
- r ■ redesign of the project to preserve the area in the northwest corner of the site (shown r on Figure 42) which supports riparian herbs and grasses;
- r ■ re-creation of the existing wet meadow area shown on Figure 42, which would be displaced by the construction of the new Highway 4 off-ramp to the project, in one of the project's designated open space areas, perhaps as part of the community park/detention basin area;
- construction of an eight-foot noise berm along Highway 4;
- construction of a combination berm and noise wall along both sides of project Street A;
- introduction of a continuous open space setback and/or construction of a nine-foot berm/noise wall along the north side of Leland Avenue east of Willow Pass Road Extension;
- installation of mechanical ventilation in all second floor rooms subject to excessive noise;
- redesign of the project to relocate all exterior activity areas (e.g. active recreation areas, residential yards, etc.) a minimum of 150 feet from the edge of the easement for the 230 kV transmission lines and 100 feet from the edge of the easement for the 115 kV transmission line, and 50 feet from the easement around the 69 kV transmission line.

Such modifications could require the removal of up to 87 single-family lots, i.e., a 2,851-unit project, and the relocation of several of the multi-family structures.

## **2. Mitigating Effects**

**(a) Land Use.** This alternative would ensure the preservation and protection of the approximately 95-acre hilltop open space area in the southwest portion of the site, would reduce the visual impacts of the transmission lines on project residents, and would reduce the level of conflict between the project and adjacent agricultural uses.

**(b) Population and Housing.** No significant mitigating needs have been identified.

**(c) Transportation.** The park-and-ride lot component of this alternative would be expected to reduce project impacts on Highway 4 during commute hours. The reduction in total units would slightly reduce total project traffic generation (see Table 41). The internal street redesign and signalization aspects would reduce internal circulation conflicts, would improve operation at the Leland/Willow Pass Road Extension arterial intersection, would mitigate

identified impacts at village entrances from Leland Road, and would improve future emergency access to the project.

(d) Geology and Soils. No significant mitigating effects have been identified.

(e) Drainage and Water Quality. Erosion and non-point pollution related impacts would be reduced due to erosion control efforts and improvements to the project's drainage system.

(f) Visual Quality. This alternative would ensure the preservation of the open space area in the upper portion of the site; would reduce the visual impacts of the transmission line towers on project residents; would eliminate proposed development from the general plan designated major ridgeline on the southwest corner of the site; and would act to maintain the project feeling of open space surrounding the city.

(g) Vegetation and Wildlife. This alternative would have fewer impacts on vegetation and wildlife through the preservation of the riparian and other vegetative resources along the northern portion of Shore Acres Creek and the herbaceous riparian meadow located in the northwest portion of the project site. This alternative would improve the existing habitat value of onsite creeks through preservation of existing channels or replication of surface channels enhanced with native riparian vegetation.

(h) Municipal Services. This alternative would provide improved emergency vehicle access to project Phase I. This alternative would also result in a slight reduction (3 percent less) in project per capita impacts on municipal services.

(i) Noise. This alternative would have reduced noise impacts due to the inclusion of berms or noise walls in the project design.

(j) Air Quality. No significant mitigating effects have been identified.

(k) Cultural Resources. No significant mitigating effects have been identified.

(l) Public Health and Safety. This alternative would have reduced impact potentials relating to power line EMF exposure due to the increased residential activity area setbacks from the transmission lines.

### 3. Adverse Effects

(a) Land Use. No significant additional adverse impacts have been identified.

r (b) Population and Housing. No significant additional adverse impacts have been  
r identified. However, this alternative may require the development of a higher net density  
r project (e.g., construction of a greater number of high density attached units) to compensate  
r for the added area needed to preserve onsite creeks without reducing the total number of  
r housing units proposed.

(c) Transportation. No significant additional adverse effects have been identified.

(d) Geology and Soils. No significant additional adverse effects have been identified.





(e) Drainage and Water Quality. No significant additional adverse effects have been identified.

(f) Visual Quality. No significant additional adverse effects have been identified except that proposed noise walls along Willow Pass Road extension and Leland Road may be considered visually undesirable.

(g) Vegetation and Wildlife. No significant additional adverse effects have been identified.

(h) Public Services. No significant additional adverse effects have been identified.

(i) Noise. No significant additional adverse effects have been identified.

(j) Air Quality. No significant additional adverse effects have been identified.

(k) Cultural Resources. No significant additional adverse effects have been identified.

(l) Public Health and Safety. No significant additional adverse effects have been identified.

## **D. REDUCED INTENSITY SCHEME**

### **1. Principal Characteristics**

This alternative would include a development master plan to the proposed project, but would include a 50 percent reduction in total project units and associated revisions to the project layout, development area, and grading plan to reduce associated land use, traffic, visual, geotechnical, vegetation and wildlife, noise, municipal service, and air quality impacts. This alternative would include 590 single-family detached units, 360 townhouse units, and 520 apartment units, for a total of 1,470 units. This total approximates the level of development originally proposed for the site when annexation of the Southwest Hills Area was being considered by the city. The reduction in units would be concentrated primarily in the upper, steeper portions of the site where associated grading reductions would be greatest.

### **2. Mitigating Effects**

(a) Land Use. Fewer project units would allow for greater design flexibility and greater opportunities for buffers between project dwelling units and adjacent agricultural and other potentially incompatible uses, and similarly, would allow for increased distinction and separation between the various residential villages. The unit reduction would also allow increased protection of the upper hillside and ridgeline portions of the site, thereby reducing

perceived open space and ridgeline impacts.

(b) Population and Housing. No significant mitigating effects have been identified.

(c) Transportation. This alternative would have reduced impacts on the local and regional transportation systems due to the reduced number of trips generated. Table 41 indicates that this alternative would generate 53 percent fewer daily trips than the proposed project.

(d) Geology and Soils. This alternative would reduce the need for mass grading with deep cuts and fills in the steeper portions of the site, and would expose fewer dwelling units to seismic, slope stability, and soil related impacts.

(e) Drainage and Water Quality. This alternative would result in reduced drainage and water quality impacts due to the reduced amount of impervious surface which would be created, the reduced amount of grading which would be required, and the reduced amount of non-point pollutant sources which would be introduced on the site.

(f) Visual Quality. The reduction in project units could allow for a project with a significantly reduced visual impact on West Pittsburg vantage points due to the ability to preserve larger areas of open space, and in particular, the ability to reduce hillside and ridgeline grading, and to locate project residences away from highly visible hillside and ridgeline locations.

(g) Vegetation and Wildlife. This alternative would allow for the preservation of a greater quantity of open space, including the riparian and other vegetative values along the northern portion of Shore Acres Creek, and the herbaceous riparian meadow located in the northwest portion of the site.

(h) Municipal Services. This alternative would have substantially reduced per capita impacts on all municipal services due to the approximately 50 percent reduction in the number of dwelling units and population associated with the project.

(i) Noise. This alternative would allow for modifications to the project design, including increased highway and arterial setbacks, which would expose fewer units to adverse noise environments.

(j) Air Quality. This alternative would have substantially reduced impacts on local and regional air quality due to the 51 percent reduction in automobile trips generated.

(k) Cultural Resources. This alternative could have reduced impacts on existing cultural resources on the project site due to the reduced number of project units, the reduced amount of required grading, and the greater degree of flexibility in development area configuration.

(l) Public Health and Safety. This alternative could allow for the inclusion of greater setbacks between the existing PG&E and USA transmission lines and project homes due to the greater design flexibility created by the reduction in project units.

### **3. Adverse Effects**

(a) Land Use. No significant additional adverse effects have been identified.

(b) Population and Housing. This alternative would provide fewer needed housing units.

(c) Transportation. No significant additional adverse effects have been identified.

(d) Geology and Soils. No significant additional adverse effects have been identified.

(e) Drainage and Water Quality. No significant additional adverse effects have been identified.

(f) Visual Quality. No significant additional adverse effects have been identified.

(g) Vegetation and Wildlife. No significant additional adverse effects have been identified.

(h) Municipal Services. No significant additional adverse effects have been identified.

(i) Noise. No significant additional adverse effects have been identified.

(j) Air Quality. No significant additional adverse effects have been identified.

(k) Cultural Resources. No significant additional adverse effects have been identified.

(l) Public Health and Safety. No significant additional adverse effects have been identified.

## **E. CONCLUSION**

In response to CEQA guideline provisions calling for identification of the environmentally superior alternative, the comparative environmental impact ratings of the various project alternatives evaluated in this chapter are listed below. *Please note that only "environmental" factors were considered in this ranking. Other considerations, such as local and regional housing needs, economic viability, and landowner intentions were not considered.*

***Highest Environmental Ranking***  
*(most environmentally desirable)*

*No Project Alternative*

*Reduced Intensity Alternative*

*Mitigated Alternative*

*Alternative Residential Design*

*Proposed Project*

***Lowest Environmental Ranking***  
*(least environmentally desirable)*

## **VII. CEQA-REQUIRED ASSESSMENT CONCLUSIONS**

---

## VII. CEQA-REQUIRED ASSESSMENT CONCLUSIONS

---

This section summarizes report findings in terms of the various assessment categories suggested by the California Environmental Quality Act (CEQA) guidelines for EIR content. The section summarizes report findings with respect to "growth inducement," "unavoidable and irreversible adverse impacts," "short-term versus long-term environmental productivity," and "effects found not to be significant."

### A. GROWTH-INDUCING EFFECTS

(1) Direct Population, Housing and Employment Increases. Development under the proposed action would add 2,938 residential units, consisting of 1,363 single-family detached homes and 1,575 multifamily residential units, to the Southwest Hills area of the City of Pittsburg in Contra Costa County. The project would provide housing for up to 7,730 people. As discussed in section IV.B, (Population and Housing) of this SEIR, the added project homes would account for approximately 60 percent of the ABAG-projected City of Pittsburg household increase between 1990 and 2000, and almost four percent of the ABAG-projected countywide housing unit increase for the decade.

(2) Cumulative Growth. Substantial urbanization has recently occurred within southwest Pittsburg. The 442-unit, 87-acre Oak Hills residential subdivision and community commercial development have recently occurred within the vicinity. Additional urbanization in these areas is anticipated in the near future, including the pending 477-unit, 211-acre Oak Hills South subdivision, and the anticipated residential development of the adjacent 293-acre Alves property (see Table 3 for a complete listing of anticipated cumulative development).

(3) Precedent Setting Effects. Approval of the proposed San Marco project and related infrastructure expansions would contribute to the trend toward urbanization of the Highway 4 corridor in southwest Pittsburg. The project would provide arterial access to the adjacent 442-acre Seecon property located above and to the south of the site via the new Highway 4 interchange and Willow Pass Road extension, and to the adjacent DeBonneville and Ridge Farm properties to the west via the extension of Leland Road to Avila Road. In addition, the project would represent the highest elevation of development in the Southwest Hills portion of the city. Approval and successful development of the project could be precedent-setting, encouraging similar conversion of the Seecon, DeBonneville, and Ridge Farms properties to residential use at similar elevations. Development of the Seecon property

r would be prohibited in those areas included within the Navy-designated ESQD arcs  
r described on page 105 of this SEIR and associated restrictive easements which extend  
r from the Concord Naval Weapons Station onto the property.





## **B. UNAVOIDABLE AND IRREVERSIBLE ADVERSE IMPACTS**

(1) Land Use. Unavoidable and irreversible land use impacts of the project include the significant open space loss associated with development of the largest of the five remaining unsubdivided properties in the city's Southwest Hills area, the extension of urban development 270 to 500 feet higher in elevation than any other development in the area, and the impacts to the livability of the approximately 309 closest project homes to the existing PG&E transmission lines.

(2) Population and Housing. No significant adverse impacts were identified.

(3) Transportation. All identified significant adverse impacts can be mitigated to less than significant levels.

(4) Geology and Soils. All identified significant adverse impacts can be mitigated to less than significant levels.

(5) Drainage and Water Quality. All identified significant adverse impacts can be mitigated to less than significant levels.

(6) Visual Factors. The project would transform the undeveloped, hilly ridges and range land backdrop that the 639-acre San Marco site now provides for West Pittsburgh and the West Pittsburgh segment of the Highway 4 corridor into an intensive suburban landscape. The project would include massive grading and reconfiguration of the site topography, including substantial reduction in hillside profiles and filling of existing draws in order to create a more gradual site contour and an expansive, uniform, and intensive suburban landscape. These changes would represent a significant adverse impact on the rural, open space character of the Southwest Hills landscape and on existing views from Highway 4, the Sea Breeze and Mota Ranch subdivisions, the unincorporated Shore Acres and West Pittsburgh communities, and Evora Road.

The location of project homes and other features in proximity to the two parallel PG&E electrical transmission lines and associated towers would result in significant adverse visual impacts for residents and users of those project components closest to the lines.

This SEIR identifies mitigation measures which would reduce these visual impacts, but not to less than significant levels.

(7) Vegetation and Wildlife. The project-related direct loss of over 500 acres of common annual grassland would contribute to an unavoidable significant regional cumulative loss of open wildlife range.

(8) Municipal Services. All identified significant adverse impacts can be mitigated to less than significant levels.

(9) Noise. Onsite construction period noise in later project phases would result in temporary, unavoidable significant adverse impacts on residences constructed in the earlier phases.

(10) Air Quality. Project impacts on regional air quality (i.e., its emission of reactive organic gases and oxides of nitrogen) would exceed the quantity per day considered to be significant. This SEIR identifies measures to substantially reduce these project impacts, but not to less than significant levels.

(11) Cultural Resources. All identified significant adverse impacts can be mitigated to less than significant levels.

(12) Public Health and Safety. All identified significant adverse impacts can be mitigated to less than significant levels.

### **C. SHORT-TERM VERSUS LONG-TERM ENVIRONMENTAL PRODUCTIVITY**

In keeping with California Environmental Quality Act (CEQA) Guidelines for EIR content, those plan impacts which narrow the range of long-term beneficial uses of the environment due to short-term interests must be identified.

Long-term impacts of the San Marco project would include the replacement of rangeland and open space with urban development. Although the crop-growing potential of the site's soils is limited due to poor soil and drainage qualities, the site has a demonstrated use for cattle grazing. Development of the proposed project would eliminate any feasibility of restoring earlier agricultural uses of the property, or for any other utilization of unrealized agricultural potential.

The proposed development would also limit the potential of the site for other future beneficial uses, such as parkland or affordable housing.

### **D. EFFECTS FOUND NOT TO BE SIGNIFICANT**

The City of Pittsburg, in its Initial Study of the project, determined that a number of possible environmental effects would be insignificant or could be adequately addressed by city staff in the development review process without further environmental assessment in this report. These Initial Study determinations (Environmental Checklist Form) and associated

explanations by city staff are included in Appendix A of this EIR. These insignificant effects include:

- (1) creation of objectionable odors;
- (2) alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally;
- (3) changes in currents, or the course or direction of water movements, in either marine or fresh waters;
- (4) alterations to the course or flow of flood waters;
- (5) substantial reduction in the amount of water otherwise available for public water supplies;
- (6) exposure of people or property to water-related hazards such as flooding or tidal waves;
- (7) reduction in acreage of any agricultural crop;
- (8) increase in the rate of use of any natural resources;
- (9) possible interference with an emergency response plan or an emergency evacuation plan;
- (10) affect existing housing, or create a demand for additional housing;
- (11) impact existing parking facilities or create demands for new parking;
- (12) alterations to waterborne, rail or air traffic;
- (13) creation of any health hazard or potential health hazard (excluding mental health);
- (14) impact upon the quality or quantity of existing recreational opportunities; and
- (15) restrict existing religious or sacred uses within potential impact areas.

## VIII. MITIGATION MONITORING PLAN

---

## VIII. MITIGATION MONITORING

---

This section of the SEIR describes a recommended monitoring program for implementation of the mitigation measures identified in this SEIR, and describes relationships between various anticipated monitoring needs and responsible monitoring agencies.

### A. BACKGROUND

On January 1, 1989, AB 3180 became law in California. The bill requires all public agencies to adopt reporting or monitoring programs when they approve projects subject to environmental impact reports.<sup>1</sup> The complete text of the bill can be found in Section 21081.6 of the Public Resources Code.

A project-specific mitigation monitoring program will be required for implementation subsequent to certification of the San Marco project SEIR. Most of the environmental mitigation measures which have been recommended in this SEIR will be subject to effective monitoring through the city's normal planned unit development, tentative map, development agreement, building permit, and associated plan check and field inspection procedures. However, to satisfy CEQA Section 21081.6, a documented record of implementation will be necessary.

### B. MONITORING CHECKLIST

While actual formulation of a specific mitigation monitoring program should not be completed until the SEIR is certified and the project is approved, the relationship between the various impact mitigation categories in this SEIR and the responsible monitoring agency, and the framework to be followed in finalizing the monitoring program subsequent to project approval, can be determined on a preliminary basis at this Draft SEIR stage. This preliminary information can assist city decision-makers in evaluating the potential feasibility and effectiveness of the various mitigations recommended herein.

The attached checklist includes matrix spaces for: (1) each mitigation measure included in the SEIR; (2) the party responsible for implementing each mitigation measure and any requirements with respect to the timing of implementation; and (3) the party responsible for

---

<sup>1</sup>Randy Pestor and Ron Bass, "Mitigation Monitoring and Reporting," California Planner, January 1989.

performing mitigation monitoring plus information on the type, required timing, and cost implications of the monitoring procedures. These checklist categories are discussed in more detail below.

1. Mitigation Measures (Performance Criteria)

This column would include each mitigation measure as it is described in the SEIR Summary table (SEIR section II). The description would be supplemented by any applicable performance criteria (i.e., the measure by which the success of the mitigation can be gauged) associated with each measure.

2. Implementation Responsibility and Timing

This column would describe the party responsible for carrying out each mitigation measure (e.g., the applicant, a city department, a public agency, etc.). This column would also describe any specific implementation timing requirements, e.g., measures may need to be implemented prior to project construction, prior to project occupancy, following completion of Phase II, or when some specific threshold (e.g., traffic volumes) is reached.

3. Monitoring Responsibility, Type, Timing, and Cost Implications

This column specifies which party is responsible for performing the monitoring of each mitigation. This responsibility could be with the applicant, a professional specialist hired by the applicant, a city department, another public agency, or some other entity.

In addition, this column would specify what type of monitoring program would be required. In some cases, established plan check and/or inspection procedures by city departments may be sufficient. In other cases, specialized monitoring procedures by hired professionals may be required.

This column would also specify any monitoring timing requirements similar to those options listed above for implementation. Some monitoring programs could involve one-time procedures while others could be required to continue for up to several years after project completion.

Finally, this column would describe the cost implications of each mitigation monitoring program element. Once the program is formulated, the cost of those monitoring steps which are appropriately included as part of the normal development review procedures of the city or other Responsible Agencies may be routinely covered by the normal administrative budget of those agencies. Such costs are typically funded by existing review fees, permit fees, connection fees, impact fees, etc. For those mitigation measures which are clearly not part of these normal development review and due diligence procedures of the Responsible Agency, the agency may wish to require payment by the applicant of a monitoring fee or the pre-establishment of a monitoring fund. Fund monies could be used

to cover related Responsible Agency staff time and materials, or could be used by the agency to retain qualified outside professionals to complete the monitoring.



Table 42

# MITIGATION MONITORING CHECKLIST--SAN MARCO DEVELOPMENT

| <p>The following environmental mitigation measures were incorporated into the Conditions of Approval for the San Marco Development in order to mitigate identified environmental impacts to a level of insignificance. A completed and signed checklist for each mitigation measure will indicate that the mitigation requirement has been complied with and implemented, and that the city's monitoring requirements have been fulfilled with respect to Assembly Bill 3180 (Public Resources Code Section 21081.6). (See previous pages of this EIR for an explanation of the various checklist headings.)</p> |                                             |                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------|
| MITIGATION MEASURE<br>(PERFORMANCE CRITERIA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IMPLEMENTATION RESPONSIBILITY<br>AND TIMING | MONITORING RESPONSIBILITY, TYPE,<br>TIMING, AND COST IMPLICATIONS |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                   |

## **X. RESPONSES TO COMMENTS ON THE DRAFT EIR**

---

## X. RESPONSES TO COMMENTS ON THE DRAFT EIR

---

Under CEQA guidelines, the city (i.e., the Lead Agency) is required after completion of the Draft SEIR to consult with and obtain comments from public agencies having jurisdiction by law with respect to the project, and to provide the general public and the applicant with opportunities to comment on the Draft SEIR. The city is also required to respond to substantive environmental points raised in this review and consultation process.

The Draft SEIR was posted for circulation and comment on June 5, 1992. The required 45-day public review period on the Draft SEIR ended July 20, 1992. During the public review period, comments on the DSEIR were received in the form of four (4) written letters submitted to the city. Seven (7) additional letters were received after the official response period.

This Response to Comments chapter includes the following subsections:

- An **Index to comments** (section X.A), which lists the persons, organizations, and public agencies commenting on the DEIR; identifies the significant environmental points addressed in their comments; and indicates by code where the written responses of the Lead Agency (City of Pittsburg) to these comments are provided in this chapter.
- A **responses to comments** section (section X.B), which includes copies of all written comments received on the adequacy of the DSEIR during the public review period, and the response of the Lead Agency to those comments. Each written comment is coded in the right margin. Responses of the Lead Agency to the various coded comments follow each letter.

### A. INDEX TO COMMENTS

The following index is provided to assist readers in identifying (1) what DSEIR issues were commented upon by whom, and (2) where responses to these comments can be found in this chapter.

| <u>Name/Agency</u> | <u>Date</u> | <u>Code</u> | <u>Issues and Concerns</u> |
|--------------------|-------------|-------------|----------------------------|
|--------------------|-------------|-------------|----------------------------|

***Letters Received Within the 45-Day Public Review Period:***

|                                                                                |        |     |                                  |
|--------------------------------------------------------------------------------|--------|-----|----------------------------------|
| 1. Leigh Jordan, Assistant<br>Coordinator; California<br>Archaeology Inventory | 7-7-92 | 1.0 | No substantive comments on DSEIR |
|--------------------------------------------------------------------------------|--------|-----|----------------------------------|

|                                                                                                                 |         |      |                                                                         |
|-----------------------------------------------------------------------------------------------------------------|---------|------|-------------------------------------------------------------------------|
| 2. Stephen L. Berger,<br>Associate Engineer;<br>Regional Water Quality<br>Control Board                         | 7-14-92 | 2.1  | Regional Board certification of Section 404 permit                      |
|                                                                                                                 |         | 2.2  | Start-up date and NPDES stormwater construction permit issues           |
|                                                                                                                 |         | 2.3  | Wetland category definition and acreage                                 |
|                                                                                                                 |         | 2.4  | Full storage tank removal                                               |
|                                                                                                                 |         | 2.5  | Regional Water Quality Control Board wetland fill policy                |
|                                                                                                                 |         | 2.6  | Recommendation for Alternative Project Design                           |
| 3. Philip Harrington, Senior Civil Engineer, Contra Costa County Flood Control & Water Conservation District    | 7-15-92 | 3.0  | No substantive environmental comments                                   |
| 4. Gary F. Adams, District CEQA Coordinator, California Department of Transportation (Caltrans)                 | 7-17-92 | 4.1  | Height of noise berm relationship to truck exhaust stacks               |
|                                                                                                                 |         | 4.2  | Location of noise walls and berms                                       |
|                                                                                                                 |         | 4.3  | Widening of Highway 4 to eight lanes                                    |
|                                                                                                                 |         | 4.4  | Missing peak volume                                                     |
|                                                                                                                 |         | 4.5  | Incorrect arrow marks on Figures 19 through 24                          |
|                                                                                                                 |         | 4.6  | Accuracy of traffic flow on Figure 19                                   |
|                                                                                                                 |         | 4.7  | Energy impacts                                                          |
|                                                                                                                 |         | 4.8  | Caline-4 data inputs and results                                        |
|                                                                                                                 |         | 4.9  | Air quality analysis of alterations                                     |
|                                                                                                                 |         | 4.10 | Grading impacts on Highway 4                                            |
| 5. Christine Kinne, Acting Deputy Director, Permit Assistance, Governor's Office of Planning and Research (OPR) | 7-20-92 | 5.0  | Administrative letter; no substantive comments on DSEIR                 |
| 6. Lowell Tunison, Senior Civil Engineer, Contra Costa County Public Works Department                           | 7-20-92 | 6.1  | Analysis of Canal/Bailey Road intersection                              |
|                                                                                                                 |         | 6.2  | Use of ITE <u>Highway Capacity Manual</u> mid-block analysis techniques |
|                                                                                                                 |         | 6.3  | Accuracy of Table 10                                                    |
|                                                                                                                 |         | 6.4  | Impact of North Concord BART                                            |

|                                                                                |         |     |                                                               |
|--------------------------------------------------------------------------------|---------|-----|---------------------------------------------------------------|
|                                                                                |         | 6.5 | Grade of Avila Road                                           |
|                                                                                |         | 6.6 | Signal at eastbound off-ramp of Highway 4 at Willow Pass Road |
|                                                                                |         | 6.7 | CCTA fees                                                     |
| 7. John Templeton,<br>Assistant Transportation<br>Engineer, City of<br>Concord | 7-20-92 | 7.1 | Traffic impacts on intersections in Concord                   |
|                                                                                |         | 7.2 | Impacts on Bailey Road in Concord                             |

***Letters Received After the Close of the 45-Day Public Review Period:***

|                                                                                                                                          |         |      |                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------|---------|------|---------------------------------------------------------------------------------------|
| 8. Arthur R. Jensen,<br>Contra Costa Water<br>District                                                                                   | 7-22-92 | 8.1  | Acknowledgement of city water conservation commitments                                |
|                                                                                                                                          |         | 8.2  | Water conserving planting in landscape plan                                           |
| 9. James W. Cutler,<br>Assistant Director of<br>Comprehensive<br>Planning, Contra Costa<br>County Community<br>Development<br>Department | 7-27-92 | 9.1  | Culbertson property Williamson Act commitments                                        |
|                                                                                                                                          |         | 9.2  | Williamson Act limitations on construction of Leland Drive                            |
|                                                                                                                                          |         | 9.3  | Leland Drive across Alves property                                                    |
|                                                                                                                                          |         | 9.4  | Naval Weapons Station blast zone                                                      |
|                                                                                                                                          |         | 9.5  | Setbacks from transmission line electromagnetic forces                                |
|                                                                                                                                          |         | 9.6  | Slope maps                                                                            |
|                                                                                                                                          |         | 9.7  | Consistency with city policy relating to slope                                        |
|                                                                                                                                          |         | 9.8  | Slope of southwestern roadway relationship to city policy and fire district standards |
|                                                                                                                                          |         | 9.9  | Clarity of mitigation measure relating to a fire station                              |
|                                                                                                                                          |         | 9.10 | Trip distribution and assignment methodologies                                        |
|                                                                                                                                          |         | 9.11 | Elaboration of referenced land use changes                                            |
|                                                                                                                                          |         | 9.12 | Reliability of documentation of EMME-2 data discrepancies                             |
|                                                                                                                                          |         | 9.13 | Development of revised projections                                                    |
|                                                                                                                                          |         | 9.14 | Elaboration of referenced land use changes                                            |
|                                                                                                                                          |         | 9.15 | Application of "reduction factor"                                                     |

|     |                                                                                                       |         |                                                                                                           |
|-----|-------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------|
|     |                                                                                                       | 9.16    | Exclusion of Bailey Road/Willow Pass Road-Pittsburg Intersection                                          |
|     |                                                                                                       | 9.17    | Discussion of East County Action planning process                                                         |
|     |                                                                                                       | 9.18    | Recommendation for bicycle paths                                                                          |
|     |                                                                                                       | 9.19    | Recommendation for increased collector roads similar to Street B                                          |
|     |                                                                                                       | 9.20    | Access to BART                                                                                            |
|     |                                                                                                       | 9.21    | Analysis of Avila-Leland Roads/Willow Pass Road-Pittsburg intersection                                    |
|     |                                                                                                       | 9.22    | Identification of Leland-Avila Road                                                                       |
|     |                                                                                                       | 9.23    | City general plan alternative needed                                                                      |
|     |                                                                                                       | 9.24    | Graphics for alternatives                                                                                 |
|     |                                                                                                       | 9.25    | Roadway to Seecon property                                                                                |
| 10. | Martin R. Engleman,<br>P.E., Deputy Director,<br>Planning, Contra Costa<br>Transportation Authority   | 8-7-92  | 10.1 Inclusion of General Plan growth                                                                     |
|     |                                                                                                       |         | 10.2 Congestion Management Program (CMP)                                                                  |
|     |                                                                                                       |         | 10.3 Discussion of Measure C related adopted land use designations and level of service standards         |
|     |                                                                                                       |         | 10.4 Reference to the Contra Costa County CMP                                                             |
|     |                                                                                                       |         | 10.5 Reference to TRANSPLAN Routes of Regional Significance                                               |
|     |                                                                                                       |         | 10.6 Evaluation of DKS baseline travel forecasts for the years 2000 and 2010                              |
|     |                                                                                                       |         | 10.7 Clarification of Highway 4 widening mitigation                                                       |
|     |                                                                                                       |         | 10.8 Clarification of recommended CCTA fee responsibility                                                 |
| 11. | Gary F. Adams, District<br>CEQA Coordinator,<br>California Department of<br>Transportation (Caltrans) | 8-11-92 | 11.1 Caltrans projects cannot be used as mitigation for projects; additional mitigation measures required |

## **B. WRITTEN COMMENTS AND RESPONSES**

Reproductions of letters received during and after the DSEIR public review period are included in the following section. Each letter is immediately followed by the Lead Agency's response to substantive comments therein pertaining to the adequacy of the DSEIR. Comments and responses are correlated by code numbers added to the margins of each letter.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
X. Responses to Comments on the Draft SEIR  
Page 388



CALIFORNIA ARCHAEOLOGICAL INVENTORY  
Northwest Information Center  
Department of Anthropology  
Sonoma State University  
Rohnert Park, CA 94928

Randy Jerome  
City of Pittsburg  
65 Civic Drive  
Pittsburg CA 94565

7 July 1992

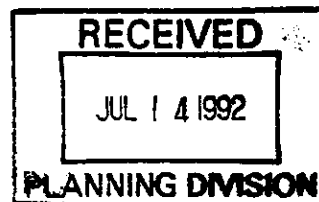
re: San Marco

Dear Randy Jerome:

Our office has no further comment on the above project.  
However, thank you for your interest in protecting  
cultural resources.

Sincerely,

*Leigh Jordan*  
Leigh Jordan  
Assistant Coordinator

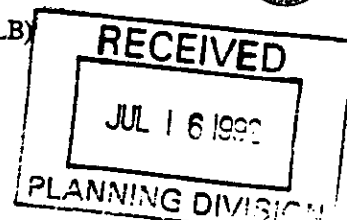


**1.0 Response to State Office of Planning and Research (OPR) Letter**

This letter includes no comments on the adequacy of the DSEIR. No response from the Lead Agency is required.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
 SAN FRANCISCO BAY REGION  
 2101 WEBSTER STREET, SUITE 500  
 OAKLAND, CA 94612  
 (510) 464-1253

July 14, 1992  
 File No. 2118.04(SLB)



Michael Chiriatti  
 State Clearinghouse  
 1400 Tenth Street  
 Sacramento, CA 95814

SUBJECT: DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT  
 SAN MARCO SUBDIVISION, PITTSBURG, CONTRA COSTA COUNTY  
 SCH# 91073029

Dear Mr. Chiriatti:

We reviewed the Draft Subsequent EIR for the above project and have the following concerns and comments:

1. On pages 77 and 253, it is stated that a Corps of Engineers 404 permit will be required. The Regional Board must certify that the Corps permit will comply with water quality standards, or waive such certification. If not waived, the certification can be granted or denied. If two or more acres of wetlands are affected, the certification must be voted on by the Regional Board in a public hearing. Less than two acres can be handled administratively. **2.1**
2. On page 220, there is mention of the NPDES stormwater construction permit. This permit is expected to be adopted this summer, with an effective date of October 1, 1992. The State Board, not the Regional Board, will issue the permit. **2.2**
3. It is not clear, after looking at pages 249, 255-57 and Appendix D, if the 3.5 acres is the total wetlands area for the site or just the riparian streambed wetlands without counting other types of wetlands. Also, phrases such as riparian vegetation, riparian thicket, jurisdictional streambed and wetland, and wet meadow should be well-defined, with the acreage of each clearly stated. These areas should be outlined on a map, such as Figure 42, using consistent descriptive language. **2.3**
4. The fuel storage tank (assumed to be underground) mentioned on page 318 will require a removal permit from the Environmental Health Division of the Contra Costa County Health Services Department. If soil or water pollution is discovered, an Unauthorized Release Form and any remediation plan must be sent to Contra Costa County and the Regional Board. **2.4**
5. On page 344, the EIR should also note the Regional Board's Wetland Fill Policy which requires no net loss of wetland acreage and no net loss of wetland value. Also, mitigation may be required, preferably in-kind and on-site with no net destruction of habitat value. **2.5**

Mr. Chiriatti

-2-

July 14, 1992

6. We suggest that to lessen impacts to wetlands, an alternative to the proposed development plan be chosen. 2.6

If you have any questions, please contact me at (510) 464-0846.

Sincerely,



Stephen L. Berger  
Associate Engineer

cc: Randy Jerome  
City of Pittsburg  
65 Civic Drive  
Pittsburg, CA 94565

## **2.0 Response to California Regional Water Quality Control Board Letter**

- 2.1 Comment acknowledged. The FSEIR has been revised on page 77 to address this comment. A reference to the Regional Board certification of the Army Corps 404 permit has also been added to page 62 in Section III.C and page 220 in Section IV.E, Drainage and Water Quality. No revision was made to the FSEIR on page 253 because this particular section addresses vegetative and wildlife issues rather than water quality concerns.
- 2.2 Comment acknowledged. The FSEIR has been revised on page 220 to address this comment regarding the appropriate body to issue the NPDES permit.
- 2.3 Comment acknowledged. The FSEIR has been revised on Figure 42 and throughout section IV.G to clarify the type, location, and quantity of wetlands on the site. Definitions of the different vegetative and habitat terminology used in the report have also been clarified on FSEIR page 247. In addition, a map of the wetland delineation work completed for the applicant by LSA, Inc., which graphically depicts the findings summarized in the letter from LSA to the applicant has been added to Appendix D in the FSEIR (only the letter was included in Appendix D of the DSEIR). This clarification of the LSA wetland delineation was reviewed by the EIR authors and incorporated into the FSEIR.
- 2.4 Comment acknowledged. The FSEIR has been revised on page 318 to incorporate this comment regarding RWQCB procedure and permit requirements relating to underground storage tank removal.
- 2.5 Comment acknowledged. This comment regarding the RWQCB's Wetland Fill Policy has been incorporated into the FSEIR on page 345.
- 2.6 Comment noted. The City of Pittsburg will consider this recommendation when reviewing the proposed project.





Contra Costa County  
**FLOOD CONTROL**  
 & Water Conservation District

J. Michael Walford  
 ex officio Chief Engineer

Milton F. Kubicek, Deputy Chief  
 255 Gracier Drive, Martinez, CA 94553-4897  
 Telephone: (510) 313-2000  
 FAX: (510) 313-2333

July 15, 1992

PLANNING DIVISION

Randy Jerome  
 City of Pittsburg  
 65 Civic Drive  
 Pittsburg, CA 94565

File: 97-48B  
 APN: 097-130-002

Dear Mr. Jerome:

We have received the Subsequent Environmental Impact Report for the San Marco Subdivision #7362, which was received by our office on June 25, 1992, and submit the following comments.

Any changes in the plans for the San Marco Subdivision leading to increased stormwater runoff and/or changes in the basin designs and all other related hydraulic designs affecting our Drainage Area 48B plans, will require further review by the Flood Control District, including the Final Map approval.

We appreciate the opportunity to review this SEIR, including any plans which involve drainage, and welcome continued coordination. If you have any questions, please call Joan Rushton at 313-2286.

Very truly yours,

Phillip Harrington  
 Senior Civil Engineer  
 Flood Control Engineering

PH:JR:kd  
 c:Jer9738B.17

cc: J. Rushton, Flood Control  
 1002-7362

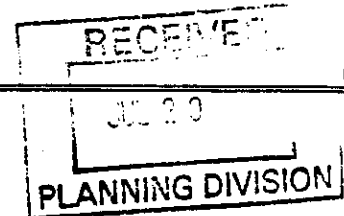
**3.0 Response to the Contra Costa County Flood Control and Water Conservation  
District Letter**

This letter includes no comments relating to the adequacy of the DSEIR. No Lead Agency response is necessary.



## DEPARTMENT OF TRANSPORTATION

BOX 7310  
SAN FRANCISCO, CA 94120  
(415) 923-4444



July 17, 1992

CC-004-R16.85  
SCH# 91073029  
CC004300

Mr. Randy Jerome, Senior Planner  
City of Pittsburg  
Community Development Department  
65 Civic Avenue  
Pittsburg, Calif. 94565

RE: Subsequent Environmental Impact Report (SEIR) for the SAN MARCO SUBDIVISION. A proposed Rezoning, Planned Unit Development, and Tentative Subdivision Map to allow development of 2,938 residential units, two detention basins/community parks, and other open space. The 639 acre project site is located on the south side of State Route (SR) 4 at Willow Pass Road in the City of Pittsburg.

Dear Mr. Jerome:

The California Department of Transportation (Caltrans) has reviewed the above-referenced document and forwards the following comments:

**NOISE**

Pages 283-285 state that the berms proposed for attenuation of noise from SR 4 may be lower than the exhaust stacks on trucks passing by. Noise barriers that are lower than the exhaust stacks of trucks (approximately 11.5 feet above the pavement of the roadway) may be less effective at attenuating exhaust stack noise from receptors at an assumed height of five feet above the ground. Consequently, Caltrans designs its noise barriers to intercept the line of sight of truck exhaust stacks. We recommend that the proposed berm be restudied. If the berm fails to block the line of truck exhaust stacks, we suggest that the developer consider increasing the berm height or implementing other noise attenuation measures as necessary. The SEIR should include a map showing the general location of the berms and walls used to mitigate noise.

4.1

4.2

**TRANSPORTATION**

To reduce the identified significant impacts for anticipated condition with or without the proposed development, we encourage the City of Pittsburg to implement measures that would provide for future widening of SR 4 to 8 lanes.

4.3

Adequate median to accommodate future BART facilities should also be included. A buffer zone between the existing State Right of Way (R/W) and the development may be preserved to accommodate future freeway improvements which may include widening, construction of earth berm, soundwalls and other highway appurtenances.

Peak hour volumes are missing at the following locations: **4.4**

- 1) AM Peak Hour off ramp volumes (EB) at the Willow Pass Road (Concord) interchange (I/C) on SR 4 (Page 151, figure 21).
- 2) PM Peak Hour on ramp volumes (EB) at Willow Pass Road Concord I/C on SR 4 (Page 154, figure 24).

Arrowmarks for WB off ramps should be corrected at the Bailey Road I/C on SR 4 (figure 19 through figure 24). **4.5**

Continuity of NB traffic flow on Willow Pass Road at the junction of SR 4 is questionable. Please check figure 19 (Page 149). **4.6**

## ENERGY

Appendix A, Pages 4-5, and 10 indicate that the project and its construction will consume substantial amounts of fuel and energy, and create a substantial demand for existing energy sources. Yet, there is no discussion of this impact anywhere in the SEIR. The SEIR should address the impact of this project on electric and natural gas supply systems, electricity and natural gas usage, vehicular fuel usage, and construction energy usage. The SEIR should also discuss any measures incorporated into the project to conserve residential, vehicular, institutional (i.e., street lighting), and construction energy, to reduce peak electrical use, or to utilize alternative energy sources. **4.7**

## AIR QUALITY

With respect to two areas of the CALINE-4 analysis of projected carbon monoxide emissions (Appendix E, Pages 1-2), please identify the inputs used for idling, accelerating, and decelerating traffic and speeds. We recommend that the complete air quality report or a listing of the data inputs and results of the CALINE-4 modeling be included in the SEIR. Caltrans notes that locations ten meters from the roadway edge were used in the modeling. Ten meters may be too distant. We suggest that the analysis be rerun with actual receptor locations. **4.8**

Jerome/CC004300  
July 17, 1992  
Page 3

The analysis for URBEMIS appears logical. The results (Table 38, Page 297) of the analysis for reactive organic gases and nitrogen oxides are, however, excessive in comparison with BAAQMD criterion for significant impact. The results suggest the need to seriously consider reduced intensity and other alternatives. More information on the air quality analysis for these should be provided in the SEIR. 4.9

#### SOILS AND GEOLOGY

The SEIR does not provide adequate information regarding possible grading impacts to existing SR 4. Caltrans would like the opportunity to review more detailed plans showing a relationship of the project to the highway R/W line. The area of cut or fill should also be shown. 4.10

We appreciate the opportunity to work with you on this project and wish to continue close correspondence on its development. Should you have any questions regarding these comments, please feel free to contact Joe Aguilar of my staff at (415) 904-9641.

Sincerely,

PRESTON W. KELLEY  
District Director

By

*[Signature]*  
For: GARY F. ADAMS  
District CEQA Coordinator

cc: Mike Chiriatti, State Clearinghouse  
Susan Pultz, MTC  
Sally Germain, ABAG

#### **4.0 Response to the California Department of Transportation Letter**

- 4.1 The proposed berms would be constructed at elevations approximately 40 feet or higher above the highway (at the location shown on FSEIR Figure 43). The placement of the berm in this location would break the line-of-sight between the exhaust stacks of trucks and a project-related receptor.
- 4.2 Comment acknowledged. The location of the proposed berms has been added to Figure 43 of the FSEIR.
- 4.3 Adequate right-of-way along the Highway 4 corridor for maximum planned freeway widening (i.e., eight lanes, plus auxiliary lanes), the planned BART extension, construction of sound walls or earth berms, etc., has been provided for in the Willow Pass Grade improvement project. However, the impacts of the proposed project alone would not require that the freeway be widened beyond six lanes.
- 4.4 Comment acknowledged. Figures 21 and 24 have been revised in the FSEIR to include the missing volumes.
- 4.5 Comment acknowledged. The directional arrow referred to in this comment on Figure 24 has been corrected in the FSEIR.
- 4.6 The northbound Willow Pass traffic flow projections at Highway 4 on Figure 19 have been checked and are correct.
- 4.7 Following city completion of the Initial Study, the EIR authors and City of Pittsburg Community Development Department staff concluded that the energy needs associated with construction of the residential project and its ongoing occupancy would not require an unusual or substantially greater level of energy consumption than that of other conventional residential developments. Therefore, the scope of the SEIR did not include energy as an issue for further, more detailed evaluation.
- 4.8 Comment acknowledged. The requested inputs to the CALINE-4 intersection model were:

Freestream average speed: 30 MPH

Acceleration rate: 2.5 MPH/second

Deceleration rate: 2.0 MPH/second

Idle times, the number of vehicles approaching the intersection per signal cycle, and the number of vehicles stopped per signal cycle, were based on signal cycle times and

green time fractions consistent with the Level of Service analyses results for each intersection of interest.

For transportation improvement projects where intersection geometrics will change traffic concentrations near existing homes or businesses, it is appropriate to select actual or expected receptor locations. However, the purpose of the CALINE analysis in the San Marco SEIR was to forecast CO levels given changes in traffic volumes and congestion conditions under uniform assumptions regarding new, future receptor locations. While receptors closer than 10 meters from the roadway would provide higher estimates of concentration, the 10 meter distance was selected as the closest distance where a planned future commercial or residential land use might result in a continuous 1-hour or 8-hour exposure. A location 10 meters from each street near an intersection is considerably less than 10 meters from the curb when curb return dimensions are also considered. The EIR authors consider the selected receptor locations to be appropriate, and the CALINE-4 analysis has not been rerun with different receptor locations.

- 4.9 The DSEIR identifies regional air pollutant emissions increases associated with future growth as a significant air quality impact. This conclusion is based on comparison of the project-related emissions to the thresholds of significance recommended by the Bay Area Air Quality Management District.

While reduced intensity would reduce the degree of this project-related significant impact, it would not necessarily result in improved regional air quality, since unmet demand for residential development may occur elsewhere. Reduction in project intensity may be appropriate if the project resulted in a population growth outlook for Pittsburg which was inconsistent with the population projections contained in the Bay Area '91 Clean Air Plan. However, as noted on page 298 of the Draft SEIR, the population increase that would occur with the proposed project appears consistent with the ABAG projections utilized in the Bay Area '91 Clean Air Plan.

- 4.10 The project grading plan has been revised to coordinate with the Caltrans widening plans for Highway 4 in front of the project site. This coordination effort was supervised by Robert V. Farone, Senior Civil Engineer, Major Projects Division, Contra Costa County Public Works Department. Caltrans personnel involved in these coordination efforts included M. Babaki and S. Chanal.

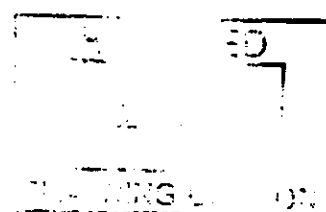
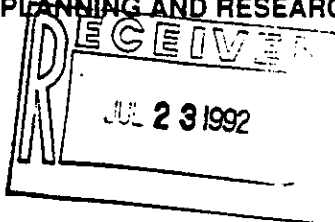
San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
X. Responses to Comments on the Draft SEIR  
Page 402

## GOVERNOR'S OFFICE OF PLANNING AND RESEARCH

1400 TENTH STREET  
SACRAMENTO, CA 95814

Jul 20, 1992

RANDY JEROME  
CITY OF PITTSBURG  
65 CIVIC AVENUE  
PITTSBURG, CA 94565Subject: SAN MARCO SUBDIVISION NO. 7362  
SCH # 91073029

Dear RANDY JEROME:

The State Clearinghouse has submitted the above named draft Environmental Impact Report (EIR) to selected state agencies for review. The review period is now closed and the comments from the responding agency(ies) is(are) enclosed. On the enclosed Notice of Completion you will note that the Clearinghouse has checked the agencies that have commented. Please review the Notice of Completion to ensure that your comment package is complete. If the comment package is not in order, please notify the State Clearinghouse immediately. Remember to refer the project's eight-digit State Clearinghouse number so that we may respond promptly.

Please note that Section 21104 of the California Public Resource Code required that:

"a responsible agency or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency"

Commenting agencies are also required by this section to support their comments with specific documentation. These comments are forwarded for your use in preparing your final EIR. Should you need more information or clarification, we recommend that you contact the commenting agency(ies).

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact Daralynn Cox at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

A handwritten signature in cursive script that reads "Christine Kinne".

Christine Kinne  
Acting Deputy Director, Permit Assistance

Enclosures

cc: Resources Agency

# Notice of Completion

Appendix F

Marine State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 916/445-0613

See NOTE below

SCH # 51073029

Project Title: SAN MARCO

Lead Agency: City of Pittsburg

Street Address: 55 Civic Drive

City: Pittsburg

Zip: 95664

Contact Person: Randy Jerome

Phone: (510) 439-4920

County: Contra Costa County

## Project Location

County: Contra Costa County

City/Town Community: Pittsburg

Cross Streets: W. of Bailey Rd. & E. of Highway 4

Total Acres: 639

Assessor's Parcel No.: 007-110-002

Section: n/a

Top: n/a

Range: n/a

Base: n/a

Within 2 Miles: State Hwy: HIGHWAY 4

Waterways: New York Slough (Delta/San Joaquin)

Airports:

Railways: Santa Fe

Schools: Ed. Line Elementary

## Document Type

CEQA:

☐ NOP

☐ Early Cons

☐ Neg Dec

☒ Draft EIR

☒ Supplement/Subsequent

☐ EIR (Prior SCH No.)

☐ Other

NEPA:

☐ NOI

☐ EA

☐ Draft EIS

☐ FONSI

Other:

☐ Joint Document

☐ Final Document

☐ Other

## Local Action Type

☐ General Plan Update

☐ General Plan Amendment

☐ General Plan Element

☐ Community Plan

☐ Specific Plan

☐ Master Plan

☐ Planned Unit Development

☐ Site Plan

☒ Rezone

☐ Prezone

☐ Use Permit

☒ Land Division (Subdivision)

Parcel Map, Trust Map, etc.)

☐ Annexation

☐ Redevelopment

☐ Coastal Permit

☐ Other

## Development Type

☒ Residential: Units 2,938 Acres 639

☐ Office: Sq. ft. Acres Employees

☐ Commercial: Sq. ft. Acres Employees

☐ Industrial: Sq. ft. Acres Employees

☐ Educational

☐ Recreational

☐ Water Facilities: Type MGD

☐ Transportation: Type

☐ Mining: Mineral

☐ Power: Type Wells

☐ Waste Treatment Type

☐ Hazardous Waste: Type

☐ Other:

## Project Issues Discussed in Document

☒ Aesthetics/Visual

☒ Agricultural Land

☒ Air Quality

☒ Archaeological/Historical

☒ Coastal Zone

☒ Drainage/Absorption

☒ Economic/Job

☒ Fiscal

☐ Flood Plain/Flooding

☐ Forest Land/Fire Hazard

☐ Geologic/Seismic

☐ Minerals

☐ Noise

☐ Population/Housing Balance

☐ Public Services/Facilities

☐ Recreation/Parks

☐ Schools/Universities

☐ Sewer Systems

☐ Sewer Capacity

☐ Soil Erosion/Compaction/Grading

☐ Solid Waste

☐ Toxic/Hazardous

☐ Traffic/Circulation

☐ Vegetation

☐ Water Quality

☐ Water Supply/Groundwater

☐ Wetlands/Riparian

☒ Wildlife

☐ Visual Impacts

☐ Cumulative Effects

☐ Other

## Present Land Use/Zoning/General Plan Use

Present land use: vacant ranch land /

Zoning: temporarily unclassified District (S)

General Plan: Rural Estate, Low Density, & Medium Density Residential, Ag Preserve & Park

Project Description and tentative subdivision map approval for a 639-acre site in the

City of Pittsburg to allow phased construction of the San Marco project, a master planned

community including 2,938 residential units, a community park/detention basins area, two

community recreational facilities, and three small village parks. The proposed 2,938 homes

would include 1,321 single-family units, 1,575 multiple-family units, and 42 ranchettes.

Project buildout is expected to occur in phases over a period of 10 to 15 years.

CLEARINGHOUSE CONTACT: MICHAEL CHIRIATTI  
(916) 445-0613

STATE REVIEW BEGAN: 6.5.92  
DEPT REV TO AGENCY: 7.13  
AGENCY REV TO SCH: 7.17  
SCH COMPLIANCE: 7.20

CHT SNT

☒ Resources

CHT SNT

State/Consumer Svcs

PLEASE NOTE SCH NUMBER ON ALL COMMENTS

PLEASE FORWARD LATE COMMENTS DIRECTLY TO THE LEAD AGENCY ONLY

END APPEND: 2 (Resources: 6.6)

\*\*\* = sent by lead / \*\*\* = sent by SCH

Caltrans 1.4

Health TOXIC

State Lands Comm



### **5.0 Response to the Governor's Office of Planning and Research Letter**

This OPR letter simply informs the lead agency that the state-required 45-day public review period closed on July 20, 1992. No further response by the Lead Agency is required.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
X. Responses to Comments on the Draft SEIR  
Page 406

**Contra  
Costa  
County**

**Public Works Department**

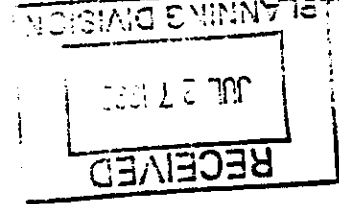
255 Glacier Drive  
Martinez, California 94553-4897  
FAX: (510) 313-2333  
Telephone: (510) 313-2000

J. Michael Walford  
Public Works Director

Milton F. Kubicek  
Deputy Director

Maurice E. Mitchell  
Deputy Director

July 20, 1992



Mr. Randy Jerome  
City of Pittsburg  
65 Civic Drive  
Pittsburg, CA 94565

Re: San Marco Subdivision  
File: Review:City of Pittsburg

Dear Mr. Jerome:

We have reviewed the Subsequent Environmental Impact Report (SEIR) for the San Marco Subdivision and have the following comments and concerns:

1. On page 122, the SEIR discussion of the local roadway system and the critical local road system locations does not include Canal Road. While not a principal local roadway, the sections of Canal Road immediately east and west of Bailey Road contain locations of concern to the County.

Canal Road has a history of carrying overflow traffic from nearby congested roadways and the freeway. This SEIR should include an analysis of Canal Road and its environs, including its intersection with Bailey Road. This may include safety considerations at Bel Air School and locations on Canal Road that currently have deficient alignments.

6.1

2. In Table 10 on page 129, the footnote indicates that capacities for this table are based upon information contained in the 1985 Highway Capacity Manual. It would be very helpful if such footnotes also provided specifics on exactly what and where in the Highway Capacity Manual the data is derived from.

6.2

For example, the capacity determination for Bailey Road, north of Leland Road, would appear to have been made on the basis of vehicle volumes (as in "Multilane Highways"). However, Bailey Road is a signalized street with signals less than two miles apart, and hence under Highway Capacity Manual guidelines, Bailey Road's level of service should be evaluated under "Urban and Suburban Arterials" procedures. It is not clear from the footnote which methodology was used on Bailey Road, but Table 10's numbers would indicate that the "Multilane Highways" procedure may have been used in error. The sections of the SEIR dealing with the analyses for Bailey Road north of Leland Road should be reviewed to consider the level of service based on average travel speeds for the midblock segments, together with the point capacity of the signalized intersections.

6.3

Mr. Randy Jerome  
July 20, 1992  
Page 2

Willow Pass Road, east of Port Chicago Highway, is another street with similar operating characteristics as Bailey Road, north of Leland Road. The sections of the SEIR on Willow Pass Road should be reviewed to determine if the correct methodology was used in the analysis.

3. The SEIR needs to include a discussion on the North Concord BART Station and its impact on Avila Road, Evora Road, and the potential western extension for Evora Road. This station could constitute an attractive alternative for BART riders from West Pittsburg, the San Marco project and possibly from areas further east. This may necessitate the provision of additional lanes on Avila Road west of the project or other mitigation appropriate to the impacts. 6.4

Because the steep grades on Avila Road west of the project will have a significant effect on lane capacity, serious consideration should be given to the provision of truck climbing lanes as a minimum requirement at this location. 6.5

4. This project will extend Willow Pass Road. This will require that a signal be installed at the east bound offramp of State Route 4. Mitigation should be totally borne by this project. 6.6

5. Mitigation measures for the San Marco Project's impacts, as proposed in the SEIR, are based on fair-share contributions from this project, as well as other future developments. This scenario depends on the imposition of a traffic mitigation fee by the City of Pittsburg, as well as regional fees by the Contra Costa Transportation Authority for the regional system. For the impacts to be adequately mitigated, the fee system should be in place. The EIR should discuss how the impacts are mitigated if these fee programs are not implemented. 6.7

Very truly yours



Lowell Tunison  
Senior Civil Engineer  
Major Projects Division

LT:FL:pe  
c:SanMarco.17  
cc: M. Shiu, Road Engineering

## **6.0 Response to the Contra Costa County Public Works Department Letter**

6.1 The DSEIR provides traffic volumes on Bailey Road in the vicinity of Canal Road. However, an analysis of Canal Road was not included in the scope of the DSEIR because the EIR for the State Route 4/Bailey Road Interchange Improvement Project, certified by Contra Costa County in September of 1991, includes an analysis of the impacts to the intersection of Canal Road and Bailey Road. This county analysis included conservative assumptions for traffic to be generated by the San Marco project site.

6.2 Midblock capacities presented in Table 10 (page 129) of the DSEIR were developed by the EIR traffic consultant, a registered traffic engineer, based upon observation of existing traffic flow characteristics along each roadway in combination with application of a methodology developed by the EIR traffic consultant that takes into account the various factors listed in the Institute of Traffic Engineers (ITE) 1985 Highway Capacity Manual that affect traffic flow.

The midblock capacity methodologies for urban/suburban streets as presented in the ITE 1985 Highway Capacity Manual (HCM) have been found to be less than realistic, with results primarily determined by major intersection operation. These current HCM methodology limitations have now been recognized by the ITE, and this chapter of the HCM is currently being rewritten.

6.3 The estimated capacities in Table 10 have been provided in order to provide a realistic, common baseline with which to judge existing and future volumes. Using existing, observed speeds to determine midblock capacities and levels of service is appropriate for use in determining existing operational conditions. However, there is no good, reliable technique for estimating future speeds for numerous horizon year traffic conditions.

6.4 The EIR authors and the City of Pittsburg do not believe that the North Concord BART station would be a more attractive alternative than the proposed West Pittsburg station for residents of West Pittsburg and the project. The West Pittsburg station would be closer than the North Concord BART to most West Pittsburg residents, would have just as much parking as the North Concord station, and would present a better opportunity for riders to get a BART seat as the train would be empty when boarded at the terminal West Pittsburg station.

6.5 The EIR authors and the City of Pittsburg Community Development and Engineering Departments do not consider Avila Road to be the preferred truck route through the vicinity due to its grade. In addition, the City Engineer anticipates that the widening of Avila Road to four lanes will be included in the list of common capital improvements to

be funded by the new City traffic impact mitigation fee, prior to the buildout of the project.

- 6.6 As clearly stated on page 177 and again on page 179 of the DSEIR, a signal would be required at the new Willow Pass Road/Highway 4 Eastbound offramp intersection by the end of San Marco Phase I. The City of Pittsburg should require full funding for this capital improvement on a "fair share" basis from the San Marco development plus any other pending developments in the immediate area which are expected to come "on line" in the same time period.
- 6.7 The City of Pittsburg traffic impact fee is in place. The development of the Contra Costa Transportation Authority traffic impact fee program is currently ongoing. If the CCTA fee program is not established and implemented prior to the issuance of all San Marco project building permits, then the impacts of those pre-fee project building permit approvals on roadway system components located outside of the Pittsburg city limits would be considered unmitigable significant adverse regional traffic impacts. This clarification has been added to the FSEIR on pages 178 and 179.

City of Concord  
Public Works Department  
1455 Gasline Alley  
Concord, California 94520-1507  
Tel. (510) 890-1900  
Michael D. Vogan, Public Works Director  
Telephone: (510) 671-3129

**Concord**

RECEIVED

JUL 23 1992

PLANNING DIVISION

City Council  
Nancy Gore, Mayor  
Mark DeSantis, Vice Mayor  
Byron Campbell  
Colleen Call  
David D. Mashore  
Rita Hardin, City Manager

7

July 20, 1992

City of Pittsburg  
Attn: Randy Jerome  
65 Civic Avenue  
Pittsburg, CA 94565

**Subject: EIR for the San Marco Subdivision**

The City of Concord Transportation Division has the following comments on the transportation section of the EIR:

- The traffic impacts of the proposed 2,938 residential units could significantly impact streets and intersections in Concord. Additional traffic analysis should be conducted at the intersections of Willow Pass Road/Landana Drive, Willow Pass Road/Olivera Road/Farm Bureau Road, and Bailey Road/Concord Boulevard. 7.1
- Additional traffic analysis is also needed for the section of Bailey Road from the Concord city limit to Concord Boulevard. The Concord General Plan Circulation Element designates this section of Bailey Road as a two lane roadway. Is this roadway capacity sufficient to handle the cumulative traffic alternative? 7.2

In the spirit of cooperation set forth by the Contra Costa Transportation Improvement and Growth Management Program, also known as Measure C, the City of Pittsburg and/or the EIR consultant should have discussed the project's traffic impacts and mitigations with the City of Concord's Transportation Division. We believe that a discussion with the consultant and yourself is imperative prior to the issuance of the Summary of Comments and Responses. 7.3

Please contact me if there are any questions or comments regarding this letter.

Sincerely,



John Templeton  
Assistant Transportation Engineer  
vpo/rtm

**7.0 Response to the City of Concord Transportation Division Letter**

- 7.1 The EIR identifies traffic volumes on Willow Pass Road and Bailey Road south of Leland Road. It is assumed that the ongoing CCTA efforts in which both the cities of Pittsburg and Concord will actively participate will establish a standard procedure for evaluating and mitigating such potential inter-jurisdictional traffic impacts. When a regional traffic impact mitigation fee is adopted by the CCTA, any subsequent project building permits would be subject to this fee. Any project residential building permits issued before establishment of such a regional fee would be considered unmitigable adverse regional traffic impacts.
- 7.2 See Response to Comment 7.1.
- 7.3 As Concord Transportation Division staff may recall, and as indicated on page 389 of the DSEIR, the EIR traffic consultants did contact Tom Clausen, Director of Transportation Planning and John Templeton, Assistant Transportation Engineer, for the City of Concord at the outset of the San Marco DSEIR preparation effort regarding the scope and cumulative assumptions to be included in this DSEIR traffic analysis.



**CONTRA COSTA  
WATER DISTRICT**

1331 Concord Avenue  
P.O. Box 120  
Concord, CA 94524

**Directors**

Ronald E. Butler  
President

Charles L. Pellegrin  
Vice President

Bette Boalman  
Donald P. Freitas  
Joseph L. Campbell

William Woska

Acting General Manager

Mr. Randy Jerome  
City of Pittsburg  
65 Civic Drive  
Pittsburg, CA 94565

Dear Mr. Jerome:

Subject: Commentary on Subsequent Draft EIR for the San Marco Subdivision  
(Subdivision #7362).

Thank you for the opportunity to review the SDEIR on this project. We have reviewed the project and related Southwest Hills area information contained in the document and compared it with our existing data base on water supply. From this we make the following observations applicable to the Water section (pages 263-4):

1. Issue: The Notice of Preparation (NOP) input (copy enclosed) requested SDEIR review of the impacts of this development and the cumulative impacts of other proposed projects on CCWD's water supply. To this, we find:

- (a) "The planned expansion of the city's water system" in the Southwest Hills Region to be designed to serve approximately 5,300 residential units. Earlier, CCWD planning for this area was for 2,030 housing units (1987 Response Document for the Southwest Hills Annexation/General Plan Amendment EIR).
- (b) The incremental impact of a 1.6 million gallon per day demand (or nearly 1,800 acre-feet per year) represented by 5,300 residential units is insignificant compared to previous demand figures based on the lower housing unit forecast and with respect to CCWD's overall buildout demand projections for its service area (i.e., cumulative impacts consistent with the 1991 Contra Costa General Plan which incorporated the City of Pittsburg General Plan).

CCWD studies (Los Vaqueros Project Stage 2 EIR/EIS Scoping Report, March 1991) indicate a County General Plan buildout demand of 174,600 acre-feet per year (af/yr) during non-critical years (i.e., normal rainfall). When recent annexation and resulting development demands, including the revised Southwest Hills figures, are added to the figure, the projected buildout water demand is approximately 176,800 af/yr compared to CCWD's contracted Central Valley Project supply of 195,000 af/yr.

and open space areas.

- (a) The SEIR should cite city commitments to water conservation which may apply to the San Marco Project. These would include Water Conservation Guidelines for new developments (Resolution 8122), other documents (State signed MOU, Urban Water Conservation Contingency Plan), and the adopted Urban Water Management Plan. 8.1

Please refer any adopted landscape guidelines addressing water conserving planting elements to the Project Description Landscape Plan described on page 73 in order to indicate that drought tolerant species (and water conserving objectives) are to be incorporated into the project. 8.2

It appears that our NOP concerns over increased stormwater runoff and erosion potential affecting the waters of the Contra Costa Canal are not relevant. We assume it will not be necessary for stormwater conveyances to cross the Canal requiring permits from CCWD and the U.S. Bureau of Reclamation. Likewise, any potential soil erosion arising from grading and construction or non-point pollution from development is assumed to be directed into natural drainage (Shore Acres Creek) or appropriate improvements and mitigation features (detention basins).

Thank you again for this opportunity for comment. If you have any questions, please contact Dennis Pisila, Utility Planner at 674-8119.

Sincerely,



-----  
Enclosure

**8.0 Response to the Contra Costa Water District Letter**

- 8.1 Comment acknowledged. The FSEIR has been revised on page 264 to reflect city water conservation commitments.
- 8.2 Comment acknowledged. The existing mitigation measure here has been expanded on page 264 of the FSEIR in response to this comment regarding the need for water conservation provisions in the project landscape plan.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
X. Responses to Comments on the Draft SEIR  
Page 416

Community  
Development  
Department

County Administration Building  
651 Pine Street  
4th Floor, North Wing  
Martinez, California 94553-0095

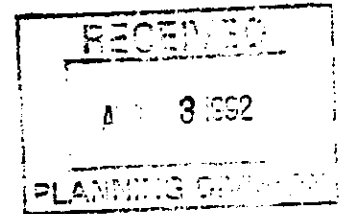
Phone: (510) 646-2035

Contra  
Costa  
County



Harvey E. Bragdon  
Director of Community Development

9



July 27, 1992

Mr. Randy Jerome  
Pittsburg Planning Department  
65 Civic Drive  
Pittsburg, CA 94565

Dear Randy,

Thank you for the opportunity to review the Draft Subsequent Environmental Impact Report for the San Marco Subdivision. While the document contains many issues of importance, there are a few areas which require more detail.

On Pages 52, 84, and elsewhere in the report, it indicates that the Culberson ownership is still under an agricultural preserve contract, which won't expire until February 1997. The first EIR needs to add a mitigation measure which assures that development won't occur on this property until after that date or until contract cancellation fees are paid to the state. Does the Leland Drive extension cross the preserve area? If it does, the project may require the cancellation process to be initiated. 9.1 9.2

Page 62 states that staff has required the interconnect across Alves property must be "completed prior to occupancy of the San Marco project." The way this is stated it does not appear to be part of the project description. It then would need to be treated as a significant impact and a mitigation measure. 9.3

Lands to the south and west are located in the Naval Weapons Station blast zone. This proposed site plan has homes immediately adjacent to blast zone area as discussed on Page 89. The DSEIR does not discuss additional setbacks, or notification requirements or other issues arising from public safety concerns; it should. Two of the alternatives discuss pulling development off the southwest corner of the site and adding that area to the open space area. Safety concerns or the public perceptions of these concerns might reinforce use of these alternatives. It would also limit the growth-inducing impact of the project. 9.4

The issue of electromagnetic force is discussed on Page 99 and following pages. Given the embryonic stage of knowledge on this subject, additional setbacks should be considered as a potential mitigation measure. P G & E should be able to provide a curve on the distance from 9.5

Mr. Randy Jerome  
July 27, 1992  
Page 2

the transmission line that may provide added buffer protection. Notification requirements on Page 317 may not really mitigate the impact.

The landslide map on Page 189 shows the southern hillside to have a very high contour interval. No slope map is included within the DSEIR. This deficiency should be eliminated in the FSEIR. The relationship of the project to City General Plan policies relevant to slope need to be described. Is the southwestern roadway consistent with City slope policies? Will this road be consistent with fire district standards for a major road which will service lands to the south?

9.6  
9.7  
9.8

On Page 269 the fire mitigation measures are not clearly written. Is this development required to provide for a new fire station or station site? The site plan does not show one but the mitigation implies one is needed. The mitigation measure could be modified to call for provision of a new station on site along Leland Road.

9.9

The following are comments and concerns pertaining to the Transportation Section of the DSEIR:

- The Trip Distribution and Assignment methodologies are questionable. The section stated that the consultants surveyed residents of adjacent subdivisions, and used previous studies to determine project trip distribution patterns and traffic assignments.

9.10

Because of the significant scope and breadth of the San Marco proposal, the trip distribution and assignment section beckons expanded discussions at least describing and explaining the nature and results of the: 1) survey process, 2) outbound and inbound vehicle sampling process as it relates to regional distribution patterns, and 3) valid applicability of items 1 and 2 for each project phase relating the project trip distributions and assignments to the off-site roadway (i.e. Willow Pass Road-Pittsburg, Leland/Avila Roads, Bailey Road Inter-change/SR 4). If the project contributes few peak hour trips to SR 4, where do the rest of the peak hour trips go?

- Page 163 Section 5 - Regional Roadway Impacts

The DSEIR states: "Future (year 2005) projections for these roadways were available from the Contra Costa County General Plan Circulation Element traffic model (EMME 2) for this time period. However, due to the significant changes in expected future land use that have occurred over the past three years, as well as county and City of Concord's staffs'

general concerns regarding the reliability of these EMME 2 projections, a set of revised projections has been developed for the four analysis locations evaluated for this DSEIR study by applying a reduction factor to the county general plan projections. This reduction factor was developed based upon the 1990 revised year 2005 traffic projections for Highway 4 between Pittsburg and Concord versus those developed for the county general plan. The more current projections for Highway 4 in this areas show approximately a 44 percent decrease in traffic over those projected for the county general plan."

First, the reference to "significant changes in expected future land use that have occurred over the past three years" needs further elaboration. If the DSEIR is assuming that there has been significant land use changes in the past three years from what was originally planned by either the city or county general plans, the these changes should be more specifically identified and quantified in order to substantiate and justify claims of lower overall traffic. The consultants should provide land use maps from relevant general plans and show where any "significant land use changes" may have occurred. These changes should also be detailed in tabular form so that the discrepancies be easily compared and contrasted by the reader. 9.11

The same can be said of the statement "as well as county and City of Concord's staff's general concerns regarding the reliability of these EMME 2 projections." If the DSEIR is using the argument that because of concerns related to reliable EMME 2 data, then discrepancies should be detailed by consultant staff so that questions can be answered regarding the nature and extent of any land use data discrepancies. 9.12

First of all, there is no discussion of how these "revised projections" were developed. If there were significant changes made to the land use data set, then were they based on changes which are referenced on the bottom of page 163 of the DSEIR or are they based on some other assumptions developed by consultant staff? 9.13

It would be prudent for the DSEIR to detail the nature and extent of the land use changes which are referenced in the DSEIR by either providing some sort of comparison table or by referring to a city or county land use map showing where the land use changes are located. 9.14

Furthermore, the DSEIR states that a "reduction factor" (developed by the Highway 4 EIR) was also applied to the revised projections. This reduction factor may have been appropriate for the Highway 4 EIR, but because there is no discussion of how the "revised projections" developed for the San Marco development relate to either the county land use 9.15

projections or the projections developed in the Highway 4 EIR, use of this same reduction factor may not be appropriate to the methodology used for the San Marco DSEIR and hence, would lead to inaccurate estimates regarding future traffic generation and conditions.

- With the exclusion of the Bailey Road/Willow Pass Road-Pittsburg connection from the analysis, the DSEIR is remiss. Not Connecting these two arterials leads one to question the validity of the analysis, especially realizing that to do so may have significant ramifications on the area transportation network and conceivably requiring additional mitigations as well. 9.16

County staff recommends connecting the segment from the stub to Bailey Road also be included in the analysis of the FSEIR.

- As part of the Congestion Management Process, Regional Transportation Committees, comprising multi-jurisdictions, have been formed to develop regionally oriented transportation plans -- Action Plans -- for Routes of Regional Significance, predicated on traffic forecasts of sub-area modeling efforts.

The FSEIR should succinctly discuss the East County Action Planning process, relating the regional impact fees for improving identified Routes of Regional Significance. 9.17

- The DSEIR stated that there were no provisions available for bicycles in terms of paths or striping along the internal circulation system. This design approach, for several of the villages, is auto oriented. Understandably, there is an electrical easement in the middle of the project that may hinder redesigning the internal road network to provide collector, interconnecting the central villages; but developing bicycle paths to interconnect may more be feasible in conjunction with pedestrian paths. 9.18

Moreover, having several interconnecting collector roads similar to Street B threading the project may foster improved transit service for the area, and would help reduce reliance on the arterial systems. 9.19

- The project will provide approximately 3000 dwelling units for that area, which is relatively near the proposed BART station. Only a portion of the development will be within walking distance of the BART station, leaving the other residents with no other alternative but to drive to the station and vie for parking spaces. The DSEIR should include an analysis of the impact this development would have on BART parking facilities in the area. 9.20



Mr. Randy Jerome  
July 27, 1992  
Page 5

Staff recommends that the development through a Home Owners' Association provide BART shuttle service to and from identified locations within the development.

- o The LOS analysis of the impacted intersections during the three phases did not include Avila-Leland Roads/Willow Pass Road - Pittsburg. Since this is a major cross-road of the development and since it will be a major regional intersection for that area, it should be included in the analysis.

9.21

A small point, but Leland Road and Avila Road will be joining. The location of where these road names change should be easily definable on the ground. From a public safety point of view, maybe Avila Road should be renamed Leland after they join together (done in cooperation with the County). This may avoid future confusion for emergency vehicles and the public.

9.22

The chapter on the relationship to the adopted City General Plan indicates substantial areas where the project would not be consistent with the City General Plan. An alternative should be provided which describes a project complying with the adopted City Plan. Areas of particular concern are the inconsistency with protecting view corridors as it relates to the southwest hills on Page 324, sensitivity to major ridgelines on Page 326, provision of day care facilities discussed on page 332, preserving and enhancing Pittsburg Creeks described on Page 338. With so many areas of inconsistency it is hard to understand how this project can be approved without a revised design.

9.23

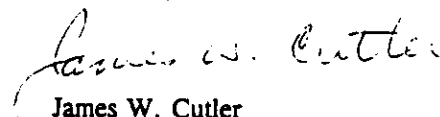
Two of the alternatives listed in the report do not have figures prepared for them consistent with the other alternatives: those should be provided since they may resolve some of the General Plan inconsistencies described in the report.

9.24

Lastly, the need for an arterial southerly onto the Seecon property needs to be described since this area is shown as Williamson Act lands on the City General Plan. Is this roadway consistent with the City's General Plan? What are the long-term traffic impacts on Bailey Road of such a potential connection?

9.25

Sincerely yours,



James W. Cutler  
Assistant Director of  
Comprehensive Planning

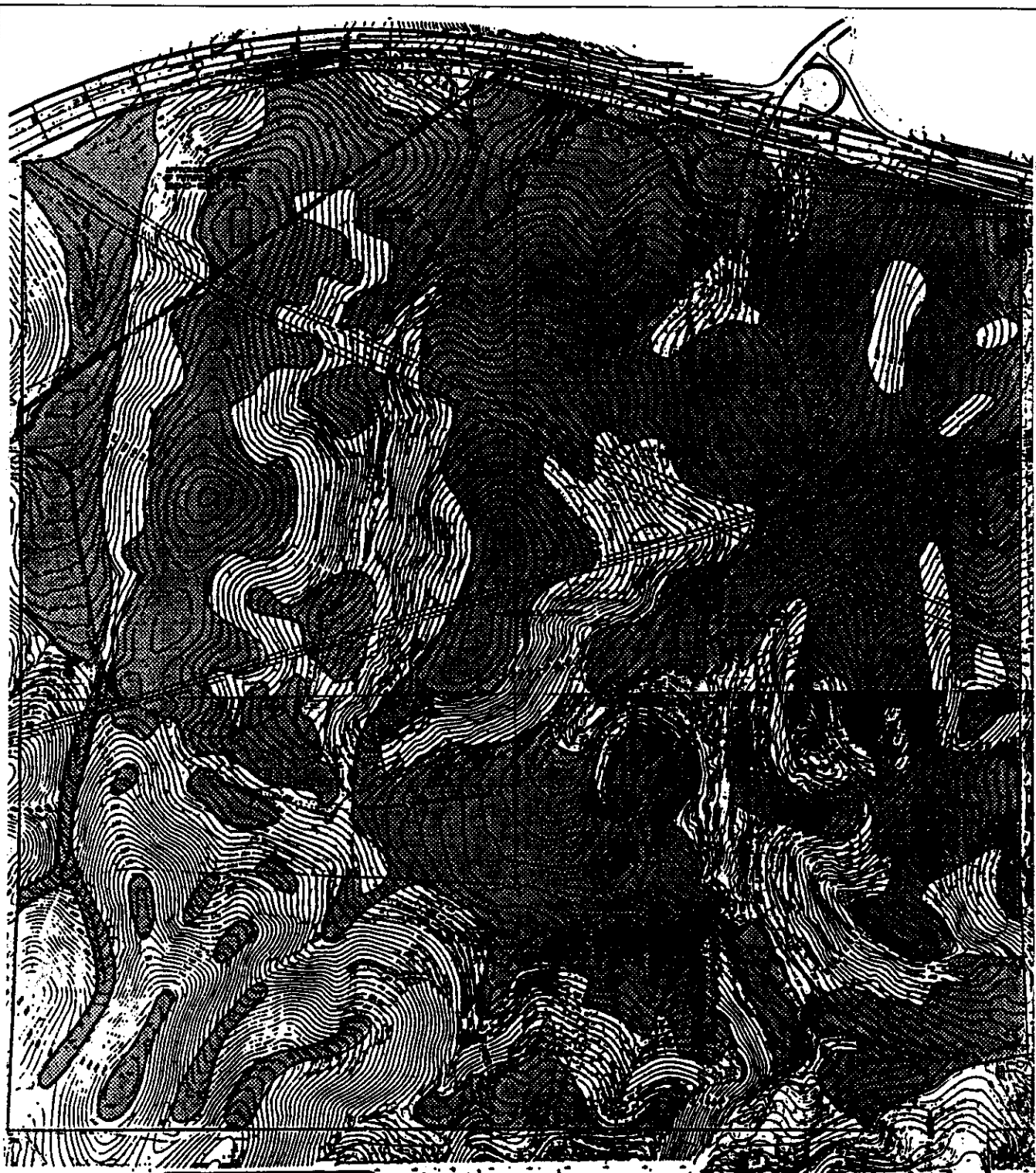
**9.0 Response to the Contra Costa County Community Development Department Letter**

- 9.1 Comment acknowledged. The FSEIR has been revised on pages 99 and 107 to further address the issue of the project impacts on lands with active Williamson Act contracts.
- 9.2 See response to comment 9.1 above.
- 9.3 Comment acknowledged. The FSEIR has been revised on pages 62, 142, and 179 to address the issue of access through the Alves property.
- 9.4 Comment acknowledged. The FSEIR has been revised on pages 95, 105, 109, and 367 in response to this comment relating to the Concord Naval Weapons Station.
- 9.5 This comment is generally consistent with proposed mitigation measure IV.L.3.a.1 on DSEIR page 317. While PG&E's position is that no additional setbacks from the easements are required, the DSEIR suggests consideration of a conservative approach consistent with the setback guidelines for schools established by the California State Department of Education.
- 9.6 A slope map has been included in this response to comments. See response to comment 9.7.
- 9.7 The Pittsburg General Plan does not include specific policies addressing slope within residential development. Rather, such a project is evaluated with respect to those general plan policies which relate to Hillside Subareas, Residential Areas, and Geologic and Soils Hazards as described on SEIR pages 326, 327, 328, 340 and 341. While several policies address the protection of ridgelines and the avoidance of development on geologically hazardous areas, none specifically establish absolute limitations based on slope.

In particular, the Pittsburg General Plan on page 25 describes factors considered for the determination of open space areas. Open space for public, health and safety, although not separately designated on the General Plan Land Use Map, is stated to be comprised of five factors, including, but not limited to:

***Slopes of 30 percent or greater. No development shall be permitted on these lands unless site-specific geotechnical studies are prepared and adequate geotechnical hazard mitigation measures are incorporated into project design.***

As shown on the attached slope map, the site includes extensive areas containing slopes of 30 percent or greater. The SEIR evaluates the geotechnical hazards



Slopes Less Than 30 Percent



Slopes Greater Than 30 Percent

Figure

## PROJECT SITE SLOPES BELOW 30 PERCENT

SOURCE: Wagstaff and Associates

San Marco Project City of Pittsburgh

associated with the project site in Section IV.D and recommends extensive parameters for the preparation of associated adequate geotechnical hazard mitigation measures on pages 199 through 207.

9.8 The southwestern roadway (Street C) would contain slopes of up to 16 percent in some locations. While the Pittsburg General Plan does not specify maximum fire access road gradients, the proposed road design is generally consistent with acceptable standards. The southwestern roadway (Street C) design was subjected to preliminary review by the Riverview Fire Protection District during the preparation of the DSEIR and was found to be adequate. The adequacy of the proposed roadway with respect to future development south of the project would be determined at the time of review of those projects; no roadway layout for those additional lands has been designed at this time. In addition, this Street C roadway would not become a "major" roadway, since the Willow Pass Road extension on the eastern end of the project, a Pittsburg General Plan designated future arterial, would also pass through the vacant land south of the project parallel to the extension of Street C.

9.9 Comment acknowledged. In response to this comment and subsequent information provided by the fire district, the discussion of impacts and mitigations on page 269 relating to a new fire station have been expanded and clarified in the FSEIR.

9.10 Survey procedures to determine existing new local area resident distribution patterns are described below.

Survey crews were stationed at the Leland Road/Bailey Road intersection. Counts were conducted of traffic entering and leaving the newly developed Oak Hills single-family and apartment subdivision (at the two subdivision access roads along Leland Road). Due to ongoing single-family construction in the subdivision, construction worker traffic (by visual inspection) was excluded from the survey to the maximum extent possible in order to obtain residential distribution patterns only. Outbound vehicles were tracked through the Leland/Bailey intersection or to the shopping center across Leland Road from the subdivision. Groups of outbound vehicles proceeding north on Bailey Road were followed through the Bailey Road interchange with Highway 4 in order to determine distribution of traffic to the freeway. Inbound vehicles to the subdivision were determined based on turning movements into the subdivision from the Bailey/Leland intersection as well as from the shopping center across Leland Road.

9.11 The DSEIR statement that the reliability of EMME-2 projections were questionable based on new information regarding land use changes needs some clarification. The reason for questioning the applicability of the EMME-2 projections should be more accurately attributed to the development of new, more reliable data which has since been collected relating to the traffic generation characteristics of land uses adding

traffic to Highway 4. The FSEIR has been revised on page 163 to reflect this clarification.

- 9.12 Mr. Dan Pulon of the County Public Works staff was contacted during the preparation of the DSEIR regarding usability of EMME-2 future traffic modeling projections at locations on the regional roadway network to be addressed in this analysis. His response was that currently available projections were unreliable at best, given the changes in land use traffic assumptions that had been made between the time that the EMME-2 projections were made and this SEIR was prepared. In addition, conversations with the City of Concord Public Works Department also pointed out the unreliability of the old EMME-2 projections.

In light of these considerations and the availability of additional more recent data, a decision was made by the San Marco EIR traffic consultant to use data gathered in the April 1991 Draft Subsequent Environmental Impact Report for the Widening and Lowering of Highway 4 between Willow Pass Road in Concord and Bailey Road in Pittsburg as a guide for developing a uniform factor for adjusting the old EMME-2 projections. This study indicated a 44 percent decrease in future volumes on the analyzed section of Highway 4 over those predicted by the EMME-2 model. To provide a conservative estimate of future volume reductions on the regional roadway network as part of the San Marco SEIR, an 11 percent decrease (one-quarter of that suggested in the Caltrans study for Highway 4 near the site) was applied uniformly to all regional analysis locations. This projection was used as a best estimate of future conditions, given all information currently available. The exact nature of the changes in land use are not as important as a reasonable, conservative assumption relating to their generation of traffic. These traffic generation assumptions are considered by the EIR traffic consultant, and the City of Pittsburg to represent a better, more reliable forecast of future conditions on Highway 4 than those included in the EMME-2 model available at the time of the DSEIR traffic analysis.

- 9.13 See response to comment 9.12.

- 9.14 See response to comment 9.11.

- 9.15 See response to comment 9.12.

- 9.16 The extension of Willow Pass Road through the project to Bailey Road is a designated arterial in the Pittsburg General Plan. The traffic impacts of this connection are described in the EIR for the Southwest Boundary Reorganization Annexation 109, certified by the City of Pittsburg in August of 1987. Extension of this roadway to Bailey Road is not required by the project, and at this time, the scheduling of this subregional improvement remains highly speculative. However, the project roadway

design is consistent with, and provides for the future implementation of, a connection of Willow Pass Road and Bailey Road.

- 9.17 The East County Action planning process is ongoing. The East County traffic model, now in preparation, had not been completed and made available for public distribution at this writing. No methodology for analyzing regional transportation impacts or program for collecting regional impact fees had been adopted as of this writing.
- 9.18 Comment noted. The City of Pittsburg will consider this comment when reviewing the merits of the project.
- 9.19 Comment noted. The City of Pittsburg will consider this comment when reviewing the merits of the project.
- 9.20 The capacities of BART parking lots are based on independent studies completed by BART. The DSEIR assumes that seven percent of the project commuters would ride BART, based on BART's own EIR figures, which in turn are based on a comparison of the overall commute time to various work destinations via BART with typical driving times. The issue of station parking availability is also factored into these assumptions.
- The City of Pittsburg believes that it would be inappropriate to rely on the future effective operation of a BART shuttle service to and from the project as mitigation for project impacts. The feasibility of such a system has not been demonstrated in this case. In particular, the existence of a project Homeowners Association to administer the system is not assured at this time, and the financial viability of such a system is unproven.
- 9.21 Internal intersection levels of service are provided in SEIR Tables 24 and 25.
- 9.22 Comment acknowledged. In response to this comment regarding the meeting of Leland and Avila Road and associated road name signage, the FSEIR has been revised on pages 268 and 269. The city will initiate discussion with the county to coordinate any necessary name and/or signage changes.
- 9.23 Comment acknowledged. SEIR Alternative C, the Mitigated Residential Scheme described on DSEIR page 358, is an alternative which is similar to the alternative requested by this comment. It includes preservation of the riparian area along Shore Acres Creek plus other modifications which act to mitigate the impacts of the project and achieve consistency with the Pittsburg General Plan. In response to this comment, the characteristics of this alternative have been amended to achieve consistency with the Pittsburg General Plan. This process required the same revision of the alternative to achieve consistency with relevant general plan policies discussed in section V of the DSEIR, particularly those policies relating to new corridors,

sensitivity to major ridgelines, provision of day care facilities, and preserving and enhancing Pittsburg creeks.

With respect to view corridors of the southwest hills, the DSEIR stated on page 325 that the project would not disrupt those views to the hills and is therefore consistent with the general plan in this regard. The partial inconsistency identified on the bottom of DSEIR page 324 refers to the "preservation of the feel of a city surrounded by open space" and the project's impact on this "feel" from some vantage points below. It would be possible to achieve project consistency with this policy with a project alternative which is more successful in maintaining the feeling of surrounding open space.

With respect to sensitivity to major ridgelines, it is possible to achieve policy consistency through removal of project lots from the southwest corner of the site shown on DSEIR Figure 44 as being a "major ridgeline." This could also be achieved by the implementation of mitigation a(1) on DSEIR page 242 (i.e., requiring all project construction to occur below approximately the 750-foot contour.

With respect to the provision of day care facilities, a revision has been included on FSEIR page 332 regarding project consistency with adopted city policy. The general plan policy states that the need for child care facilities should be determined at the time a tentative map or development plan is approved. A recent City of Pittsburg survey of existing day care facility capacities in the community determined that four of the six day care providers in the City had no waiting list.

With respect to achieving consistency with the city policy to preserve and enhance creeks, it would be possible to achieve consistency through an alternative which incorporated the natural creeks or a reconstructed and enhanced creek system on the project site. This alternative would require modifications to the proposed grading of the site. This type of change has already been included for in the DSEIR Mitigated Residential Alternative C.

9.24 The City of Pittsburg has determined that the discussion of alternatives included in the DSEIR adequately presents a reasonable range of project alternatives and their comparative impacts. The DEIR also contains sufficient narrative description of each of the various alternatives without the provision of additional site plan graphics.

9.25 The proposed arterial connection of Willow Pass Road from the project to Bailey Road is a designated arterial in the Pittsburg General Plan. The impacts of this connection are described in the Southwest Boundary Reorganization Annexation 109 EIR, certified by the City of Pittsburg in August of 1987.







**CONTRA COSTA  
TRANSPORTATION AUTHORITY**

10

**COMMISSIONERS:**

Evelyn Munn  
Chair

Darrel "Jay" Tucker  
Vice Chair

Sharon J. Brown

Byron Campbell

Graig Crossley

Taylor Davis

Joel Keller

Cathie Kosel

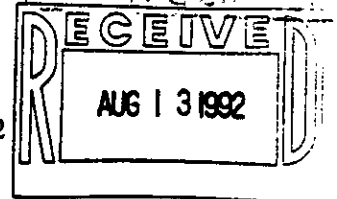
Beverly Lane

Sunne W. McPeak

Tom Toriakson

Robert K. McCleary  
Executive Director

August 7, 1992



**Randy Jerome**  
Senior Planner  
City of Pittsburg  
P. O. Box 1518  
Pittsburg, CA 94565

**SUBJECT:** Comments on the Subsequent Environmental Impact Report for the San Marco Subdivision

**REFERENCE:** City of Pittsburg Subdivision #7362; SCH# 91073029.

**Dear Mr. Jerome:**

We have reviewed the subject document and submit the following comments herewith:

Chapter 5, Page 321: This section discusses the relationship of the project to adopted plans and policies. The City of Pittsburg General Plan is evaluated, however, there is no mention of the General Plan Growth Management Element (GME). Based upon discussions with City of Pittsburg staff, the GME has been adopted. In the Final EIR, this section should include a review of the adopted GME, citing any applicable level of service standards for basic routes, and performance standards for fire, water, police, sanitary, flood control, and park facilities. 10.1

This section should also identify the Contra Costa Congestion Management Program (CMP) as an adopted countywide plan that includes level of service standards for freeways and principal arterials, and performance standards for transit service routing, frequency, and coordination. 10.2

Page 133, Measure C Operating Criteria: Measure C establishes intersection level of service standards for "basic routes" keyed to land use type. The adopted land use designations for the project area should be discussed along with the corresponding level of service standards. The paragraph states that the Measure C criteria indicate that all intersections could have a minimum acceptable operation of LOS D with a v/c ratio of .89. This implies that the 10.3

1340 Treat Blvd  
Suite 150

Walnut Creek  
CA 94596

Phone  
510 938-3970

FAX  
510 938-3993

entire project area has been given an "urban" land use designation. Areas which have been designated as semi-rural or suburban should also be identified, and the corresponding higher LOS standards should be applied.

It also seems appropriate that this section refer to the Contra Costa Congestion Management Program and cite the Level of Service standards that were adopted for Highway 4 route segments and Railroad Avenue, which are both designated CMP routes subject to level of service standards. If construction of the San Marco project results in violation of these level of service standards, then a Deficiency Plan would need to be prepared. 10.4

Page 147, Transportation, Impact Significance Criteria: The text reads as follows:

"Contra Costa Transportation Authority staff have, based on Measure C criteria, designated Highway 4 as a 'route of regional significance.' To date, no criteria have been set for the poorest acceptable operation for off-ramp intersections along Highway 4. For purposes of this SEIR study, LOS E operation (B/C - .94) has been assumed as the poorest acceptable operation at Highway 4 off-ramp intersections in the study area."

This paragraph should be reworded to indicate that the TRANSPLAN Regional Transportation Planning Committee, in cooperation with local jurisdictions, has designated Route 4, Leland Road, Avila Road, Evora Road, and Willow Pass Road north of Highway 4 as Routes of Regional Significance. The status of TRANSPLAN's work on an *Action Plan for Routes of Regional Significance* in East County should also be outlined. For each regional route, the *Action Plan* will establish quantifiable Traffic Service Objectives which may include thresholds for unacceptable delay, vehicle occupancy, transit patronage, or level of service standards. 10.5

In conjunction with the ongoing *Action Plan* effort, DKS Associates has prepared baseline travel forecasts for the years 2000 and 2010. The results of these forecasts, which include the San Marco development, are presently available and should be evaluated in accordance with CCTA's *Technical Procedures*. 10.6

Page 177, Mitigation Measure c.(2): This mitigation measure indicates that the San Marco project and all other benefitting developments should contribute toward the addition of one freeway lane in each direction (possibly an HOV lane) from the Willow Pass Road-Pittsburg interchange to west of the Willow

Randy Jerome  
August 7, 1992  
Page 3

Pass Road-Concord interchange. It would be helpful to discuss here the intent since the current Willow Pass Grade project will provide 6 lanes plus auxiliary lanes over the summit as well as sufficient pavement to restripe to 8 lanes once Route 4 is widened to the east. 10.7

Page 179. Mitigation Measure c.(5): This measure states that "... a regional traffic impact mitigation fee structure should be developed by the Contra Costa Transportation Authority." It is further stated that "Implementation of this fee by the CCTA and fair-share payment by the project would reduce project impacts on regional roadways to less than significant levels." It is not clear from this statement which projects would be candidates for funding from a fee program, the cost of the projects, and the resulting fee. It would also be helpful to clarify that any off-site mitigation program developed by CCTA would be done cooperatively with the City of Pittsburg, adjacent jurisdictions, and the TRANSPLAN committee. 10.8

Thank you for your consideration of these comments when finalizing the EIR. Should you have any questions, please feel free to contact our offices at 938-3970.

Sincerely,

ROBERT K. McCLEARY  
Executive Director

by 

MARTIN R. ENGELMANN, P. E.  
Deputy Director, Planning

cc: Evelyn Munn, CCTA Chair  
Sunne W. McPeak, PGA Chair  
Taylor Davis, CCTA  
Barbara Guise, TRANSPLAN Chair  
Lillian Pride, City of Pittsburg  
Patrick Roche, TRANSPLAN - TAC  
Barbara Neustadter, TRANSPAC - TAC  
Tom Clausen, Concord  
File: 2.15.2, 15.4

eir:pic

**10.0 Response to the Contra Costa Transportation Authority Letter**

- 10.1 The Pittsburg General Plan Growth Management Element was not yet adopted at the time that the Development Agreement for the project was executed. Because the new *Growth Management Element* is not retroactive, it is not necessary to consider within the FSEIR.
- 10.2 Comment acknowledged. The FSEIR has been revised on page 345 to include a discussion of the project's relationship to the Contra Costa Congestion Management Program.
- 10.3 The adopted land use type for areas encompassing all major existing and future analyzed intersections in the San Marco SEIR is "Urban." The corresponding level of service standard for signalized intersections within this land use type is level of service (LOS) D with a V/C ratio of .89. Within the San Marco development (other than the area near the future Leland/Willow Pass [Pittsburg] interchange) the adopted land use type is "Rural." The corresponding level of service standard for signalized intersections in this area is LOS C with a maximum V/C ratio of .74. The clarifications do not change any findings of the SEIR analysis.
- 10.4 At the time of the preparation of the Draft SEIR, the only CMP Route in the project vicinity identified by the Contra Costa Congestion Management Program was Highway 4. The SEIR describes related assumptions for LOS standards on page 147. There is no discussion of Railroad Avenue LOS because it was determined that the project would not have a significant impact on Railroad Avenue traffic conditions due to the route's distance from the site and its location within the local circulation system.
- 10.5 In response to this comment, the FEIR has been amended on page 147 to acknowledge that TRANSPLAN has recommended the addition of Leland Road, Avila Road, Evora Road, and Willow Pass Road north of Highway 4 as "Routes of Regional Significance."
- The status of TRANSPLAN's work on an *Action Plan for Routes of Regional Significance* is that it is ongoing and the plan has not been officially adopted at this writing.
- 10.6 The DKS baseline travel forecasts for the years 2000 and 2010 were not available for use during the preparation of the DSEIR traffic analysis. According to Jeff Buxbaum of DKS Associates, they continue to be unavailable for use as of this writing.
- 10.7 Comment acknowledged. In response to this comment, Mitigation Measure c.(2) on FSEIR page 178 has been revised to acknowledge that a third lane, plus auxiliary lanes for each direction of Highway 4 in the project vicinity, are planned and funded.

- 10.8 A determination of which projects would be susceptible to a CCTA fee, and what that fee would be, cannot be completed until the CCTA establishes a fee program. The development of an Action Plan by the CCTA is currently ongoing; no plan is yet available for general distribution or for incorporation into this document. Without this fee, there is no existing mechanism for the inter-jurisdictional mitigation of regional traffic impacts. The project will be subject to a regional traffic impact mitigation fee if one is adopted by the CCTA before issuance of project building permits. The traffic impacts associated with any project building permits issued prior to establishment and enactment of the fee would be considered unmitigable adverse regional traffic impacts.

The recommended language relating to a cooperative effort towards establishing such a fee has been added to page 179 of the FSEIR.



## DEPARTMENT OF TRANSPORTATION

BOX 7310  
SAN FRANCISCO, CA 94120  
(415) 923-4444

13  
PLANNING DIVISION

August 11, 1992

CC-004-R16.85  
SCH# 91073029  
CC004300

Mr. Randy Jerome, Senior Planner  
City of Pittsburg  
Community Development Department  
65 Civic Avenue  
Pittsburg, Calif. 94565

RE: Subsequent Environmental Impact Report (SEIR) for the **SAN MARCO SUBDIVISION**. A proposed Rezoning, Planned Unit Development, and Tentative Subdivision Map to allow development of 2,938 residential units, two detention basins/community parks, and other open space. The 639 acre project site is located on the south side of State Route (SR) 4 at Willow Pass Road in the City of Pittsburg.

Dear Mr. Jerome:

This is an addendum to our letter to you of July 17, 1992. We have further reviewed the document and forward the following comments:

In reference to the transportation segment of the summary which refers to fair share contributions (Pages 20, 21, 22 and 23), this summary seems to indicate that planned improvements to SR 4 are considered mitigation for the impacts of this project. Caltrans projects cannot be used to mitigate impacts of the proposed traffic. Please be aware that many of these improvements are in progress (in construction or design) and are funded mostly by the Contra Costa Transportation Authority.

11.1

We strongly recommend that a mechanism or some kind of agreement be included to assign impact mitigation funding responsibility (i.e., highway/ramp improvements). The implementation of responsibility for specific funding mechanisms should be included as a condition of approval to make sure the developer will pay his/her fair share to the appropriate authority as his/her projects are completed.

11.2

Jerome/CC004300  
August 11, 1992  
Page 2

We appreciate the opportunity to work with you on this project and wish to continue close correspondence on its development. Should you have any questions regarding these comments, please feel free to contact Joe Aguilar of my staff at (415) 904-9641.

Sincerely,

PRESTON W. KELLEY  
District Director

By

  
FOR: GARY F. ADAMS  
District CEQA Coordinator

cc: Mike Chiriatti, State Clearinghouse  
Susan Pultz, MTC  
Sally Germain, ABAG



**11.0 Response to Department of Transportation Letter (#2)**

- 11.1 The DSEIR has been revised on page 178 to clarify the analysis of project impacts on Highway 4. Assuming that planned Caltrans improvements to Highway 4 are completed prior to occupancy, the project would not have significant impacts on the highway and no mitigation would be required.
- 11.2 The City of Pittsburg is supportive of ongoing efforts to establish mechanisms for mitigating regional and inter-jurisdictional traffic impacts. The City of Pittsburg will consider participation in such programs at such time as they are set forth for adoption by the CCTA or other appropriate regional authorities.

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
X. Responses to Comments on the Draft SEIR  
Page 438

r

## **XI. APPENDICES**



**APPENDIX A:**  
**NOP/INITIAL STUDY**

San Marco Development  
City of Pittsburgh  
October 6, 1992

Final SEIR  
Appendix A

# Notice of Preparation

Appendix J



To: State Clearinghouse  
(Agency)  
1400 Tenth Street  
(Address)  
Sacramento, CA 95814

## Subject: Notice of Preparation of a Draft Environmental Impact Report

|                                             |                                                      |
|---------------------------------------------|------------------------------------------------------|
| <b>Lead Agency:</b>                         | <b>Consulting Firm (If applicable):</b>              |
| Agency Name <u>City of Pittsburg</u>        | Firm Name <u>Lamphier &amp; Associates</u>           |
| Street Address <u>65 Civic Avenue</u>       | Street Address <u>77 Jack London Square, Suite K</u> |
| City/State/Zip <u>Pittsburg, CA 94565</u>   | City/State/Zip <u>Oakland, CA 94607</u>              |
| Contact <u>Randy Jerome, Senior Planner</u> | Contact <u>Joan Lamphier, Principal</u>              |

The City of Pittsburg will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☒ is ☐ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but *not later than 30 days* after receipt of this notice.

Please send your response to Mr. Randy Jerome, Senior Planner at the address shown above. We will need the name for a contact person in your agency.

Project Title: San Marco Subdivision No. 7362

|                                            |                     |
|--------------------------------------------|---------------------|
| Project Location: <u>City of Pittsburg</u> | <u>Contra Costa</u> |
| City (nearest)                             | County              |

### Project Description: (brief)

A proposed rezoning, Planned Unit Development, and Tentative Subdivision Map to allow development of 2,938 residential units, two detention basins/community parks, and other open space on a 639-acre site located on the south side of Highway 4 at Willow Pass Road in the City of Pittsburg (see attached Project Description).

|                           |                                 |
|---------------------------|---------------------------------|
| Date <u>June 19, 1991</u> | Signature _____                 |
|                           | <u>Randy Jerome,</u>            |
|                           | Title <u>Senior Planner</u>     |
|                           | Telephone <u>(415) 439-4920</u> |

**SAN MARCO SUBDIVISION NO. 7362**  
**PROJECT DESCRIPTION**

The 639-acre project site is located on the south side of Highway 4 at Willow Pass Road in the City of Pittsburg (see attached site location map). The site is made up of hilly grassland, the majority of which is used for cattle-grazing. Other existing land uses on the site include an active gas field and well and a residential/farm complex. The City of Pittsburg General Plan designates the site for the following land uses: Rural Residential (0.05 - 0.2 units per gross acre), Residential Estate (0.21 - 3.0 units per gross acre), Residential Low Density (3.1 - 5.0 units per gross acre), Residential Medium Density (5.1 - 14.0 units per gross acre), Agricultural Preserve, and Park. The site is currently zoned "Study," a temporary zoning classification it received upon annexation to the City of Pittsburg.

The project is a proposed rezoning (to a Planned Development zoning classification), Planned Unit Development, and Tentative Subdivision Map to allow development of 2,938 residential units, two detention basins/community parks, and other open space on the site (see attached development plan). The proposed land use breakdown is shown in the table below.

| <b>PROPOSED LAND USES</b><br><b>SAN MARCO SUBDIVISION NO. 7362</b> |                    |                  |                  |
|--------------------------------------------------------------------|--------------------|------------------|------------------|
| <b>Land Use</b>                                                    | <b>Gross Acres</b> | <b>No. Units</b> | <b>% of Land</b> |
| <b>Residential: Single-Family</b>                                  | 310                | 1,321            | 48.6             |
| <b>Ranchettes</b>                                                  | 105                | 42               | 16.4             |
| <b>Town House Apts.</b>                                            | 105                | 895              | 16.4             |
| <b>Apartments</b>                                                  | 34                 | 680              | 5.3              |
| <b>Detention Basin/Community Park</b>                              | 42                 | -                | 6.5              |
| <b>Trail</b>                                                       | 2                  | -                | 0.3              |
| <b>Major Road</b>                                                  | 29                 | -                | 4.5              |
| <b>Freeway Interchange</b>                                         | 12                 | -                | 2.0              |
| <b>TOTAL</b>                                                       | <b>639</b>         | <b>2,938</b>     | <b>100.0</b>     |

Lot sizes in the single-family residential portion of the project would range from 4,050 square feet to 41,900 square feet, with an overall average lot size of approximately 7,740 square feet. Lot sizes in the ranchette portion of the project would range from 10,000 square feet to 23.3 acres, with an average lot size of 107,300 square feet. Densities of the two townhome areas (Villages "C" and "M") would be 9.1 units per acre and 7.6 units per acre, respectively. The density of the apartment portion of the project (Village "B") would be 20 units per acre.



**CITY OF PITTSBURG  
COMMUNITY DEVELOPMENT DEPARTMENT**

**INITIAL STUDY CHECKLIST**

**I. Background**

1. Name of Proponent Seecon Financial and Construction, Inc.
2. Address and Phone Number of Proponent 4021 Port Chicago Highway,  
Concord, CA 94524-4113 (415) 439-1086
3. Date of Checklist Submitted June 19, 1991
4. Agency Requiring Checklist City of Pittsburg
5. Name of Proposal, if applicable San Marco Subdivision, No. 7362
6. File Number: Z-90-4

**II. Environmental Impacts**

(Explanations of all "yes" and "maybe" answers are required on attached sheets.)

|                                                                                                                                                                                                         | <u>Yes</u>    | <u>Maybe</u>  | <u>No</u>     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| 1. Earth. Will the proposal result in:                                                                                                                                                                  |               |               |               |
| a. Unstable earth conditions or in changes in geologic substructures?                                                                                                                                   | <u>X</u>      | <u>      </u> | <u>      </u> |
| b. Disruptions, displacements, compaction or overcovering of the soil?                                                                                                                                  | <u>X</u>      | <u>      </u> | <u>      </u> |
| c. Change in topography or ground surface relief features?                                                                                                                                              | <u>X</u>      | <u>      </u> | <u>      </u> |
| d. The destruction, covering or modification of any unique geologic or physical features?                                                                                                               | <u>      </u> | <u>X</u>      | <u>      </u> |
| e. Any increase in wind or water erosion of soils, either on or off the site?                                                                                                                           | <u>      </u> | <u>X</u>      | <u>      </u> |
| f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake? | <u>X</u>      | <u>      </u> | <u>      </u> |
| g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?                                                                   | <u>X</u>      | <u>      </u> | <u>      </u> |

|                                                                                                                                                           | <u>Yes</u> | <u>Maybe</u> | <u>No</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|-----------|
| 2. Air. Will the proposal result in:                                                                                                                      |            |              |           |
| a. Substantial air emissions or deterioration of ambient air quality?                                                                                     | —          | X            | —         |
| b. The creation of objectionable odors?                                                                                                                   | —          | —            | X         |
| c. Alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally?                                          | —          | —            | X         |
| 3. Water. Will the proposal result in:                                                                                                                    |            |              |           |
| a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?                                                  | —          | —            | X         |
| b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?                                                              | X          | —            | —         |
| c. Alterations to the course or flow of flood waters?                                                                                                     | —          | —            | X         |
| d. Change in the amount of surface water in any water body?                                                                                               | —          | X            | —         |
| e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? | —          | X            | —         |
| f. Alteration of the direction or rate of flow of ground waters?                                                                                          | —          | X            | —         |
| g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations? | —          | X            | —         |
| h. Substantial reduction in the amount of water otherwise available for public water supplies?                                                            | —          | —            | X         |
| i. Exposure of people or property to water related hazards such as flooding or tidal waves?                                                               | —          | —            | X         |
| 4. Plant Life. Will the proposal result in:                                                                                                               |            |              |           |
| a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?                    | X          | —            | —         |

|                                                                                                                                                                                            | <u>Yes</u> | <u>Maybe</u> | <u>No</u> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|-----------|
| b. Reduction of the numbers of any unique, rare or endangered species of plants?                                                                                                           | —          | <u>X</u>     | —         |
| c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?                                                                    | <u>X</u>   | —            | —         |
| d. Reduction in acreage of any agricultural crop?                                                                                                                                          | —          | —            | <u>X</u>  |
| 5. Animal Life. Will the proposal result in:                                                                                                                                               |            |              |           |
| a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?                    | <u>X</u>   | —            | —         |
| b. Reduction of the numbers of any unique, rare or endangered species of animals?                                                                                                          | —          | <u>X</u>     | —         |
| c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?                                                                    | <u>X</u>   | —            | —         |
| d. Deterioration to existing fish or wildlife habitat?                                                                                                                                     | —          | <u>X</u>     | —         |
| 6. Noise. Will the proposal result in:                                                                                                                                                     |            |              |           |
| a. Increases in existing noise levels?                                                                                                                                                     | <u>X</u>   | —            | —         |
| b. Exposure of people to severe noise levels?                                                                                                                                              | <u>X</u>   | —            | —         |
| 7. Light and Glare. Will the proposal produce new light or glare?                                                                                                                          | <u>X</u>   | —            | —         |
| 8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?                                                                           | <u>X</u>   | —            | —         |
| 9. Natural Resources. Will the proposal result in:                                                                                                                                         |            |              |           |
| a. Increase in the rate of use of any natural resources?                                                                                                                                   | —          | —            | <u>X</u>  |
| 10. Risk of Upset. Will the proposal involve:                                                                                                                                              |            |              |           |
| a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions? | —          | <u>X</u>     | —         |

|                                                                                                                                                         | <u>Yes</u> | <u>Maybe</u> | <u>No</u> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|-----------|
| b. Possible interference with an emergency response plan or an emergency evacuation plan?                                                               | —          | —            | <u>X</u>  |
| 11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?                         | <u>X</u>   | —            | —         |
| 12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?                                                      | —          | —            | <u>X</u>  |
| 13. Transportation/Circulation. Will the proposal result in:                                                                                            |            |              |           |
| a. Generation of substantial additional vehicular movement?                                                                                             | <u>X</u>   | —            | —         |
| b. Effects on existing parking facilities, or demand for new parking?                                                                                   | —          | —            | <u>X</u>  |
| c. Substantial impact upon existing transportation systems?                                                                                             | <u>X</u>   | —            | —         |
| d. Alterations to present patterns of circulation or movement of people and/or goods?                                                                   | <u>X</u>   | —            | —         |
| e. Alterations to waterborne, rail or air traffic?                                                                                                      | —          | —            | <u>X</u>  |
| f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?                                                                            | —          | <u>X</u>     | —         |
| 14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: |            |              |           |
| a. Fire protection?                                                                                                                                     | <u>X</u>   | —            | —         |
| b. Police protection?                                                                                                                                   | <u>X</u>   | —            | —         |
| c. Schools?                                                                                                                                             | <u>X</u>   | —            | —         |
| d. Parks or other recreational facilities?                                                                                                              | <u>X</u>   | —            | —         |
| e. Maintenance of public facilities, including roads?                                                                                                   | <u>X</u>   | —            | —         |
| f. Other governmental services?                                                                                                                         | <u>X</u>   | —            | —         |
| 15. Energy. Will the proposal result in:                                                                                                                |            |              |           |
| a. Use of substantial amounts of fuel or energy?                                                                                                        | <u>X</u>   | —            | —         |

|                                                                                                                                                                                                                                                                                                                                                                             | <u>Yes</u>    | <u>Maybe</u>  | <u>No</u>     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| b. Substantial increase in demand upon existing sources or energy, or require the development of new sources of energy?                                                                                                                                                                                                                                                     | <u>X</u>      | <u>      </u> | <u>      </u> |
| 16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:                                                                                                                                                                                                                                                   | <u>X</u>      | <u>      </u> | <u>      </u> |
| 17. Human Health. Will the proposal result in:                                                                                                                                                                                                                                                                                                                              |               |               |               |
| a. Creation of any health hazard or potential health hazard (excluding mental health)?                                                                                                                                                                                                                                                                                      | <u>      </u> | <u>      </u> | <u>X</u>      |
| b. Exposure of people to potential health hazards?                                                                                                                                                                                                                                                                                                                          | <u>      </u> | <u>X</u>      | <u>      </u> |
| 18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?                                                                                                                                                             | <u>X</u>      | <u>      </u> | <u>      </u> |
| 19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?                                                                                                                                                                                                                                                  | <u>      </u> | <u>      </u> | <u>X</u>      |
| 20. Cultural Resources.                                                                                                                                                                                                                                                                                                                                                     |               |               |               |
| a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?                                                                                                                                                                                                                                                       | <u>      </u> | <u>X</u>      | <u>      </u> |
| b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?                                                                                                                                                                                                                                           | <u>      </u> | <u>X</u>      | <u>      </u> |
| c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?                                                                                                                                                                                                                                                        | <u>      </u> | <u>X</u>      | <u>      </u> |
| d. Will the proposal restrict existing religious or sacred uses within the potential impact area?                                                                                                                                                                                                                                                                           | <u>      </u> | <u>      </u> | <u>X</u>      |
| 21. Mandatory Findings of Significance.                                                                                                                                                                                                                                                                                                                                     |               |               |               |
| a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate |               |               |               |



**ATTACHMENT A  
INITIAL STUDY CHECKLIST  
SAN MARCO SUBDIVISION NO. 7362**

**Discussion of Environmental Evaluation (explanation of all "yes" and "maybe" answers)**

**1. Earth.**

- a. The project would require substantial grading of the existing hilly topography of the site. Background studies have identified landslides on the site. Other potential unstable earth conditions on the site include soil creep and settlement or expansion of deep fills.
- b. Grading and fill for the project would cause soil disruption, displacement and compaction.
- c. Grading and fill for the project would produce substantial changes in the site topography and ground surface relief features. See also items (a) and (b) above.
- d. Grading and fill for the project would substantially change the topography of the site, possibly resulting in destruction or modification of unique geologic features. See also items (a) through (c) above.
- e. A preliminary geotechnical exploration found that a heavy stand of tall grass currently covers portions of the site, thereby minimizing erosion. Grading operations would expose erodible soils in several areas.
- f. Grading for the project would consist of cutting ridge tops and filling valleys. In the major valleys, this would involve placing fill over natural creeks.
- g. As noted in item (a) above, the site contains landslides and signs of other unstable geologic conditions. Four active earthquake faults are located in the vicinity of the site (i.e. within one to eight miles). The project would expose residents to these possible hazards.

**2. Air.**

- a. Traffic from the proposed residential development may cause air quality deterioration. Construction activities on the site would include extensive grading and clearing activity. This activity, in conjunction with high winds trending in the north and easterly directions would result in increases in dust and particulates.

**3. Water.**

- b. Grading and subsequent urban development on the site would alter existing drainage patterns and the rate and amount of surface runoff and absorption.
- d. Placement of fill over the site's natural creeks would alter surface water levels.
- e. The proposed residential development would alter existing drainage patterns and introduce urban runoff on the site. This may affect surface water quality.
- f. Grading and other site work required for the project may alter the direction or rate of flow of groundwater.
- g. Grading and other site work required for the project may alter the quantity of groundwater.

**4. Plant Life.**

- a. The proposed residential development would replace the existing grassland which covers the majority of the site and allows for cattle grazing. Portions of the site may contain wetland/riparian plant communities that would be affected by the project.
- b. Sensitive plant species have been reported in the general vicinity, and may occur on the project site.
- c. Urban development would introduce domestic plant species onto the site.

**5. Animal Life.**

- a. Urban development on the site would reduce the existing available habitat for animal species.
- b. Sensitive wildlife species have been reported in the general vicinity, and may occur on the project site.
- c. Residential development would introduce domestic animals onto the site.
- d. Alteration of natural creeks on the site may cause deterioration of fish or wildlife habitat.



**6. Noise.**

- a. Project construction would cause a temporary increase in existing noise levels. Subsequent residential use and the resulting traffic would produce higher noise levels than currently exist on the site.
- b. Traffic from Highway 4 could expose residents of the northern portion of the project to high noise levels.

**7. Light and Glare.**

The proposed residential development would be a new source of light and glare.

**8. Land Use.**

The project would substantially alter the existing land use of the site (cattle-grazing) and would require rezoning.

**10. Risk of Upset.**

- a. The site contains an active gas field and well, which may affect the proposed residential development.

There is an explosive/blast easement from the Concord Weapons Station adjacent to the southerly and westerly property lines of the project site.

**11. Population.**

The project would add a total of 2,938 units to the City's housing supply, resulting in changes in population location, distribution, density and growth rate.

**13. Transportation/Circulation.**

- a. Residential development on the site would generate substantial additional traffic.
- c. Traffic generated by the project would increase congestion on existing roads in the vicinity of the site.

- d. The project would create several major new circulation routes, including an extension of Willow Pass Road south of Highway 4.
- f. Traffic hazards may result from the proposed circulation pattern and the overall increase in vehicle, bicycle and pedestrian traffic.

**14. Public Services.**

- a - f. The project would create increased demands for fire and police protection, schools, parks and other recreational facilities, road maintenance, and other government services.

**15. Energy.**

- a. Project construction and subsequent residential use would consume substantial amounts of fuel and energy.
- b. The proposed residential development would create a substantial new demand for existing energy sources.

**16. Utilities.**

The project would create substantial new demand for utilities including electric power and natural gas, communications systems, water and sewer systems, storm water drainage, and solid waste disposal services.

**17. Human Health.**

- b. A PG&E high voltage transmission line runs in a southeasterly direction from the site's northwest corner. This transmission line may be a source of electromagnetic fields, which are a potential human health hazard.

**18. Aesthetics**

The proposed residential development would substantially alter views from within the project site and from the surrounding area.

**20. Cultural Resources.**

- a - c. Prehistoric and historic archaeological resources have been identified in the general vicinity of the project site. The potential impacts of the project on cultural resources require investigation.



**APPENDIX B:**  
**HOUSING AFFORDABILITY WORKSHEET**



Appendix B  
**HOUSING AFFORDABILITY WORKSHEET**

---

|                                                                      |          |                    |         |         |
|----------------------------------------------------------------------|----------|--------------------|---------|---------|
| Anticipated Project Price Range                                      | \$85,000 | 150,000            | 180,000 | 240,000 |
| Percent Down                                                         | 12       | 12                 | 12      | 15      |
| Interest Rate                                                        | 10       | 10                 | 10      | 10      |
| Mortgage Term (yrs.)                                                 | 30       | 30                 | 30      | 30      |
| Qualifying Percent <sup>1</sup>                                      | 34       | 34                 | 34      | 34      |
| Property Tax Rate (est.)                                             | 1.25     | 1.25               | 1.25    | 1.25    |
| Home Price                                                           | 85,000   | 150,000            | 180,000 | 240,000 |
| Down Payment                                                         | 10,200   | 18,000             | 21,600  | 36,000  |
| Mortgage                                                             | 74,800   | 132,000            | 158,400 | 204,000 |
| Lot Value                                                            | --       | --                 | 45,000  | 55,000  |
| Annual Mtg. Pmts.                                                    | 7,877    | 13,901             | 16,681  | 21,483  |
| Property Tax (est.)                                                  | 1,060    | 1,875              | 2,238   | 2,984   |
| Insurance (est.)                                                     | 223      | 394                | 473     | 630     |
| Special Assessments (est.)                                           | 42       | 74                 | 89      | 118     |
| Annual Total                                                         | 9,202    | 16,244             | 19,481  | 25,215  |
| Required Income (annual)                                             | 28,140   | 49,675             | 59,575  | 76,725  |
| Mtg. Pmts/Income                                                     | 28       | 28                 | 28      | 28      |
| House Price/Income                                                   | 3        | 3                  | 3       | 3       |
| Median regional income:                                              |          | \$54,000           |         |         |
| Very low income range (up to 50 percent):                            |          | up to \$27,000     |         |         |
| Low income range (51 to 80 percent):                                 |          | \$27,540-to-43,200 |         |         |
| Moderate income range (81 to 120 percent of median regional income): |          | \$43,740-to-64,800 |         |         |

---

SOURCE: Wagstaff and Associates, February 1992

<sup>1</sup> 33 to 36 percent are common qualifying ratios





**APPENDIX C:**  
**SUPPLEMENTAL TRANSPORTATION INFORMATION**



---

**DESCRIPTION OF LEVEL OF SERVICE  
FOR MINOR MOVEMENTS AT UNSIGNALIZED INTERSECTIONS**

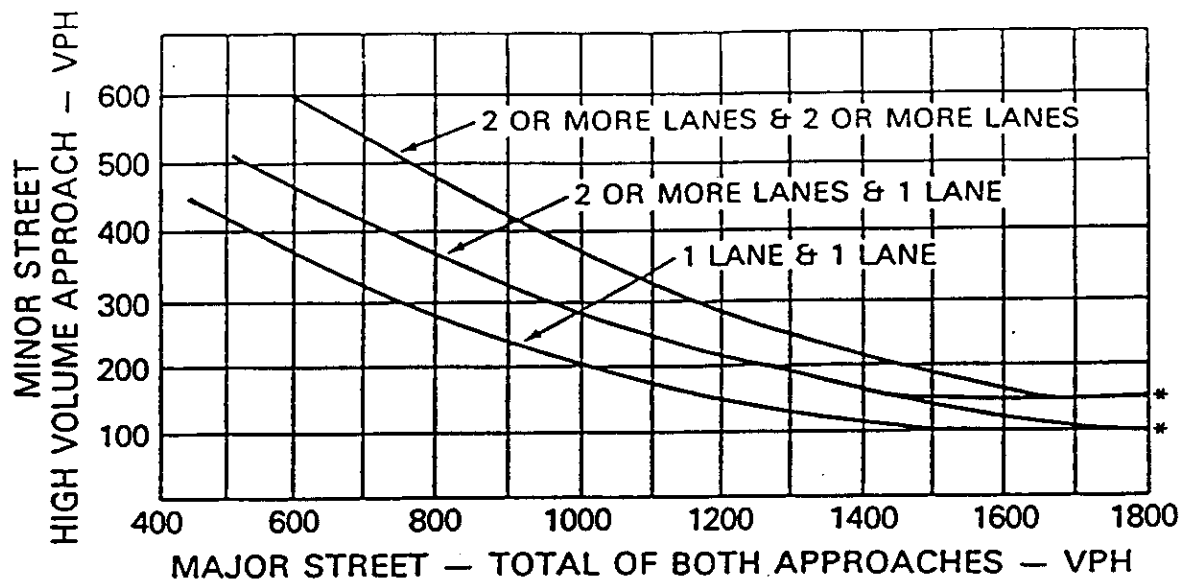
---

| Level of Service | Description                                                                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                | Little or no delay expected for tested minor movement. The movement's reserve capacity exceeds 400 passenger cars per hour.                                                                          |
| B                | Short traffic delays expected for tested minor movement. Its reserve capacity is in the range of 300 to 399 passenger cars per hour.                                                                 |
| C                | Average traffic delays expected for tested minor movement. Its reserve capacity is in the range of 200 to 299 passenger cars per hour.                                                               |
| D                | Long delays expected for tested minor movement. Its reserve capacity is in the range of 100 to 199 passenger cars per hour.                                                                          |
| E                | Very long traffic delays for tested minor movement. Its reserve capacity is less than 100 passenger cars per hour.                                                                                   |
| F                | Demand volume exceeds capacity of the tested minor movement. Extreme delays with queuing may cause severe congestion affecting other traffic movements. Intersection improvements usually warranted. |

---

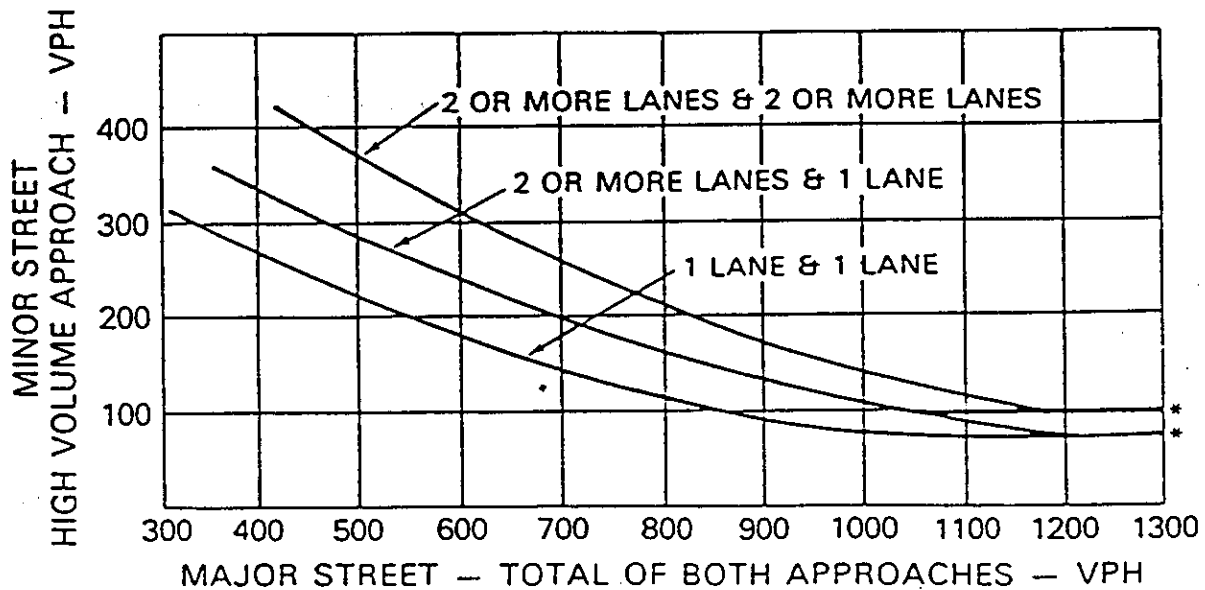
Source: 1985 Highway Capacity Manual

---



\*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

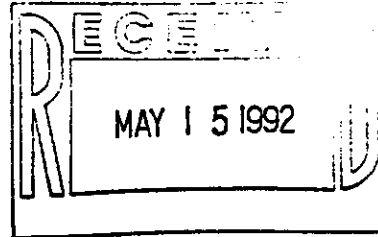
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



\*NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

**APPENDIX D:**  
**SUPPLEMENTAL VEGETATION AND WILDLIFE INFORMATION**





LSA Associates, Inc.

Environmental Assessment  
Transportation Engineering  
Resource Management  
Community Planning  
Environmental Restoration

*Principals*

Rob Balen  
Les Card  
Jim Culter  
Robert Hribes  
George Kurilko  
Carollyn Lobell  
Bill Mayer  
Ray Moe  
Beth Padon  
Rob Schonhoitz  
Malcolm J. Sproul

*Associates*

Lyn Calendine  
Connie Calica  
Gary Dow  
Kevin Fincher  
Steve Granholm  
Richard Grasseti  
Roger Harris  
Art Homrighausen  
Gina Jurick  
Larry Kennings  
Karen Kirland  
Benson Lee  
Rob McCann  
Sabrina Nicholls  
Harrigene Perry  
Anthony Petros  
Amy Rudeil  
Dean Williams  
Jill Wilson

April 17, 1992

Mr. Al Stanley  
North State Development Company  
P. O. Box 4113  
Concord, CA 94524-4113

Subject: San Marco Streams Subject to Corps Jurisdiction

Dear Al:

Four drainages exist on the San Marco property, three of which have discernable scour and adjacent wetland. Stream A is along the west side of the site and is shown as an intermittent stream on the USGS topo map. Stream B is in the middle of the site. This stream does not appear as a blue line stream on the USGS topo map. Stream C is on the east side of the site and is shown as a perennial stream on the USGS topo map. A fourth drainage occurs along the east border of the site and is shown as an intermittent stream on the USGS topo map. We did not find discernable scour in this fourth drainage.

The extent of Corps jurisdictional area for the three streams with scour is:

| Stream | Area (sq. ft.)          |
|--------|-------------------------|
| A      | 21,193                  |
| B      | 22,910                  |
| C      | 109,435                 |
| Total  | 153,538 (ca. 3.5 acres) |

Adjacent wetland is of three types: 1) within the basins of former stock ponds (all of the stock ponds have been breached and no longer pond water more than a few inches); 2) where streams A and B flow onto level terrain near the north border of the site and the area of saturated soil extends across an area 30 to 40 feet wide; and 3) on the main tributary to stream C, where a meadow

04/16/92(B:\NSD101\STANLEY.LTR)

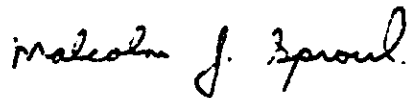
occurs at the location where runoff concentrates before entering the stream channel.

Riparian vegetation is well-developed along Stream C and along the lower reaches of Streams A and B. The dominant tree species are red willow and cottonwood, and the dominant shrub species are sandbar willow, California rose, and poison-oak. The riparian zone along the upper reach of Stream C, has been eliminated.

Please call me if you have any questions about this summary of our results.

Sincerely,

LSA ASSOCIATES, INC.

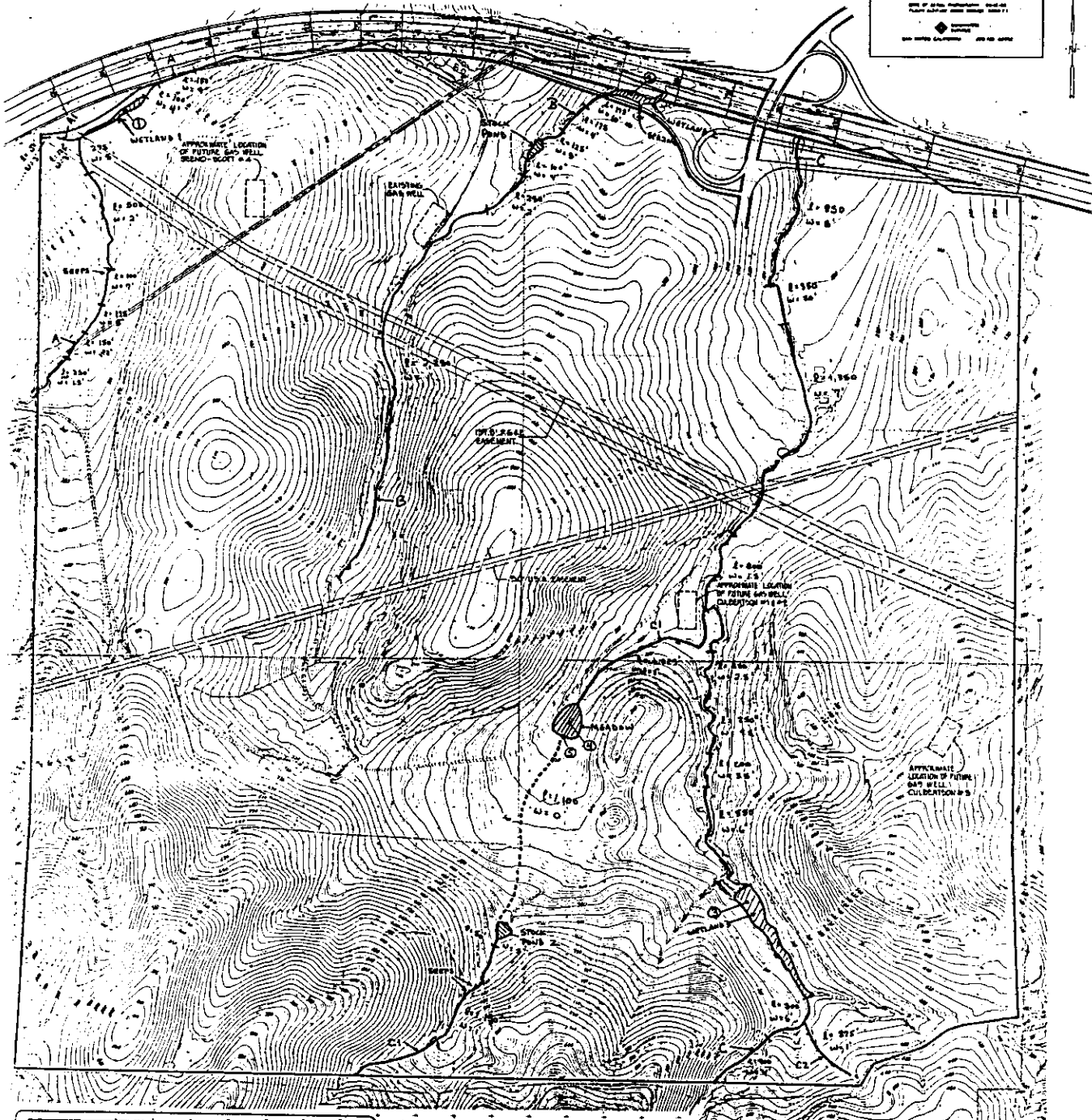
A handwritten signature in cursive script that reads "Malcolm J. Sproul".

Malcolm J. Sproul  
Principal

MJS/yf



PREPARED BY: **STEDMAN & ASSOCIATES, INC.**  
 SCALE: 1" = 500' FEET  
 DATE: **10/1/88**  
 SHEET: **1** OF **1**  
 PROJECT: **LSA WETLAND DELINEATION**  
 LOCATION: **LSA WETLAND DELINEATION**  
 DRAWN BY: **STEDMAN & ASSOCIATES, INC.**  
 CHECKED BY: **STEDMAN & ASSOCIATES, INC.**



**Stedman & Associates, Inc.**  
 1416 N. California Blvd.  
 Suite 240, Walnut Creek  
 California 94596  
 915 933-9160

**BASE MAP**  
 SCALE: 1" = 500'

9000 57-00

# LSA WETLAND DELINEATION



Table 1. Sensitive plants potentially in the Pittsburg area (non-estuarine)

| PLANT TAXON                                           | COMMON NAME                  | LIST | R-E-D   | FWS | CDFG | HABITAT                                        | Likely In Study Area ?                          |
|-------------------------------------------------------|------------------------------|------|---------|-----|------|------------------------------------------------|-------------------------------------------------|
| <b>SPECIES OF PRIMARY CONCERN:</b>                    |                              |      |         |     |      |                                                |                                                 |
| <i>Eriogonum truncatum</i>                            | Mt. Diablo buckwheat         | 1a   | PE 1940 | C2  | -    | dry slopes, edge of chaparral                  | NO; no habitat                                  |
| <i>Trifolium amoenum</i>                              | showy Indian clover          | 1a   | PE 1969 | C2* | -    | low rich fields, swales; serpentine            | NO; too disturbed, marginal historic habitat ?  |
| <i>Amsinckia furcata</i>                              | forked fiddleneck            | 1b   | 1-2-3   | C2  | -    | valley grassland                               | NO; too disturbed, potential historic habitat ? |
| <i>Amsinckia grandiflora</i>                          | large-flowered fiddleneck    | 1b   | 3-3-3   | C1  | E    | open grassy slopes/swales; valley grassland    | NO; too disturbed, no suitable habitat          |
| <i>Cordylanthus mollis</i> ssp. <i>hispidus</i>       | hispid bird's-beak           | 1b   | 2-2-3   | C2  | -    | saline flats                                   | NO, no habitat                                  |
| <i>Cordylanthus mollis</i> ssp. <i>mollis</i>         | soft bird's beak             | 1b   | 3-2-3   | C1  | R    | salt and brackish marshes, transition zone     | NO; no habitat                                  |
| <i>Cordylanthus palmatus</i>                          | Ferris' bird's beak          | 1b   | 3-3-3   | C1  | E    | low saline/alkaline flats, valley grassland    | NO, no habitat                                  |
| <i>Delphinium recurvatum</i>                          | recurved larkspur            | 1b   | 1-2-3   | -   | -    | valley sink, scrub, grassland                  | NO; too disturbed, no good habitat              |
| <i>Downingia humilis</i>                              | dwarf downingia              | 1b   | 1-2-3   | C3c | -    | vernal pools; wet places in valley grassland   | NO; no habitat                                  |
| <i>Erysimum capitatum</i> var. <i>angustifolium</i>   | Contra Costa wallflower      | 1b   | 3-3-3   | E   | E    | sand dunes, clay dust; Antioch Dunes vicinity  | NO; no habitat                                  |
| <i>Eschscholzia rhombipetala</i>                      | diamond-petaled Calif. poppy | 1b   | 3-3-3   | C2  | -    | dry flats, brushy slopes ?                     | NO; too disturbed, potential historic habitat ? |
| <i>Fritillaria liliacea</i>                           | fragrant fritillary          | 1b   | 1-2-3   | C2  | -    | heavy adobe soils, coastal grassland and scrub | NO; too disturbed, potential historic habitat ? |
| <i>Helianthella castanea</i>                          | Diablo helianthella          | 1b   | 3-2-3   | C2  | -    | grassy hillsides, oak woodland                 | Possible, but none seen                         |
| <i>Lasthenia conjugens</i>                            | Contra Costa goldfields      | 1b   | 3-2-3   | C2  | -    | vernal pools; wet places in valley grassland   | NO; no habitat                                  |
| <i>Legenere limosa</i>                                | legenere                     | 1b   | 3-3-3   | C2  | -    | vernal pools; wet places in valley grassland   | NO; no good habitat                             |
| <i>Orthocarpus campestris</i> var. <i>succulentus</i> | succulent owl's clover       | 1b   | 2-2-3   | C2  | E    | vernal pools and swales; valley grassland      | NO; no habitat                                  |
| <i>Plagiobothrys hystericulus</i>                     | bearded popcornflower        | 1b   | 3-3-3   | C2  | -    | vernal pools                                   | NO; no habitat                                  |
| <i>Tropidocarpum capparideum</i>                      | caper fruited tropidocarpum  | 1b   | 3-1-3   | C2  | -    | low alkaline hills & plains; Mt. Diablo region | NO; too disturbed, potential historic habitat ? |