

*From 1847*

***Benicia General Plan***

*Into the 21st Century*



Adopted: June 15, 1999

# ACKNOWLEDGMENTS

## **Benicia City Council**

Jerry Hayes, Mayor  
Steven Messina,  
Vice Mayor  
Carey Corbaley  
Stephen Gizzi  
Jan Cox-Golovich

## **Benicia Planning Commission**

Joe Burek, Chair  
Gary Kalian, Vice Chair  
Tom Campbell  
Geoffrey Hannafin  
Gregg Renfrow  
Nancy Steele  
Kathy Turner

## **General Plan Oversight Committee**

Elizabeth Patterson,  
Chair  
Joe Jacobson,  
Vice Chair  
Ron Arrants  
Ron Askham  
Marilyn Bardet  
Bob Berman  
Joe Burek  
Ron Glas  
Kitty Griffin  
Clint Holzwarth  
Gary Kalian  
Laksmi Lagares  
Annie Lloyd  
John Metzler  
Reg Page  
Lindy Purdy  
Mike Roetzer  
Gary Salvadori  
Bonnie Silveria  
Bob Sotelo  
Nancy Steele  
Ed Swenson

## **Committee**

### **Liaison Members**

#### **City Council**

Pepe Arteaga  
Carey Corbaley  
Jan Cox-Golovich  
John Silva

#### **School Board**

Diane Dooley  
Lisa Hirsh  
Sheli Ryan

### **City Manager**

Otto Giuliani

### **Planning Staff**

John Bunch,  
Planning Director  
Brenda Gillarde,  
Principal Planner  
Del Lacey,  
Graphics Illustrator

### **Technical Advisory**

#### **Committee**

Mike Alvarez,  
Parks and Community  
Services Director  
Rob Braulik,  
Economic  
Development Director  
Ken Hanley,  
Fire Chief  
Heather McLaughlin,  
City Attorney  
Alan Nadritch,  
Finance Director  
Dan Schiada,  
Assistant Director of  
Public Works

## **Consultants**

Naphtali Knox & Associates -  
Planning Manager  
Michael Fornalski - Report  
Format, Graphics, Maps  
Design, Community &  
Environment -  
Environmental Impact  
Report, Public Safety  
Joyce Associates -  
Geotechnical  
Environmental Collaborative -  
Biological Resources  
Clearwater Hydrology -  
Hydrology and  
Water Quality  
Orion Environmental  
Associates -  
Hazardous Materials  
Donald Ballanti - Air Quality  
Fehr & Peers Associates -  
Transportation  
Brown-Buntin Associates -  
Noise  
Mogavero Notestine  
Associates - Cultural  
Resources and  
Urban Design  
Economic & Planning Systems  
- Economic and Fiscal  
Community Design and  
Planning Services, UC Davis  
- Public Outreach  
Jeffery Baird - Work Program  
Daniel Iacofano -  
Meeting Facilitation  
Russ Clifton - Meeting Videos

## **Volunteers**

Thanks to the many volun-  
teers who supported the  
work of GPOC and the  
formation of the New  
General Plan.

# CONTENTS

1. INTRODUCTION .....	1
A. WHAT IS THE BENICIA GENERAL PLAN? .....	1
1. Role of the General Plan .....	1
2. Legal Requirements .....	2
3. The General Plan Process .....	2
Public Outreach Program .....	2
4. Organization of The Plan .....	6
Goals, Policies, and Programs .....	6
Four Chapters .....	6
Maps and Diagrams .....	7
Appendix .....	8
Technical Appendix .....	8
5. Implementing, Updating, and Amending the General Plan .....	10
Administering the General Plan .....	10
Annual Review by Planning Commission .....	11
Amending the Plan .....	11
6. Relation to Other Plans .....	12
B. REGIONAL SETTING .....	13
1. Location in the Region .....	13
2. Physical Setting .....	14
Gateways .....	16
C. THE PLANNING AREA .....	17
1. Planning Area Boundary .....	17
2. City Limits .....	19
3. Areas of Interest .....	19

- 2. COMMUNITY DEVELOPMENT AND SUSTAINABILITY ..... 21
  - What is Sustainable Development? ..... 22
  - A. LAND USE AND GROWTH MANAGEMENT ..... 23
    - LAND USE ..... 23
    - 1. Residential Land ..... 24
      - Low Density Residential ..... 25
      - Medium Density Residential ..... 25
      - High Density Residential ..... 26
    - 2. Commercial Land ..... 26
      - Downtown Commercial ..... 26
      - General Commercial ..... 27
      - Community Commercial ..... 27
      - Business and Professional Offices ..... 27
      - Waterfront Commercial ..... 27
    - 3. Mixed Use ..... 27
      - Downtown Mixed Use ..... 27
      - Lower Arsenal Mixed Use ..... 28
    - 4. Industrial Land ..... 28
      - General Industrial ..... 28
      - Limited Industrial ..... 28
      - Water-related Industrial ..... 29
    - 5. Public and Quasi-public Land ..... 29
    - 6. Open Space ..... 29
      - Marsh ..... 31
      - General Open Space ..... 31
      - Parks ..... 31
    - GROWTH MANAGEMENT ..... 32
  - B. ECONOMIC DEVELOPMENT ..... 37
    - 1. Economic Opportunities and Challenges ..... 37
      - Benicia’s Competitive Strengths ..... 38
      - Benicia’s Competitive Challenges ..... 39
      - Benicia’s Fiscal Status ..... 39
    - 2. Economic Development Goals, Policies, and Programs ..... 41
      - Citywide Economic Development ..... 41

Industrial Development .....	43
Port Development .....	45
Historic Arsenal .....	46
Downtown .....	47
Other Commercial Development .....	50
C. CIRCULATION .....	52
1. County and Regional Transportation Framework .....	52
Congestion Management Agency .....	52
Metropolitan Transportation Commission .....	52
2. The Movement of People .....	53
Pedestrian and Bicycle Movement .....	53
Public Transit .....	53
Automobile Movement .....	55
3. Circulation System .....	55
Freeways .....	57
Arterial Streets .....	57
Collector Streets .....	58
Local Streets .....	58
4. Existing and Future Traffic Conditions .....	58
Freeways .....	58
City Street Network .....	59
5. Parking Conditions .....	65
6. Freight and Goods Movement .....	66
Truck Facilities .....	66
Freight Rail Facilities .....	66
Port Facilities .....	66
7. Circulation Goals, Policies, and Programs .....	66
D. COMMUNITY SERVICES .....	77
1. Public and Quasi-public .....	77
Public and Quasi-public Goals, Policies, and Programs .....	77
2. Parks and Recreation .....	79
Standards .....	79
Existing Parks .....	79
Future Park Development .....	83
Parks and Recreation Goals, Policies, and Programs .....	84
Benicia State Parks .....	87

3. Schools .....	88
Existing Facilities .....	88
Future Facilities .....	88
Schools Goals, Policies, and Programs .....	89
4. Water .....	90
Water Supply .....	90
Water Quality .....	90
Waste Water Treatment .....	91
Water Goals, Policies, and Programs .....	91
5. Recycling Goals, Policies, and Programs .....	94
6. Utilities .....	94
Power and Energy Use .....	94
Telecommunications .....	94
Utilities Goals, Policies, and Programs .....	95
<b>3. COMMUNITY IDENTITY .....</b>	<b>97</b>
<b>A. HISTORIC RESOURCES .....</b>	<b>97</b>
1. Native American Period .....	98
2. Hispanic Period .....	98
3. American Period .....	98
4. Archaeological Sites .....	100
5. Historic Buildings, Sites, and Areas .....	100
Waterfront .....	100
Arsenal .....	101
Downtown .....	102
6. Historic Preservation .....	102
7. Historic and Archaeological Resources Goals, Policies, and Programs .....	105
<b>B. CULTURAL RESOURCES .....</b>	<b>106</b>
1. Community Cultural Facilities and Activities .....	106
2. Cultural Goals, Policies and Programs .....	107
3. The Art Community .....	108
4. Art Goals, Policies, and Programs .....	109
<b>C. VISUAL CHARACTER .....</b>	<b>110</b>
1. What is Visual Character? .....	110

---

2. The Look and Feel of Benicia .....	110
Natural Features .....	110
The Human Landscape .....	110
3. Scenic Views, Streets, and Gateways .....	111
Scenic Views .....	111
Waterfront .....	111
Scenic Streets and Gateways .....	113
Planning in Scenic Corridors .....	115
4. Architectural and Landscape Features .....	115
Southampton .....	115
Industrial Areas .....	115
Downtown .....	116
Arsenal District .....	117
Visual Character Goals, Policies, and Programs .....	117
<b>D. OPEN SPACE AND CONSERVATION OF RESOURCES .....</b>	<b>122</b>
1. Regional and Subregional Open Space and Trails .....	123
Open Space .....	123
Regional and Subregional Trails and Paths .....	124
2. Regional and Subregional Open Space and Trails Goals, Policies, and Programs .....	125
3. Biotic Resources .....	127
Plant Life .....	127
Wildlife .....	131
Special Status Species and Sensitive Natural Communities .....	132
4. Biotic Resources Goals, Policies, and Programs .....	133
5. Water Resources .....	135
6. Water Resources Goals, Policies, and Programs .....	136
7. Mineral Resources .....	137
Soils .....	137
8. Mineral Resource Goals, Policies, and Programs .....	138
9. Energy Conservation Goals, Policies, and Programs .....	138
<b>4. COMMUNITY HEALTH AND SAFETY .....</b>	<b>141</b>
<b>A. HEALTHY COMMUNITY .....</b>	<b>141</b>
1. Dimensions of Optimal Health .....	141
2. Healthy Community Goals, Policies, and Programs .....	142

- B. HAZARDS TO THE COMMUNITY ..... 145
  - 1. Geologic ..... 145
    - Seismic Hazards ..... 145
    - Slope Stability Hazards ..... 146
  - 2. Flood Hazards ..... 148
    - FEMA Flood Maps ..... 148
    - Stormwater Master Plan/Flood Control Improvements ..... 148
    - Sea Level Rise ..... 151
  - 3. Fire Hazards ..... 151
  - 4. Hazardous Materials and Waste ..... 151
    - Hazardous Sites ..... 151
    - Hazardous Material and Waste Handlers ..... 153
    - Toxic Air Contaminant Sources ..... 153
    - Hazardous Building Materials ..... 153
  - 5. Utility Hazards ..... 154
    - Electric Power ..... 154
    - Natural Gas ..... 154
    - Water Supply ..... 156
    - Waste Water ..... 156
  - 6. Air Quality/Contamination ..... 156
- C. RESPONSES TO HAZARDS ..... 158
  - 1. Community Right-to-know ..... 158
  - 2. Emergency Response Plans and Procedures ..... 158
    - Emergency Operations Plan ..... 158
    - Evacuation Routes ..... 159
  - 3. Public Safety Services ..... 159
    - Crime ..... 159
    - Police Services ..... 159
    - Fire Services ..... 159
  - 4. Medical Services ..... 160
  - 5. Community Hazards Goals, Policies, and Programs ..... 160
- D. NOISE ..... 170
  - 1. Human Reaction to Noise ..... 170
    - Communication Interference ..... 171
    - Sleep Interference ..... 171

Physiological responses ..... 171

    Annoyance ..... 171

2. Noise in the Community ..... 172

    Existing Noise Levels ..... 172

    Projected Noise Levels ..... 172

3. Performance Standards for Noise-Sensitive Uses ..... 176

    Transportation Noise Sources ..... 176

    Stationary Noise Sources ..... 177

4. Community Noise Goals, Policies, and Programs ..... 179

**GLOSSARY ..... 181**

**ABBREVIATIONS ..... 181**

**GLOSSARY ..... 183**

# LIST OF FIGURES

Figure 1-1. Regional Setting .....	14
Figure 1-2. Generalized Topography .....	15
Figure 1-3. Gateways .....	18
Figure 1-4. Benicia Planning Area .....	20
Figure 2-1. General Plan Land Use Categories Within City Limits .....	23
Figure 2-2. Industrial Properties to which Policy 2.3.1 (Master Plan) Applies ...	36
Figure 2-3. City of Benicia General Fund Revenues .....	40
Figure 2-4. Bicycle and Multi-Use Circulation Diagram .....	54
Figure 2-5. Circulation Diagram .....	56
Figure 2-6. Intersection Mitigations .....	62
Figure 2-7. Public/Quasi-public Facilities .....	78
Figure 2-8. Parks and Open Space .....	80
Figure 3-1. Historic Sites .....	99
Figure 3-2. Vistas and Views .....	112
Figure 3-3. Biological Resources .....	128
Figure 3-4. Hydrology and Mineral Resources .....	139
Figure 4-1. Ground Shaking Amplification .....	147
Figure 4-2. Areas with Potential Landslide and Liquefaction Hazards .....	149
Figure 4-3. Flood Hazards .....	150
Figure 4-4. Fire Hazards .....	152
Figure 4-5. Transmission Lines and Critical Facilities .....	155
Figure 4-6. Existing Noise Contours .....	173
Figure 4-7. Future Noise Contours .....	175

# LIST OF TABLES

Table 1-1.	Background Reports in the Technical Appendix .....	8
Table 1-2.	Relation of General Plan Chapters to State-mandated Elements .....	9
Table 1-3.	List of Other Plans and Documents Examined .....	12
Table 2-1.	Zoning District Equivalents for General Plan Residential Land Use Categories .....	24
Table 2-2.	Residential Land Within City Limits in Gross Acres, as of 1995 .....	25
Table 2-3.	Commercial Land (in gross acres) Within City Limits, as of 1995 .....	26
Table 2-4.	Industrial Land (in acres) within City Limits, as of 1995 .....	28
Table 2-5.	Existing Public and Quasi-public Facilities Within City Limits, 1995 .....	30
Table 2-6.	Park Standards .....	31
Table 2-7.	Classification of Bicycle Facilities .....	53
Table 2-8.	Level of Service Criteria for Signalized Intersections .....	60
Table 2-9.	Level of Service Criteria for Stop-controlled Intersections .....	60
Table 2-10.	Existing (1995) and Future Intersection Levels of Service (LOS) .....	61
Table 2-11.	Intersection LOS: Future Conditions with and without Intersection Improvements .....	63
Table 2-12.	Streets That May Exceed Existing (1997) Capacity with Future Growth Under this General Plan .....	65
Table 2-13.	Existing and Future Parks and Recreation Facilities within City Limits, 1995 .....	81
Table 2-14.	Amount of Park Land per Capita .....	82
Table 2-15.	School Enrollment and Capacity, 1997-1998 .....	88
Table 2-16.	School Enrollment, 1997 and Projected .....	89
Table 4-1.	Decibel Levels of Common Noises .....	170
Table 4-2.	Summary of Measured Exterior Noise Levels and Estimated Day-Night Average Levels ( $L_{dn}$ ) in Areas Containing Noise Sensitive Land Uses .....	174
Table 4-3.	Maximum Allowable Noise Exposure for New Noise-Sensitive Uses From Transportation Noise Sources .....	176
Table 4-4.	Noise Level Performance Standards for Noise-sensitive Land Uses which may be affected by Stationary Noise Sources .....	178



# 1. INTRODUCTION

Benicia has a long history of big ideas. Originally the city was to be a major port; then it was the state capital; later it was a transportation hub. An increase in population and jobs that started in the 1970s is expected to continue, though at a slower pace, through 2015. During this period of expansion, it is vital that Benicia's future be managed wisely to preserve and enhance its many attractive qualities.

This chapter details the planning, legal, and physical framework for the Benicia General Plan. Specifically it describes the role of the plan, its legal footing, its organization, Benicia's relationship to the region, and a description of the planning area.

## A. WHAT IS THE BENICIA GENERAL PLAN?

### 1. ROLE OF THE GENERAL PLAN

The Benicia General Plan is the principal policy document for guiding future conservation and development in the city. It reflects the community's shared values and determination of what Benicia is and should continue to be—an uncommonly special place.

The Plan has a long-term horizon, addressing an approximately 15- to 20-year time frame. At the same time, it brings overall direction to the day-to-day decisions of the City Council, its commissions, and City staff.

The General Plan determines what kind of urban development should take place and where and when, and who in the City will be charged with getting it done.

The Plan—

- Expresses the desires of Benicia residents in regard to the physical, social, economic, cultural, and environmental character of the city;
- Serves as a comprehensive guide for making decisions about land use, economic development, road improvements, and protecting natural resources and the public health and safety;
- Provides the legal foundation for all zoning, subdivision, and public facilities ordinances, decisions, and projects—all of which must be consistent with the General Plan.

The general plan is to be considered and used as a whole. One section is not to be stressed while ignoring others; rather all of the sections should be used together, with flexibility. Used in this way, the Plan will become a powerful tool for ensuring consistency of City actions, while remaining responsive to changing needs and times.

## 2. LEGAL REQUIREMENTS

The general plan is a State-mandated blueprint for physical development. The general plan derives its authority as the summit of land use regulations from the California Government Code. The City Council adopts the general plan by resolution as a legal document.

Seven general plan “elements” are required by law: Land Use, Circulation, Housing, Conservation, Open Space, Safety, and Noise. How these elements are incorporated into the organization of this General Plan is explained in Section 4, below, and in Table 1-2. When optional subjects are added to a general plan (for example, “economic development” and “health”), they have the same status as a mandated element. All general plan elements carry equal weight (*Sierra Club v. Board of Supervisors* [1981] 126 Cal.App.3d 698). No single section, chapter, or subject supersedes any other.

## 3. THE GENERAL PLAN PROCESS

In late 1992, the Benicia City Council formed a citizens’ task force to review the General Plan and report its findings. As a result, in late 1993, a General Plan Task Force Report was issued. The report stated that many of the policies and programs in the General Plan had not been revised since 1979, had already been implemented, or were no longer relevant to current or future conditions.

In June 1994, the City Council adopted a resolution directing that preparations begin for a comprehensive update of the General Plan. Accordingly, the Council formed a 17-member citizens’ General Plan Oversight Committee (GPOC) to work with City staff to design the update process. GPOC was charged with facilitating public outreach, monitoring the update process to be sure it is on time and within budget, providing volunteer assistance, and assisting in community workshops and forums.

Consultants were engaged to develop a work program for a General Plan Update. The work program was presented to and accepted by the City Council in November 1994. The City Council adopted a budget for the work and directed staff and the GPOC to retain consultants to assist GPOC in undertaking the actual update.

### **PUBLIC OUTREACH PROGRAM**

This General Plan is built on issues defined by the community—issues that focused on what should be preserved and what should change. Some of those

issues came from discussion by the General Plan Oversight Committee (GPOC) of a number of Background Reports produced by the City's consultants in late 1995 and early 1996. Many other issues, however, were identified during the course of two communitywide surveys and six public workshops in 1995 and 1996.

At the outset of the process to involve the public, GPOC mailed an open-response questionnaire to gauge, in a general way, public opinion concerning issues to be addressed in the General Plan update. In response to ideas generated through the questionnaire, the Community Design and Planning Services (CDPS) of the University of California (Davis) conducted a series of workshops in neighborhoods throughout the city. To involve the city's youth, CDPS oversaw workshops and discussion sessions in all Benicia schools. The issues brought out in the first questionnaire and the workshops were tested with a longer survey mailed to the entire community.

**Survey 1**

A two-page questionnaire mailed by the GPOC to Benicians in June 1995 was answered by nearly 500 people. The results pinpointed what people deeply care about in Benicia:

Benicia's small-town atmosphere

Economic health of First Street

Objectivity in business development



### **Workshops**

In the summer of 1995, the General Plan Oversight Committee hosted six public workshops on the General Plan update. More than a hundred Benicians from all areas of town attended the workshops. Major concerns were:

- cultural resources
- quality of life
- small town character; and
- the waterfront.

Workshop participants generally supported:

- First Street and tourism;
- a diversified economy;
- opportunities to live and work in town; and
- infill development, rather than expansion.

### **Youth Outreach**

Students of all ages were involved in the process of identifying what is important to people living in Benicia. Different methods for garnering responses, ideas, and concerns were used for each age group.

Elementary school students were asked to draw pictures of the things they considered “important.” The drawings centered on themes of environmental quality and recreational facilities. Middle school students were organized into small groups; each group was given a 24-exposure disposable camera to photograph representations of their ideas. The resulting collage of photos expressed concerns about pollution, increased housing construction, traffic congestion, parking, and historic preservation. They desired more green space and recreational facilities for their age group. High school students responded to a two-page survey; results of the survey yielded that almost half of the high school students would live in Benicia as an adult; 65 percent wanted to raise a family here; and 89 percent felt safe in the city.

## **Survey 2**

A second survey was mailed to 11,000 households and businesses in Benicia in January 1996. Nearly 3,000 completed surveys were returned, which gave the survey results a high level of confidence. The following 10 issues received the highest level of support (69% or greater) as being important to the community:

1. Feeling safe in residential areas at night
2. Feeling safe Downtown at night
3. Good public schools
4. Balance growth to ensure maintaining Benicia's quality of life
5. Small town atmosphere
6. Growth should maintain small-town character
7. Citizens need a voice in growth decisions
8. Attract businesses that sustain environmental quality
9. Pedestrian-friendly streets in the Downtown and other commercial areas
10. Library facilities

A number of issues raised by the survey were opposed, although with the exception of Sky Valley (two-thirds of Benicians do not want residential development in Sky Valley) the levels of opposition were not as great (generally only 20 to 30 percent), in contrast to the very high levels of support (70 to 90 percent) for the 10 issues listed above. Refer to Appendix A for more detailed survey results.

The City's consultants and citizen groups prepared 11 background reports at the end of 1995. GPOC began in February 1996 to use that information, the results of a communitywide survey taken in January 1996, and a series of community workshops held during the summer to identify the issues to be faced in updating the Benicia General Plan. An Issues, Goals, and Policies (IGPS) report was prepared January 21, 1997 and reviewed by the GPOC, Planning Commission, and City Council. These reviews ensured that the IGPS document contained goals and policies for what are the most significant issues for the community.

The City's consultants then prepared a Goals, Policies, and Programs report (June 6) and a Preferred Alternatives Report (June 30) which incorporated additions and changes made by the GPOC, the consultants, City staff, Planning Commission, and City Council since the IGPS report of January 21, 1997. The Preferred Alternatives Report was reviewed by the City Council on August 6, and with their comments in hand, the consultants began drafting the General Plan and an environmental impact report.

This Draft General Plan is the outcome of a process which began with the Task Force (1992-93) and the Work Program (1994). It is a process in which the General Plan Oversight Committee (GPOC) held more than one hundred meetings and, with public participation, identified the Goals, Policies, and Programs (GPPS) which are the heart of this General Plan.

## 4. ORGANIZATION OF THE PLAN

### GOALS, POLICIES, AND PROGRAMS

“Goals” are “end-state”; they are the long-range answers to what the City wants to accomplish to resolve a particular issue. Policies are medium- or short-range statements that guide day-to-day decision-making so there is continuing progress toward the attainment of goals. Programs are the actions taken to implement a specific policy or group of policies. The hierarchy of *goal*, *policy*, and *program* is outlined below.



**GOAL:** A general, overall, and ultimate purpose, aim, or end toward which the City will direct effort.

**POLICY:** A specific statement of principle which implies clear commitment but is not mandatory. A general direction that the City elects to follow, in order to meet its goals.

*Program:* An action, activity, or strategy carried out in response to adopted policy or group of policies.

Explanatory text appears before and after some of the goals, policies, and programs but is not part of the goal, policy or program.

### FOUR CHAPTERS

The Benicia General Plan is organized into four chapters, a glossary, an Appendix, and a Technical Appendix. The chapters are 1: Introduction; 2: Community Development and Sustainability; 3: Community Identity; and 4: Community Health and Safety.

Chapter 2 includes four sections:

- Land Use defines the ultimate building envelope” for the City, and establishes the overarching goals for the community’s development. Land Use also defines the seventeen land use categories used in the General Plan and identifies those properties where changes occurred to the prior (1993) General Plan land uses.
- Economic Development addresses land development in all the business and commercial sectors of the City.
- Circulation looks at how freeways affect Benicia, in-town traffic, and mass transit.
- Community Services discusses public facilities and provision of public services.

Chapter 3 covers three topics:

- Historic and Cultural Resources addresses preservation of historic areas and building community spirit.
- Visual Character deals with maintaining Benicia’s small town atmosphere, preserving scenic views, and enhancing the City’s appearance.

- Open Space and Conservation of Resources focuses on protection and enhancement of the natural environment including open space, water and air, and plants and animals.

Chapter 4 contains four sections:

- Healthy Communities promotes ways to live more healthfully.
- Hazards to the Community identifies dangers to the community per the State-mandated safety element.
- Responses to Hazards contains the community’s emergency response plans and the safety goals, policies and programs.
- Noise focuses on the sources and effects of sounds in the community, per the State-mandated noise element.

The Benicia Housing Element (1993) is a stand-alone document, but is part of this General Plan and should be consulted accordingly. The Housing Element contains the City’s goals, policies and programs related to the maintenance and development of housing in Benicia.

#### **DIAGRAMS**

The City’s land use diagram, which is attached separately at the back of this document, is an integral part of the General Plan. The diagram graphically expresses the Plan’s development policies by showing the desired arrangement and location of land uses. The diagram is required to be consistent with the General Plan text (and its goals, policies, and programs).

In keeping with past practice, the City of Benicia has again prepared a site-specific land use diagram to avoid confusion about designations for individual parcels. While the boundaries between land use districts usually follow property lines or streets, the land use diagram should not be used to calculate parcel acreages or lot size dimensions. The Assessors’ Parcel Books can be used for that purpose.

The land use diagram and the general plan text together specify the “population density” (number of people and dwelling units per net acre) of residentially-designated land and the “building intensity” for all other designations. Building intensity is expressed in terms of floor area ratio (FAR), which is the ratio of gross floor area to the total site area. The land use diagram also shows the location of existing and proposed parks, public schools, and other municipal services.

The circulation diagram shows current and proposed arterials, collectors, and local streets, as well as bikeways and rail lines. The roadway system has been tested against the planned level of development and has been found to be adequate. More discussion about the relationship between land use and circulation is found in Chapter 2C of this General Plan.

Together, the land use and circulation diagrams illustrate the managed growth of the City for the next 15 to 20 years. The General Plan also contains other diagrams to illustrate the policies and programs in the Plan.

**APPENDIX**

The Appendix contains information on Growth Management and Hazardous Substances. While important to a thorough understanding of the General Plan, the Appendix is not adopted as policy by the City.

**TECHNICAL APPENDIX**

A separate document, the Technical Appendix, contains background material used in preparing the General Plan. This material provided an essential foundation for formulating issues, goals, policies, and programs. While important to a thorough understanding of the General Plan process, the Technical Appendix is not adopted as policy by the City. Anyone wishing to review the Technical Appendix may do so at the Planning Department in City Hall or at the public library. A list of the Background Reports contained in the Technical Appendix:

***Table 1-1. Background Reports in the Technical Appendix***

1. Audit of 1993 General Plan	November 13, 1995
2. Community Survey Report	May 1996
3. Cultural Resources	August 23, 1996
4. Economic and Fiscal	February 26, 1996
5. Healthy Communities	February 26, 1996
6. Historical and Archaeological	March 5, 1996
7. Housing and Demographics	January 11, 1996
8. Land Use	April 1, 1996
9. Natural Resources	January 17, 1996
10. Noise	February 14, 1996
11. Public Safety	February 28, 1996
12. Transportation	May 3, 1996
13. Urban Design	April 4, 1996

**Table 1-2. Relation of General Plan Chapters to State-mandated Elements**

MANDATED ELEMENTS		GENERAL PLAN	
		Chapter**	Pages
LAND USE ELEMENT	Population Density & Building Intensity	2	23-31
	Land Use Diagram	2	Rear Pocket
	Distribution of Housing, Business, Industry, and Open Space	2	Rear Pocket
	Distribution of Recreation Facilities, Educational Facilities, and Public Buildings	2	Rear Pocket
	Flood Areas	4	148-150
	Mineral Resources	3	137-139
	Implementation	2	32-35, 41-51, 67-77, 84-87, 89-90, 92-95
	CIRCULATION ELEMENT	Description of Existing System	2
Diagram of Existing System		2	54, 56
Description of Proposed System		2	58-65
Diagram of Proposed System		2	54, 56
Utilities		2, 4	90-91, 154-156
Implementation		2	67-76, 168
CONSERVATION ELEMENT	Water, Rivers, Harbors	2, 3	90, 122-124, 129
	Forests	3	130
	Soils	4	137, 145-148
	Mineral Resources	3	137
	Implementation	2, 3	92-94, 133-134, 136, 138
OPEN SPACE ELEMENT	Description	3	122-125
	Trails System	2, 3	80, 124-125
	Management of Resources	2, 3	90-91, 135, 137
	Areas for Outdoor Recreation	2, 3	79-83
	Preservation for Public Health, Safety	3	147, 149, 150, 152
	Implementation	2, 3	84-86, 125-127, 133-134, 136

**Table 1-2. Relation of General Plan Chapters to State-mandated Elements (continued)**

MANDATED ELEMENTS	GENERAL PLAN	
	Chapter*	Pages
SAFETY ELEMENT	Seismic Risk	4   145-146
	Slope Instability/Geologic Hazards	4   146-148
	Flooding	4   148-151
	Fire Hazard	4   151
	Emergency Response/Evacuation Routes	4   158-159
	Hazardous Materials	4, G   151-153, G1-G18
	Implementation	4   160-169
NOISE ELEMENT	Noise Sources and Problems	4   170-172
	Noise Contours	4   173, 175
	Noise Attenuation	4   176, 178
	Implementation	4   179-180

\* Letters refer to the Appendices

## 5. IMPLEMENTING, UPDATING, AND AMENDING THE GENERAL PLAN

### ADMINISTERING THE GENERAL PLAN

Once adopted, a general plan does not remain static. State law permits up to four general plan amendments per mandatory element per year (Government Code §65358[b]). Most amendments propose a change in the land use designation of a particular property which equates to a change to the land use element. As time passes, the City may decide that it also is necessary to revise portions of the text to reflect land use diagram changes or other changing circumstances or philosophy.

While some degree of flexibility is desirable in the planning process, basic to its very existence is that it possess some degree of stability. Without the expectation of stability, it cannot serve as a comprehensive and long-term guide to local development. Therefore, although the City may decide to amend this plan, the primary position of the City will be to implement it as adopted. This will honor both the principle of stability and the extraordinary degree of community participation that went into the formation of the plan.

Generally it is recommended that the City comprehensively review the Plan every five years to determine whether it is still in step with community values and conditions.

**ANNUAL REVIEW BY PLANNING COMMISSION**

State law provides direction on how cities can maintain the plan as a contemporary policy guide: Government Code §65400[b] requires each planning agency to report annually to the Office of Planning and Research and the California Department of Housing and Community Development (HCD) on “the status of the plan and progress in its implementation, including the progress in meeting its share of regional housing needs determined pursuant to Section 65584...”. In addition, the planning agency is required annually to review the City’s Capital Improvements Program for consistency with the General Plan (Government Code §65103[c]).

**AMENDING THE PLAN**

Anyone wishing to amend the General Plan would follow the procedure generally outlined below. (More detailed information on processing and timing is available from the Planning Department.)

1. Prior to filing an application, the prospective applicant should discuss the proposed amendment with City staff. This will clarify the process and identify any concerns the City may have about the proposed changes.
2. The next step in the process is to file an official application with the Planning Department and pay any necessary processing fees. An application must include a development plan of sufficient detail that potential environmental effects could be ascertained.
3. City staff reviews the application for completeness and then schedules it for a public hearing before the Planning Commission. A public notice is sent to all property owners within 300 feet of the subject property and a legal notice is also placed in the official newspaper.
4. The Planning Department staff will prepare a report for the Planning Commission which discusses the proposed amendment, any environmental effects that may result from the amendment, and any comments received from City departments or outside agencies. The report advises the Planning Commission whether it should recommend the amendment to the City Council for approval or denial.
5. The amendment is then set for public hearing before the City Council, accompanied by another staff report and the Planning Commission recommendation.

## 6. RELATION TO OTHER PLANS

As part of the General Plan update, a number of plans and studies were examined and reviewed. The General Plan Task Force Report (item 1), the two Conservation Plans (items 2 and 3), and the Economic Development Strategy (item 4) were among the more influential documents in setting the scope and tone of the general plan update process.

**Table 1-3. List of Other Plans and Documents Examined**

<b>Plan or Document</b>	<b>Date</b>
1. General Plan Task Force Report	December 1993
2. Downtown Historic Conservation Plan	November 1990
3. Arsenal Historic Conservation Plan	November 1993
4. Economic Development Strategy, Benicia Economic Development Board	January 17, 1995
5. Benicia Industrial Design Guidelines	March 10, 1989
6. Preliminary Master Circulation Study	August 1990
7. Citywide Traffic Improvement Funding Report (Omni Means)	January 1992
8. Water System Master Plan	November 1990
9. SkyValley Benicia Specific Plan	April 10, 1992
10. Benicia Zoning Ordinance (as amended):	May 1994
11. Benicia Subdivision Ordinance	November 1993
12. Parks, Trails, and Open Space Master Plan	June 1994
13. Benicia State Park Recreation Area	June 1991
14. Benicia Capitol State Historic Park	June 1991
15. Benicia/Solano County Economic/Community Profile	August 1995
16. Tri-City and County Open Space Plan	March 1994
17. Gateway to the Inland Coast: The Story of the Carquinez Strait	1996
18. Carquinez Strait Resource Plan	September 1997
19. Delta Estuary, California's Inland Coast	May 1991
20. Solano County Land Use and Circulation Element	July 1994
21. Solano Congestion Management Program	November 1993
22. Bay Area Ridge Trail Plan	1992
23. Bay Trail: Planning for a Recreational Ring Around San Francisco	1989
24. Special Area Plan - Tri-City and County Regional Park and Open Space Preservation Plan	1994
25. Waterfront Plan	1975
26. Special Area Plan for Waterfront Area	1977
27. Urban Waterfront Restoration Plan	1980

## **B. REGIONAL SETTING**

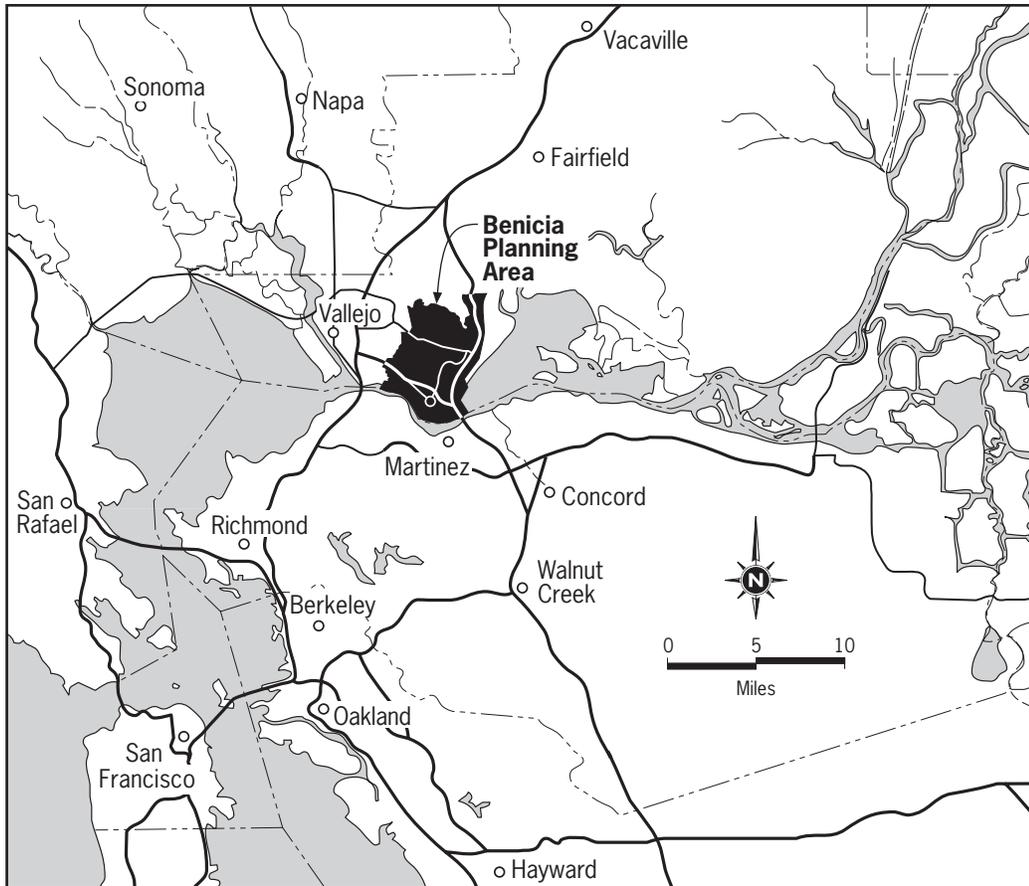
### **1. LOCATION IN THE REGION**

Benicia is approximately 35 miles northeast of San Francisco and 57 miles southwest of Sacramento. It lies on the north shore of the Carquinez Strait, where the combined flow of the Sacramento and San Joaquin rivers have cut a deep gorge through the coast range. The Strait is a crucial link in Northern California's inland waterway, connecting San Pablo Bay and San Francisco Bay to the west with the Sacramento and San Joaquin river delta to the east. Through the Strait, ocean-going ships can reach the Port of Benicia, or can continue on to the Central Valley ports of Sacramento and Stockton.

The city is built on a peninsula of land that reaches south from the main body of Solano County and creates a prominent bend in the Carquinez Strait. From this peninsula, highway and railroad bridges span the Strait to connect Benicia with the Contra Costa County cities of Martinez and Concord. This is the one place where both trucks and railroad cars can cross the San Francisco Bay/Sacramento River waterway. The rail line and I-680 provide easy access to Benicia from the north and south; I-780 (which the city straddles) provides access from the west.

Although part of Solano County, Benicia is closely linked to Contra Costa County across the Strait. Views from Benicia encompass the Strait, the foothills of northern Contra Costa County, and Mt. Diablo in the distance. Many Benicia residents work and shop in Contra Costa County.





**Figure 1-1. Regional Setting**

## 2. PHYSICAL SETTING

The Planning Area is made up primarily of rolling hills, rising to an elevation of 1,160 feet. On the west boundary, Sulphur Springs Mountain reaches approximately 950 feet. Two major drainages—Sulphur Springs Creek in the west, and Paddy Creek in the east—run approximately north-south through the Planning Area. The flow from Sulphur Springs Creek is contained by Lake Herman before being joined by Paddy Creek and continuing into the Benicia Industrial Park.

The rolling hills reach almost to the shoreline; very little of Benicia is flat. (See Figure 1-2.) On the southern margins of the city, the land slopes gently down to the Carquinez Strait. Most of the older residential areas and the Downtown are here. The eastern city limits are bordered by the marshlands of Suisun Bay. Relatively flat areas adjacent to the marshes provide sites for industry. At the southwestern boundary of the Planning Area, another flat, marshy area has been preserved as the Benicia State Recreation Area.

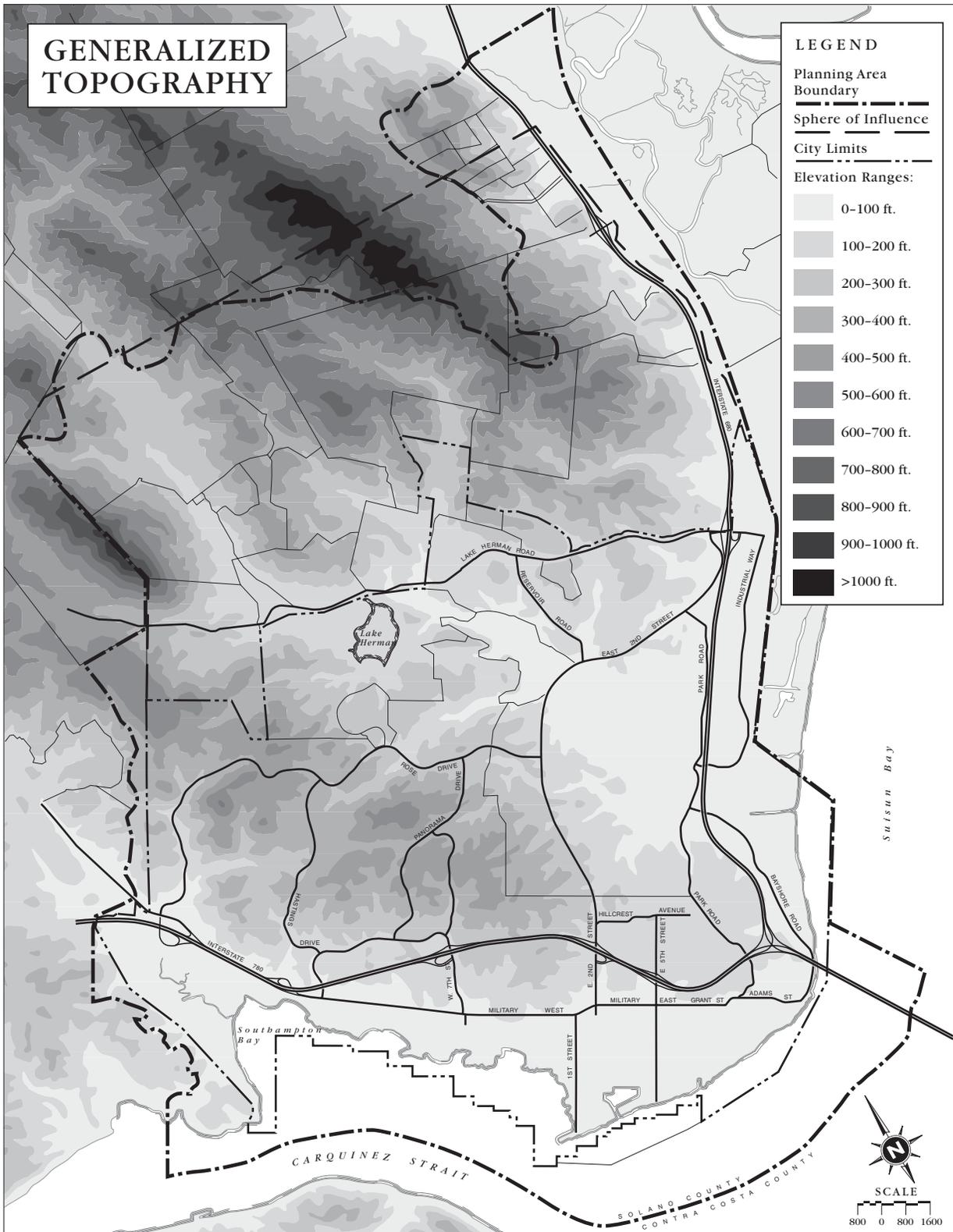


Figure 1-2. Generalized Topography

Several key natural features have influenced the pattern of existing development:

- The Carquinez Strait and Suisun Bay, which provide an extensive, accessible shoreline that is bracketed on both east and west by marsh preserves. The shoreline is divided between residential, recreational, and industrial uses.
- Low hills above the Downtown that interrupt lines of sight to the newer development in the hill areas north of I-780. This interruption creates separate “visual basins”—contributing to the small town feel and scale of Benicia. The topography frames a “water-oriented” area containing the Downtown, central Benicia, and portions of Southamptton which lie below the main ridgeline.
- Steep hillsides, high promontories, and canyons north of the main ridgeline facing the Carquinez Strait that define three distinct areas: (1) an “upland” area directly behind the main ridgeline, which is largely developed; (2) the “lake” area where the hills slope inward towards Lake Herman; and (3) a “northern” area comprised of the watershed of Sulphur Springs Creek, which until the early 1990s was considered for residential development.
- A pronounced terrace, directly in line with the Benicia-Martinez Bridge, that separates the northbound and westbound freeways. This terrace defines two distinct industrial areas: community uses and import-export activities to the southwest, and major industrial uses to the northeast. The northeast industrial area is also contained by the hills below Lake Herman Road to the north, the slopes above East Second Street to the west, and Suisun Bay to the east.

#### GATEWAYS

Benicia’s identity is strengthened by the experience of entering the city through distinct gateways: four by land and one by water. Each of these gateways provides a different view of the city:

- |                          |   |
|--------------------------|---|
| <b>Lake Herman Road:</b> | Provides the visitor with views of the lake and rolling hills. Arriving from this direction the newcomer might see Benicia as largely undeveloped.                      |
| <b>Northern Gateway:</b> | On I-680 at Lake Herman Road. Presents Benicia as an industrial city to visitors passing through the heart of the industrial park.                                      |
| <b>Southern Gateway:</b> | Crossing the bridge from Martinez on I-680, shows Benicia as a Bay Area crossroads, where major rail and highway crossings link the two shores of the Carquinez Strait. |
| <b>Western Gateway:</b>  | On I-780, introduces the traveler to the green marshlands in the Benicia State Recreation Area and water-oriented housing.  |



**Marina/Port Gateway:** Welcomes those coming by small boat or by ship and provides a waterfront view of Benicia revealing its small town “human scale” and historic character.

The view from each of these gateways is influenced both by topography and land use. Whether Benicia is seen as a city of industry, open space, or residential neighborhoods can depend on the vantage point of the observer. Future development near each of these gateways will have important effects on the image of Benicia. (See Figure 1-3.)

## C. THE PLANNING AREA

### 1. PLANNING AREA BOUNDARY

Benicia’s Planning Area—established for this General Plan—covers an area of over 15,000 acres—about 24 square miles. (See Figure 1-4.) This Planning Area generally corresponds to Benicia’s Sphere of Influence (SOI), the area designated by the Solano County Local Agency Formation Commission (LAFCO) as the probable ultimate physical boundary and service area of the city. Along the northern border of the SOI, however, the planning area extends only to the southern boundary of the Tri-City and County Open Space Area.

North of the city limits, the Planning Area encompasses 6,392 acres of generally undeveloped rolling hills. The Planning Area boundary deviates from the Sphere

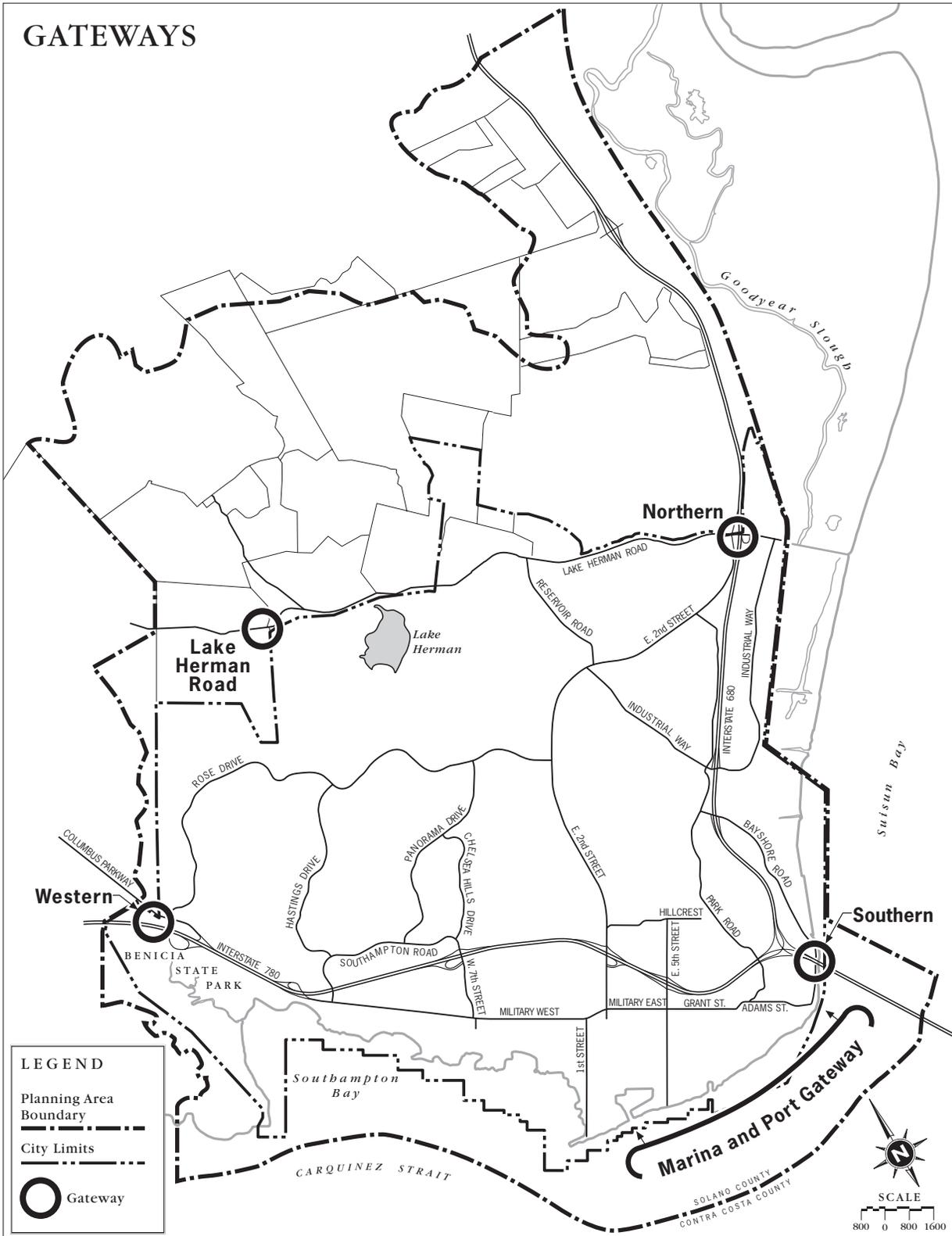


Figure 1-3. Gateways

of Influence boundary to include a small area east of I-680 and to follow the boundary of the Tri-City and County Open Space on the north, rather than the straight line drawn by LAFCO. Much of this land is used for cattle grazing or open space. The eastern portion of the Planning Area includes a 242-acre Class I hazardous waste disposal site which is being prepared for permanent closure.

The Planning Area also includes a portion of Sulphur Springs Mountain, which has been designated as a Mineral Resource Area. However, Syar Quarry is outside of the Benicia Sphere of Influence, and the Planning Area.

## 2. CITY LIMITS

Benicia's 1995 City limits covers a total of 14 square miles, including about 1.2 square miles of open water and 12.8 square miles of land. The land area also includes some areas of seasonal or permanent wetlands. Nearly all of the existing residential, commercial, and industrial development in the Planning Area is located within the City limits. Approximately 53 percent of the land within the City was developed as of 1995.

## 3. AREAS OF INTEREST

The City has identified several Areas of Interest outside the SOI that have a direct physical and social influence on the City's planning but are not considered for annexation: (1) the Benicia-Vallejo buffer area adjoining Benicia's west City Limits, between I-780 and Lake Herman Road; (2) an area adjacent to and west of the Benicia State Recreation Area; (3) an area between the railroad line and I-680 and north of Lake Herman Road; and (4) the Carquinez-Strait region. The City has included these areas in its Planning Area and will request that it be notified of all planning decisions affecting these "Areas of Interest."

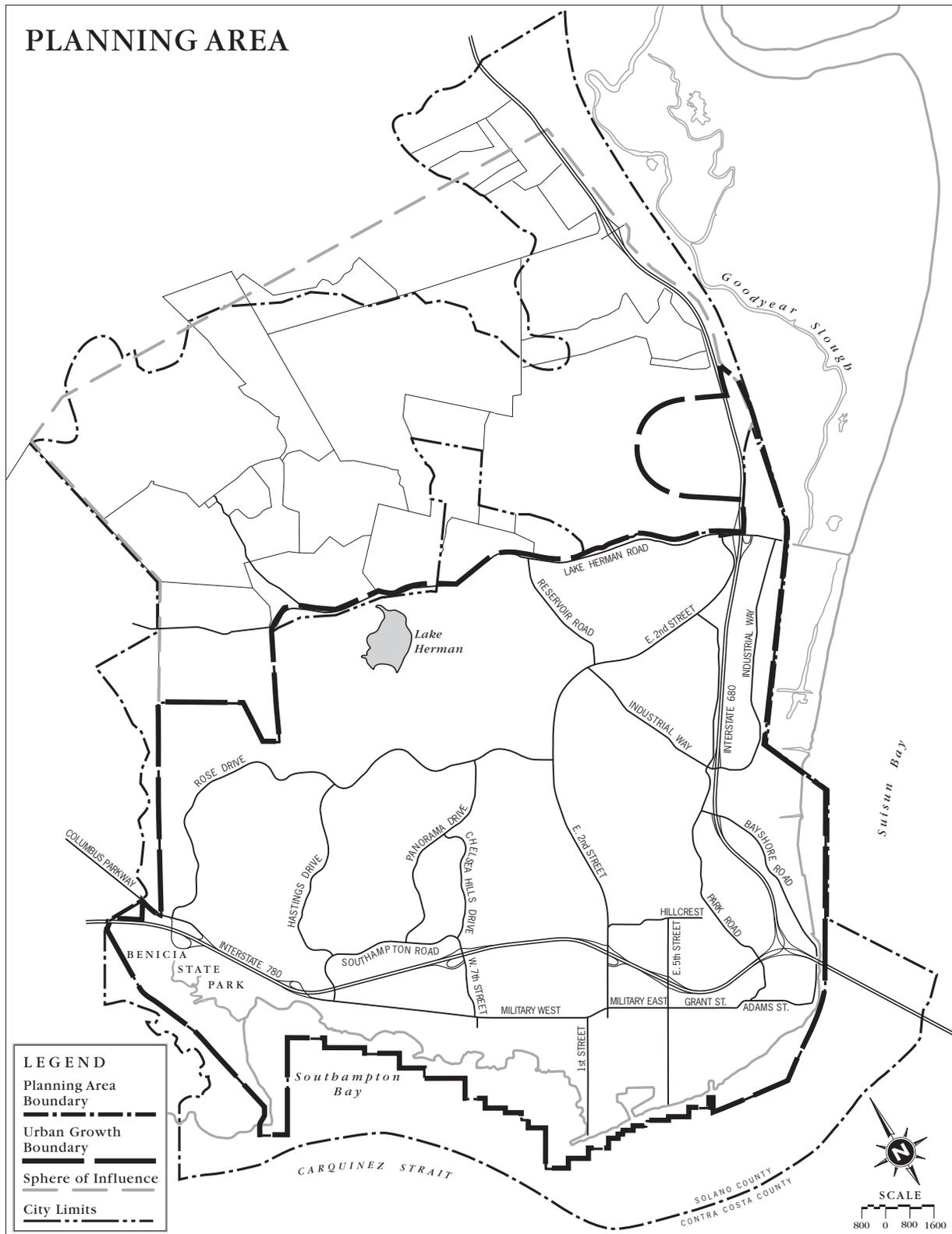


Figure 1-4. Benicia Planning Area

## 2. COMMUNITY DEVELOPMENT AND SUSTAINABILITY

Community development and sustainability are at the heart of the goals developed in this General Plan. *Community development* refers to all aspects of development including: (1) new residential and commercial development, such as new housing or an office building; (2) economic development such as jobs, income, fiscal health, and expansion and attraction of businesses; and (3) relationships between different areas of the city and how those areas serve the needs of the community. *Sustainable development* has become a popular planning expression used abundantly but often not understood. Sustainable development represents an approach to community development that Benicia residents and businesses want to achieve with this General Plan. A brief definition of sustainable development is provided below.





### **WHAT IS SUSTAINABLE DEVELOPMENT?<sup>1</sup>**

One of the first governing bodies in the United States to develop a definition for sustainable development that fits the vision of this Plan was the Minnesota State legislature. They define sustainable development as that which “maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.”

“Sustainability” in this General Plan conveys long-term interdependent economic and environmental goals that promote efficient land use. It is a way of thinking and acting responsibly with respect to environmental, social, and economic issues at ever-widening levels of awareness or “integration.” That is, what is done at the project or local level can affect all levels of the environment, including the local community, neighboring regions, the country, and the world.

Sustainable development implies urban areas that reflect a long-term economic horizon; result in efficient land use patterns that are not overly energy-intensive; have sufficient linkages to the local and regional economy to assure long-term job creation and economic vitality; support ecologically sensitive design features; and value the public realm.

The concept of creating a sustainable community in Benicia is a primary goal and objective of the General Plan. The concept affects all chapters of the Plan and all aspects of the community. While it is assumed that this Plan cannot radically change the nature of Benicia, the goal and intent is to create a more livable and sustainable community over time.

---

<sup>1</sup> This definition is taken in part from “Sustainable Development: Concept Definition, Urban Development Principles, and Stapleton Opportunities and Constraints” prepared for the Stapleton Redevelopment Foundation by Economic & Planning Systems, Inc. (January 1994).

## A. LAND USE AND GROWTH MANAGEMENT

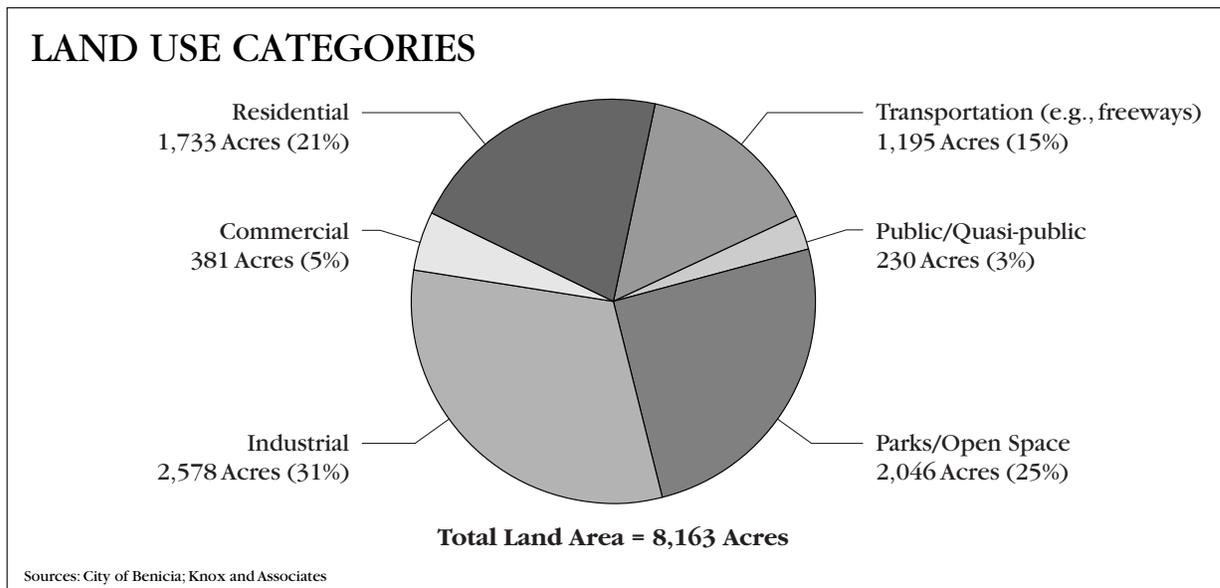
The primary function of this section is to designate land for specific types and amounts of development and to set the overall development framework for the City. Areas of the City are generally categorized according to their suitability for residential, commercial, industrial, or public/quasi-public use. In addition, the City has designated land for open space that should not be developed because of its importance for health, safety, agriculture, or recreation.

The land use section provides background information on the location and extent of existing land uses in Benicia, defines each land use category used in the plan, and describes the changes that this plan makes to the 1993 General Plan. A land use plan map covering the entire planning area is provided in the back pocket of this document and is adopted as City policy as part of this General Plan.

The Growth Management section establishes the overarching goals for development in Benicia. It defines and seeks to preserve those characteristics that make Benicia a truly unique and special place.

### LAND USE

The pattern of general plan land uses is reflected in the pocket diagram at the back of the document. The largest category is industrial (31%), followed closely by parks/open space (25%) and residential (21%). Non-industrial/commercial uses represent a relatively small portion (3%). This pattern indicates the community's priorities in terms of types of land uses within the city limits. The new general plan slightly shifts the existing pattern of land use in the northern area toward



**Figure 2-1. General Plan Land Use Categories Within City Limits**

more open space (refer to Appendix B - Land Use Changes). This reflects the community’s desire to contain development and grow at a slower rate.

It is the intent of this General Plan that land be used efficiently to reduce traffic, preserve land at urban fringes, reduce infrastructure costs, and minimize the loss of farmland, wetlands, and open space. By doing these things, it is hoped that Benicia can avoid the costs of sprawl and erosion of the quality of life.

For each category of land, the General Plan must establish standards of population density and building intensity. For residential land, the Plan will stipulate densities in housing units per gross acre. Potential population density will be obtained by multiplying the number of units per acre by the number of persons per unit (three persons/unit for low density, two persons/unit for medium and high density. In the event of a discrepancy between residential units per acre and persons per acre, the unit density—and not the population density—will govern.)

For nonresidential uses, the Plan specifies a maximum Floor Area Ratio (FAR), calculated as the ratio of gross floor area to site area.

The specific uses mentioned in each definition of the land use categories are intended to be general and illustrative (as opposed to specific and all-inclusive).

## 1. RESIDENTIAL LAND

The General Plan has three residential land use categories. Each of the General Plan residential land use designations is intended to correspond to a specific zoning described in the Benicia Zoning Ordinance.

**Table 2-1. Zoning District Equivalents for General Plan Residential Land Use Categories**

<b>GENERAL PLAN CATEGORY</b>	<b>ZONING DISTRICT</b>	<b>DENSITY RANGE (UNITS/ GROSS ACRE)</b>	<b>DENSITY RANGE (PERSONS/ GROSS ACRE)</b>
Low Density	RS	0.1–7	0.3–21
Medium Density	RM	8–14	16–28
High Density	RH	15–21	30–42

*Source: City of Benicia*

The City may apply a lower density in certain cases (for example, if environmental constraints make it physically impossible to construct the minimum density in a given land use category). Densities higher than the upper limit can be achieved through the use of density bonuses for lower-income housing. This applies to any development with a residential component.



**Table 2-2. Residential Land Within City Limits in Gross Acres, as of 1995**

DENSITY	DEVELOPED LAND	VACANT LAND
Low Density	1,156	145
Medium Density	275	8
High Density	144	5
<b>Residential Total</b>	<b>1,575</b>	<b>158</b>

Source: City of Benicia; Knox & Associates



**LOW DENSITY RESIDENTIAL**

This category provides for single-family detached residences in residential neighborhoods. The density range permitted in the Low Density category is 0.1 to 7 units per gross acre.



**MEDIUM DENSITY RESIDENTIAL**

This category includes multifamily housing where lot coverage remains relatively low. It includes large older homes that have been converted to duplexes as well as new apartments, townhouses, condominiums, clustered housing developments, and mobile home parks. Compared to Low Density, the Medium Density land use category permits more people to be housed on a given land area and also provides more flexibility

in the location and arrangement of buildings than is possible in most single-family detached developments. The density range permitted in the Medium Density category is 8 to 14 units per gross acre.



**HIGH DENSITY RESIDENTIAL**

This category permits a density range of 15 to 21 units per acre. High Density Residential is intended to increase housing opportunities by permitting more housing to be built on a parcel(s).

**2. COMMERCIAL LAND**

The Benicia General Plan separates commercial land into five categories: (1) Community Commercial (previously called Neighborhood Commercial), (2) General Commercial, (3) Downtown Commercial, (4) Waterfront Commercial, and (5) Business and Professional Office. Each of these categories is intended to accommodate a particular scale and intensity of commercial use and corresponds to a particular zoning category. Each category has a permissible floor area ratio (FAR) and restrictions on uses. Table 2-3 shows the breakdown of commercial land into these five categories.

*Table 2-3. Commercial Land (in gross acres) Within City Limits, as of 1995*

CATEGORY	FAR	DEVELOPED LAND	VACANT LAND
Downtown	2.0–2.4	19	5
General	1.2	51	102
Community (formerly “Neighborhood”)	1.2	6	0
Office	0.8–1.2	16	6
Waterfront	0.8–1.2	8	8
<b>Commercial Total</b>		<b>101</b>	<b>280</b>

Source: City of Benicia; Knox & Associates



**DOWNTOWN COMMERCIAL**

This category encourages a wide variety of retail businesses, restaurants, and lodging is encouraged. Offices and residences are encouraged above the first floor in order to establish a greater variety, intensity, and efficiency of use.<sup>2</sup> A higher intensity of development Downtown is envisioned by permitting a maximum FAR of 2.4—higher than in the other commercial districts. The 2.4 FAR, however, is permitted only if housing is included; the maximum non-residential FAR is 2.0.

<sup>2</sup> Resolution No. 87-31, 2/17/87



#### **GENERAL COMMERCIAL**

This category is intended to provide shopping and services for the community as a whole and for visitors coming from the freeways. Solano Square, Southampton Center, and Parkway Plaza are designated General Commercial. A small commercial center at East Fifth Street and Military East is also designated General Commercial to provide for auto service and parts, retail sales, and similar uses. General Commercial is intended to allow a wide range of commercial development, with the intensity of development limited by a maximum FAR of 1.2.



#### **COMMUNITY COMMERCIAL**

This category (previously called Neighborhood Commercial) is intended to apply to convenience commercial centers which are limited in size. Uses include retail and quasi-public uses. Community Commercial is the most restrictive of the commercial categories and has a maximum FAR of 1.2.



#### **BUSINESS AND PROFESSIONAL OFFICES**

This designation is intended to allow small-scale offices to serve as a buffer between residential uses and more intensive commercial areas. Offices in this category typically generate lower traffic volumes than offices in other commercial or industrial districts. A maximum FAR of 0.8 is allowed (increased to 1.2 if housing is included).



#### **WATERFRONT COMMERCIAL**

This category is intended to accommodate development with both a water orientation and historic character to create a pedestrian-scale commercial and residential area. Multifamily residences and live/work spaces are permitted in Waterfront Commercial. The commercial component is restricted to retail shops and services that directly support marina and boating activities or restaurants overlooking the water. A maximum FAR of 1.2 is permitted for projects that include housing above the ground floor; otherwise the FAR is limited to 0.8.

### **3. MIXED USE**



#### **DOWNTOWN MIXED USE**

This category includes residential, retail, office, public and quasi-public uses. Its purpose is to encourage a mix of compatible uses adjacent to the Downtown, upgrading of existing buildings, preservation and adaptive reuse of historic buildings, and introduction of new, compatible mixed use buildings. "Mixed use" includes the mixing of permitted activities within the same building or within separate buildings on the same site or on contiguous sites. Design standards will be developed to ensure that mixed use development is compatible with and contributes to the character of the street, the Downtown, and adjoining neighborhoods. The Downtown Mixed Use category permits a maximum FAR of 2.0.



**LOWER ARSENAL MIXED USE**

This category includes residential, live/work, office, retail, public and quasi-public, and limited industrial uses. The purpose of this category is to continue to encourage a mix of compatible uses in areas of the Lower Arsenal; to promote the upgrading of existing buildings, and the preservation and adaptive reuse of historic buildings; and to allow new, compatible buildings to house mixed use. The Lower Arsenal Mixed Use category permits a maximum FAR of 2.0.

**4. INDUSTRIAL LAND**

Before 1987, industrial land was designated either Heavy Industrial or Light Industrial. Since 1987, Benicia’s industrial land has been divided into three General Plan Land Use categories: (1) General Industrial; (2) Limited Industrial; and (3) Water-related Industrial. Table 2-4 shows how the industrial land is divided among these categories.

*Table 2-4. Industrial Land (in acres) within City Limits, as of 1995*

CATEGORY	FAR	DEVELOPED LAND	VACANT LAND
General Industrial	0.7	1,006	714
Limited Industrial	0.7	29	559
Water-related	0.7	178	92
<b>INDUSTRIAL TOTAL</b>		<b>1,213</b>	<b>1,365</b>

*Source: City of Benicia; Knox & Associates*



**GENERAL INDUSTRIAL**

The General Industrial land use category is the least restrictive of the three categories and is intended to allow a great deal of flexibility for industrial development. Over half of the Benicia Industrial Park is designated General Industrial. This includes nearly all of the Industrial Park north of I-780 and east of East Second Street. This category includes manufacturing, assembly, and packaging of goods and products from extracted, raw, and previously prepared materials and related industrial and commercial services. The maximum FAR permitted in this category is 0.7.



**LIMITED INDUSTRIAL**

This category includes manufacturing, assembly, and packaging of goods primarily from previously prepared (not raw) materials; wholesale, distribution, and storage facilities (including auto import, export, and storage); research and development facilities; and related industrial and commercial services. As it pertains to refining-related activities, this category also includes such uses as: fabrication areas, packaging

facilities (dry and liquid), quality control laboratories, and refining accessory uses such as maintenance shops, storage areas, shipping/distribution facilities and offices.

Several areas of the Benicia Industrial Park which border other types of land use are designated Limited Industrial to provide a buffer between the General Industrial areas and the rest of the City. Lower levels of traffic—particularly from heavy trucks—are expected in the Limited Industrial areas than in the General Industrial category. The Limited Industrial category permits a maximum FAR of 0.7.



#### **WATER-RELATED INDUSTRIAL**

This category includes port terminals and water-dependent, related industrial uses such as warehousing and storage; support transportation services; and ship maintenance and repair. The Water-related Industrial category is intended to protect the Port of Benicia from intrusion by non-water-dependent uses, to promote its long-term development, and to provide back-up land for port-related activities. The Water-related Industrial category permits a maximum FAR of 0.7.



#### **5. PUBLIC AND QUASI-PUBLIC LAND**

This category is intended to provide for a variety of uses serving the public including education, police, fire, water, and sewer. (Park and recreation facilities are included as a separate category under Open Space.) The Public/Quasi-public land use category allows facilities for City administration, safety, and health services; public and private schools; public utilities; and other public/quasi-public facilities. Facilities serving the public are scattered throughout the city. (Refer to Table 2-5 on the following page).

The maximum FAR for public/quasi-public facilities is established on a case-by-case basis through the use permit process of the Benicia Zoning Ordinance. If a use permit does not set a maximum FAR, then the maximum FAR of the abutting zoning district applies.

#### **6. OPEN SPACE**

State planning law requires cities to plan for “open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety.” The General Plan Land Use Diagram (found in the back pocket of this Plan) recognizes three categories of open space to meet these requirements:

**Table 2-5. Existing Public and Quasi-public Facilities Within City Limits, 1995**

<b>FACILITY</b>	<b>ACREAGE</b>
Administration	
City Hall	3.0
Post Office	1.9
School District Offices	6.0
Cultural/Recreational Facilities	
Library	0.8
Senior Center	0.3
Girl Scout House	0.5
Boy Scout House	0.5
Swim Club (Private)	1.6
Clocktower, Commandant's House	7.0
B.D.E.S. Meeting Hall	0.5
Public Access Trails	6.9
Tennis Court	0.3
Veteran's Hall	0.5
Municipal Utilities	
Water Treatment Plant	30.0
Sewage Treatment Plant	7.0
Corporation Yard	7.0
Building Maintenance Yard	0.2
Public Safety	
Police Station (part of City Hall complex)	
Fire Station #1	0.5
Fire Station #2	0.6
Public Schools	
Elementary	44.4
Benicia Middle School	18.7
Benicia High School	35.0
Private School	2.0
Child Care Centers	2.4
Churches	25.4
Cemeteries	32.7
Other Facilities	10.5
<b>Total Public/Quasi-Public</b>	<b>246.2</b>

Source: City of Benicia; Knox & Associates



**MARSH**

“Marsh” permits only educational and scientific research, low impact hiking, fishing, bird-watching, and similar activities offering public access to the shoreline.



**GENERAL OPEN SPACE**

General Open Space includes urban open space, such as publicly-owned open space, land dedicated for permanent open space in residential subdivisions, and open space for public health and safety, such as hillsides with slopes over 30 percent; and rural open space, such as open space for managed production of resources (such as mineral resources), and open space for conservation of natural resources (such as the Lake Herman watershed). Allowable open space uses include agriculture, horticulture, passive recreation, and mineral extraction in State-designated mineral resource areas only. General Open Space may lie inside or outside the Urban Growth Boundary.



**PARKS**

Parks provide land for the more intensive recreational uses. There are three park types in Benicia.

*Regional Park:* A Regional Park generally serves one or more communities and accommodates a variety of activities designed to enhance the use and experience of the natural environment. Uses may include trails, nature centers, picnic areas, and camping, if appropriate.

*Community Park:* A community park is designed to serve several neighborhoods. Community parks should accommodate a wide variety of activities and meet the needs of diverse users.

*Neighborhood Park:* A neighborhood park is designed to serve a residential population in close proximity to the park. Neighborhood parks should accommodate a variety of activities including playground activities, picnicking, and lawn games.<sup>3</sup>

**Table 2-6. Park Standards**

<b>PARK TYPE</b>	<b>ACRES/1,000 PEOPLE</b>	<b>SERVICE AREA</b>	<b>SIZE (ACRES)</b>
Regional Park	10.0	One hour travel	250–1,000
Community Park	2.5	Within 3 miles of all residences	30–100
Neighborhood Park	3.5	Within 1/2 mile of all residences	2–15

*Source: Benicia General Plan, 1993; Parks, Trails and Open Space Master Plan, Revised 1994*

<sup>3</sup> Parks, Trails, and Open Space Master Plan, pp. 3-1 through 3-3.

## GROWTH MANAGEMENT

The preceding pages describing the different land use categories and changes set the stage for how Benicia is to develop over the next 15-20 years. The Growth Management section creates the connection between land uses and growth by establishing the overarching goals, policies and programs for development in Benicia.

To reinforce these policy statements the plan defines an urban growth boundary (refer to Glossary.)

Urban Growth Boundary (UGB) is coterminous with the city limit line around the property at the end of Bantry Way (Zocchi property) to Lake Herman Road; it follows Lake Herman Road east to the western side of the 20-acre property owned by Northgate Christian Fellowship, then turns northwest and traces that property's boundary back to Lake Herman Road, then follows Lake Herman Road east to Interstate 680. At Interstate 680, the boundary turns north along the freeway, then west around the area identified as Area 9 on the Land Use Changes diagram. It then continues north on Interstate 680, then turns east to the north end of the 1999 City Limit on Goodyear Road.

The Urban Growth Boundary is an officially adopted and mapped line that separates the City's urban area from its surrounding greenbelt of open lands. It is a growth management tool that seeks to contain, control, direct, or phase growth in order to promote more compact, contiguous urban development. No urban development is allowed beyond the UGB except for public parks and public or private recreation uses that do not require urban facilities or services as defined in Policy 2.1.5.

Benicia's UGB reflects the City's commitment to focus growth and prevent urban sprawl. It recognizes the City's limited ability to extend services (i.e., sewer, water, police, *etc.*) and its desire to protect agricultural and ecologically sensitive land.

In addition, the UGB will help preserve key land forms which separate Benicia physically and visually from adjacent communities; protect and maintain the rural quality of Lake Herman Road and areas adjacent to it; concentrate future development in areas where services and infrastructure can be provided more cost effectively; strengthen First Street as the City's central commercial zone; guard against community health risks by avoiding encroachment into lands affected by the IT Panoche Hazardous Waste Disposal Facility; and prevent encroachment into and avoid land use conflicts with areas designated as a mineral resource area of regional significance (Syar Quarry).

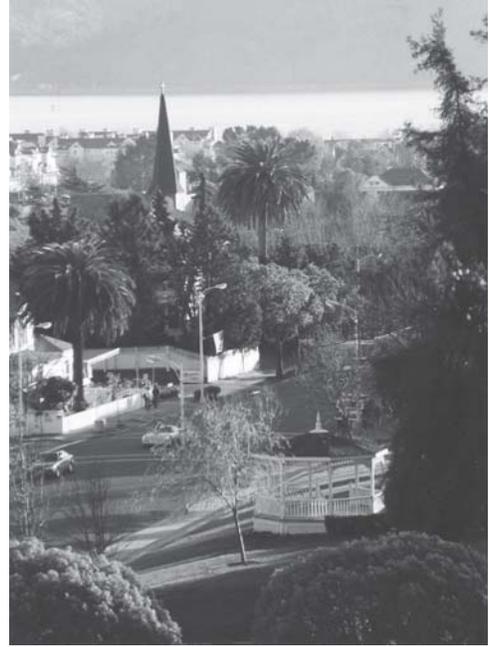


### **GOAL 2.1: Preserve Benicia as a small-sized city.**

"Small-sized city" refers to Benicia's open and uncluttered space, safe neighborhoods and streets, pedestrian-friendly streets, the "Main Street" character of First Street, open vistas of hills and water, historic sites and buildings, strong sense of community and

civic pride, good schools, well developed community facilities including parks and a library, low-crime, small town atmosphere, and numerous community-wide celebrations, cultural events, and family-oriented activities.

**POLICY 2.1.1:** Ensure that new development is compatible with adjacent existing development and does not detract from Benicia’s small town qualities and historic heritage, (and to the extent possible, contributes to the applicable quality of life factors noted above).



“Compatible” means “capable of existing together without detrimental effects.” This policy applies broadly and citywide to residential and nonresidential uses. Its purpose is to ensure harmonious development in terms of intensity, and architectural character. It is not intended to restrict new buildings or additions to exact duplications of styles or heights; nor is it intended to limit new uses or densities to those found in adjacent existing development. This policy also is not intended to restrict the conversion of single-family dwellings to apartments if the parcel is zoned for multifamily use and if there are other multifamily uses nearby.

*Program 2.1.A:* Adopt development guidelines that retain the scale and character of the city, preserve public view corridors, and reflect the subdivision and development patterns within existing neighborhoods.

**POLICY 2.1.2:** Make efficient use of land in new development areas consistent with the surrounding neighborhood.

**POLICY 2.1.3:** Maintain a visual and physical separation from the cities of Fairfield and Vallejo.

**POLICY 2.1.4:** Strive to preserve significant areas of vegetation and open space when approving development projects.

“Significant” can mean, for example, a single specimen tree, vegetation serving as habitat, or a grove of several native trees which enhance the canopy and scenic beauty of a neighborhood.

- POLICY 2.1.5:** An Urban Growth Boundary is established as shown on the General Plan Land Use Diagram in order to separate the City's urban area from its surrounding greenbelt of open lands and to maintain lands near Lake Herman and north of Lake Herman Road in permanent agriculture/open space use. No urban development is allowed beyond the Urban Growth Boundary. "Urban development" shall mean development requiring one or more basic municipal services including, but not limited to, water service, sewer, improved storm drainage facilities, fire hydrants and other physical public facilities and services.
- Policy 2.1.6:** No urban development beyond the Urban Growth Boundary shall be served by City water and/or sewer services.
- Policy 2.1.7:** The City shall promote compact urban development within the UGB and shall encourage development of public, semi-public, active recreational, and all other uses deemed desirable for the community inside the UGB.
- Policy 2.1.8:** Prior to December 31, 2023, the Urban Growth Boundary designated on the Land Use Diagram, this policy, Policies 2.1.5, 2.1.6, and 2.1.7 and the definition of Urban Growth Boundary in the Glossary, may be amended only by a vote of the people or pursuant to the procedures set forth below:

Exception I - Takings. the City Council may amend the Urban Growth Boundary if it finds, by at least a four-fifths vote and based on substantial evidence in the record, that:

- (1) The application of the Urban Growth Boundary policies would constitute an unconstitutional taking of a landowner's property, and
- (2) The amendment and associated land use designation will allow additional land uses only as necessary to avoid said unconstitutional taking of the landowner's property.

Exception II - Housing Supply. The City may grant an exception from the requirements of the Initiative where it determines that doing so is necessary to comply with State law governing the provision of housing. The City may do so only if it first makes each of the following findings based on substantial evidence in the record:

- (1) A specific provision of State law requires the City to accommodate the proposed housing, and
- (2) No feasible alternative exists that would allow for the required units to be built without siting some or all of them outside the Urban Growth Boundary.

Exception III - Reorganization. The General Plan may be reorganized, readopted in different text and/or format, and individual provisions may be renumbered or

with the requirements of State law, but Land Use Element policies relating to the Urban Growth Boundary shall continue to be included in the General Plan until December 31, 2023, unless earlier repealed or amended pursuant to the procedures set forth above or by the voters of the City.



**GOAL 2.2:**            **Maintain lands near Lake Herman and north of Lake Herman Road in permanent agriculture/ open space use.**

**POLICY 2.2.1:**        Protect and maintain agricultural and rural land uses, hillsides, two-lane curving roads, watershed, riparian corridors and upland grasslands.

**POLICY 2.2.2:**        Avoid health risks associated with the inactive IT Panoche Hazardous Waste Facility and land use conflicts with the Syar Quarry.

*Program 2.2.A:*        Initiate a variety of planning, regulatory, and financial measures to ensure permanent protection of agricultural and open space uses near Lake Herman and north of Lake Herman Road.

*Program 2.2.B:*        Acquire property, development rights, or easements to preserve open space.

*Program 2.2.C:*        Evaluate incorporating the Northern Area into the Tri-City and County Open Space Area.



**GOAL 2.3:**            **Ensure orderly and sensitive site planning and design for large undeveloped areas of the City, consistent with the land use designations and other policies in this General Plan.**

**POLICY 2.3.1:**        Require a Master Plan for new industrial and business park developments on properties under common or single ownership which aggregate to more than 40 acres.

Master plans will encourage the best and most effective use of the properties and will give the City an idea of how and when the various parcels or parts of parcels will be developed and when public facilities will be needed. The industrial properties to which this policy is most likely to apply are listed below and are shown on Figure 2-2. The five industrial properties as of 1995 are: The Seeno properties; the Exxon undeveloped area; Pine Lake north of I-780; the Port south of the bridge; and the Port north of the bridge.

The master plan requirement also applies to other large properties, which are not listed or mapped below but which may in the future be purchased or assembled for development or private redevelopment. Such master planning may be initiated by the Planning Commission, the City Council, or private property owners.

*Program 2.3.A:* Ensure adequate funding is available for the long-term maintenance of undeveloped areas preserved when approving land divisions.

**POLICY 2.3.2:** Support land divisions where existing buildings with historic or architectural significance are retained and/or improved rather than demolished.



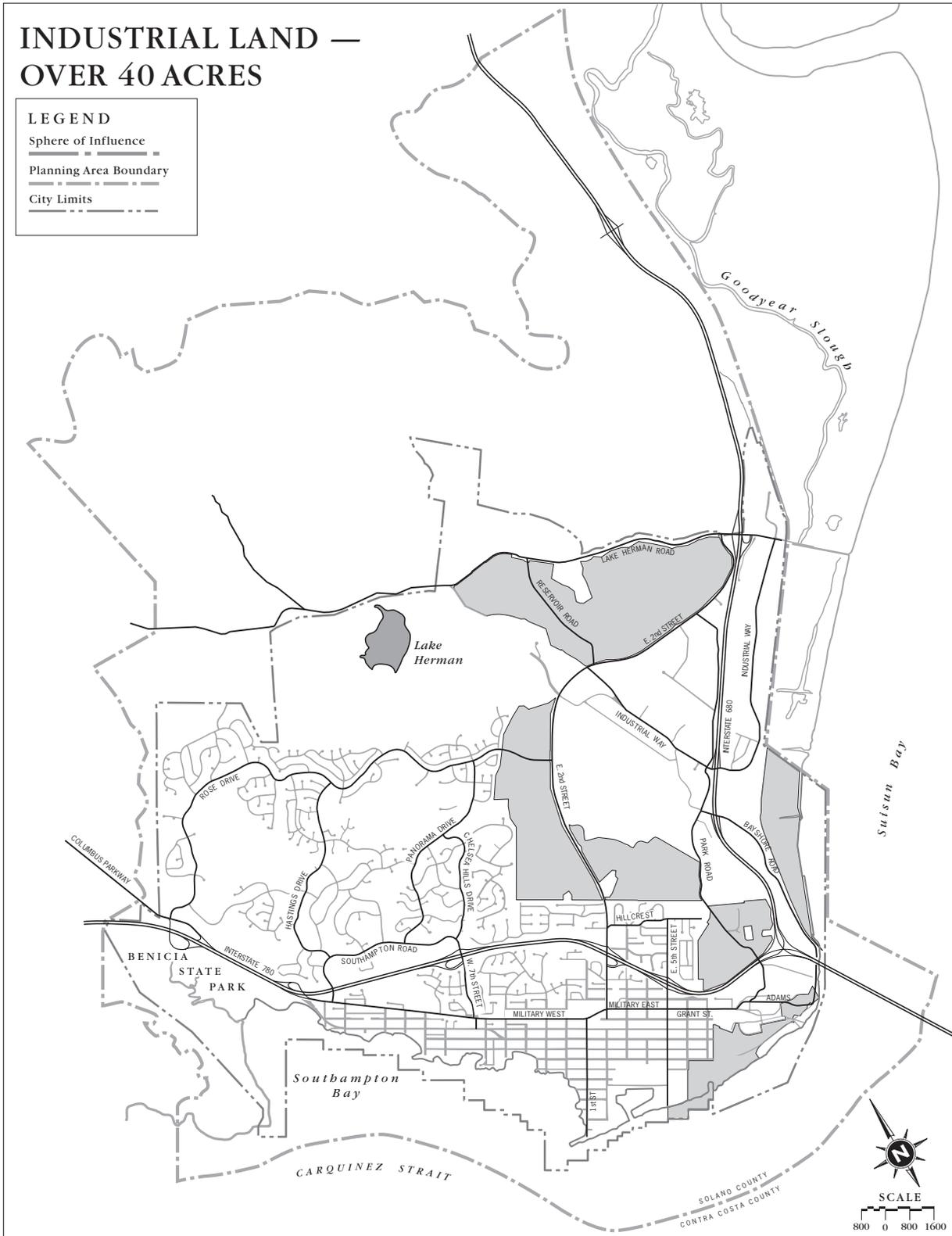
**GOAL 2.4: Ensure that development pays its own way.**

State law allows cities to assess fees to ensure that development pays for itself; however the law also requires a nexus between fees imposed on developers and the public improvements funded by those fees.

**POLICY 2.4.1:** Ensure any new development to be fiscally and financially sound and pay its own way with respect to City and School District capital improvements.

The objective is that neither the City nor the School District will be expected or required to use general funds to provide capital improvements for private development unless a project produces substantial public benefits and amenities in which the City or School District may want to participate.

*Program 2.4.A:* Monitor development to ensure it does not overburden the City's infrastructure.



**Figure 2-2. Industrial Properties to which Policy 2.3.1 (Master Plan) Applies, as of 1999**



## **B. ECONOMIC DEVELOPMENT**

This section of the plan contains five subsections that direct the more urban aspects of how the community should develop. Each subsection focuses on a particular type or area of economic development within the community: industrial development, port development, the Historic Arsenal area, the Downtown area, and other commercial development.

The Economic Development section begins with a discussion of the City’s economic strengths and challenges, followed by goals, policies and programs for each of the five types or areas of economic development. Background information about each economic development area or type precedes the goals, policies and programs for that subsection.

### **1. ECONOMIC OPPORTUNITIES AND CHALLENGES**

Benicia is a unique community that offers a “small town” residential and commercial environment in the foreground of a large industrial concentration. While Benicia is part of the Solano County market, its location along the Carquinez Strait, views of the water, and its active Port give the City more economic development opportunities than some of its landlocked competitors. The City also has a strong historic and cultural base, and the historic buildings in the Downtown and Arsenal area add to Benicia’s charm and distinction.

The City of Benicia enjoys many economic advantages over similarly-sized cities in the greater Bay Area. It has a significant concentration of economic activity in the Port and the Benicia Industrial Park (BIP), which includes the Exxon Refinery. These are considered “heavy industrial” uses and provide a strong economic base for the City. In addition, businesses that support the refinery industry need to be located nearby, and many choose Benicia given its location and large concentration of like businesses.

The tax revenues that the BIP and other heavy industrial uses generate allow the City to provide a relatively high level of public services, including its own library system. As a result, the Economic Development Goals, Policies, and Programs emphasize the importance of protecting existing heavy industrial uses.

Many also believe, however, that Benicia can capitalize on its central location by diversifying its economy and attracting more high-technology firms and tourists. Although a radical shift in the types of businesses that locate in the city over the next 20 years is not expected, more non-industrial activities are desired in the future. Measures to increase the diversity of industries and land uses therefore can also be found in the Economic Development Goals, Policies, and Programs.

#### **BENICIA’S COMPETITIVE STRENGTHS**

From an economic standpoint, Benicia has many competitive strengths. The fact that the City’s industrial vacancy rate is about 6 percent validates this position; other surrounding communities have industrial vacancies from 10 to 17 percent. The City has a well-developed industrial park (BIP), which is geographically compact and topographically separated from the rest of the City. The Port, leased, owned, and operated by Benicia Industries, is over 200 acres and complements many of the activities found in the BIP. The Exxon refinery has drawn over the years a series of support and related industries to the City which together represent an important agglomeration of economic activity. One advantage of the BIP’s size and location is that businesses perceive that their industrial activities will be buffered from potential conflicts with other uses. Exxon owns about 400 acres of land west and south of their facility.

In summary, Benicia’s assets that attract businesses include:

- Central location (*i.e.*, highway accessibility to markets in the Bay Area, Sacramento, and Northern California).
- Presence of major manufacturing and refineries that attract similar types of businesses.
- Historic buildings and places.
- View of the water and hills.
- Some developable commercial vacant parcels (although high-priced).
- Private redevelopment potential and mixed use projects.
- Good transportation and access.

- Supportive local government/business climate.
- Municipal fiscal soundness.
- Highly skilled, reliable, dependable, and productive labor force.
- Quality of life (*e.g.*, low crime, good public schools, warm climate, *etc.*)

#### **BENICIA'S COMPETITIVE CHALLENGES**

The City also faces a number of weaknesses in attracting businesses. These include the following, many of which are mentioned in the City's 1995 Economic Development Strategy (Resolution 95-10):

- No public transportation in the BIP industrial area.
- Limited vacant industrial and commercial sites.
- Limited very high and low income housing.
- High rent for Downtown real estate.
- Reliance on one type of industry for major business tax revenues.

Although development fees in Benicia may be higher than in other regions in California and nearby states, they are comparable to the average fees in Solano County and other competitive markets. Industrial and residential fees are only slightly higher than the average, and retail fees are slightly lower than the average.

While it is important to keep development costs low, it is equally important to provide adequate infrastructure and maintain it. A significant number of industrially-zoned parcels require investment in infrastructure in the next 20 years if these sites are to be competitive. This infrastructure could be provided by the City or by developers. Either way, Benicia will need to facilitate the creative financing mechanisms to provide infrastructure in a timely fashion. There is also a need to invest in existing infrastructure that cannot be funded through development impact fees or special assessments under existing law (Government Code §66000 *et seq.*, popularly known as AB 1600). A funding program (*e.g.*, for a landscape and lighting district) should be developed to ensure annual maintenance and replacement of infrastructure to keep the city's non-residential areas competitive.

Although the lack of higher value or executive housing may be a perceived weakness to some in the community, the lack of housing available to those who work in Benicia will have a much greater impact on economic development in the long run. The greater the amount of housing for workers in the BIP, the more competitive the City will be.

#### **BENICIA'S FISCAL STATUS**

All communities have their weaknesses and strengths. While Benicia has several perceived economic weaknesses, it also has many economic strengths. Overall, the City's economy, while focused on a few industries, is strong and competitive.

The City worked hard to reduce or hold constant expenditures over the five years 1990-1995 in order to respond to the loss of revenues from property tax diversions to the State and from a reduction in other revenues. Once the outstanding debt from the community park development is repaid and the General Plan update is complete, the Finance Department projects positive fiscal balances starting in 1997-98. Future increases in property taxes may be limited unless additional capacity for development is created. The City will need to work hard to retain existing businesses, to attract new sales-tax generating uses, and to continue its cost containment measures.

A review of per capita expenditures for cities of similar size shows that Benicia residents enjoy a high level of municipal services, which is a direct result of the amount of revenues generated by industry. To continue to enjoy these services, the City will need to protect and enhance business and economic activity in both the BIP and Port areas. It will also need to encourage economic expansion in the Downtown and Arsenal areas. Figure 2-3 shows the projected General Fund Revenues for 1999-2000.

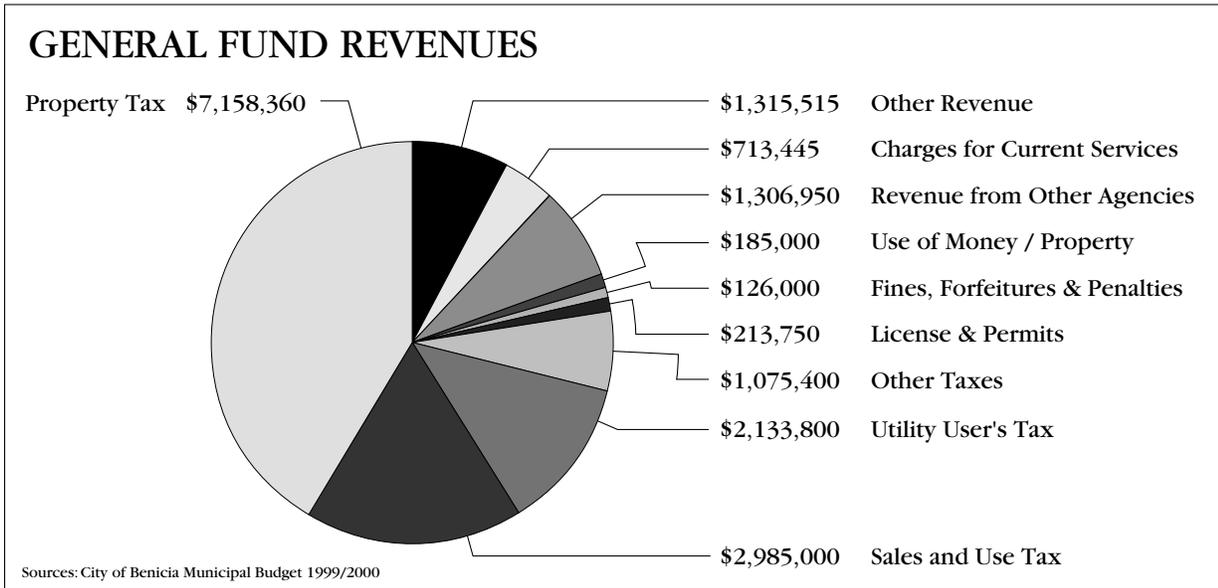


Figure 2-3. City of Benicia General Fund Revenues

## 2. ECONOMIC DEVELOPMENT GOALS, POLICIES, AND PROGRAMS

Benicia has an aggressive economic development program and has attracted several large companies to the Benicia Industrial Park (BIP) and elsewhere in the City. An Economic Development Strategy was adopted by the City in 1995. The Strategy focuses on (1) business retention and expansion, and (2) business attraction and incentives, and (3) outlines a set of policies and recommended actions. Studies have shown that businesses wishing to expand chose to stay in Benicia rather than move out of state.<sup>4</sup> Reviews of recent expansion or new leases within the BIP confirm that these economic development efforts are working.

The City's Economic Development Department also recently created an Industrial Development Authority to issue tax-exempt revenue bonds.<sup>5</sup> Bonds have been issued to assist major employers and space users and keep them in the City. The City also created a local hiring service to help connect local business with local labor.

The goals, policies, and programs in this section address several points: They support continued internal growth and development of the industrial park and its port; they promote diversification of Benicia's economy; and they seek to expand appropriate commercial activity in the Arsenal and Downtown.

### CITYWIDE ECONOMIC DEVELOPMENT



**GOAL 2.5: Facilitate and encourage new uses and development which provide substantial and sustainable fiscal and economic benefits to the City and the community while maintaining health, safety, and quality of life.**

Sustainable development maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.

This goal is the heart of the entire General Plan. It is a citywide expression of urban development policy. Nearly every policy and program in the General Plan, in some manner, serves to implement this goal.

<sup>4</sup> "1st Quarter 1995 Industrial Market Overview, Greater East Bay Market," Grubb & Ellis Research Services Group (June 1995).

<sup>5</sup> These are private activity bonds that are sold to fund a specific project that has a dedicated private revenue source with which to repay the bonds and interest. The interest on the bonds is not taxable, and thus encourages the private market to purchase public bond issues. This is a typical public funding mechanism.

- POLICY 2.5.1:** Diversify the mix of economic development programs in the city to include new programs that address Downtown revitalization, tourism, waterfront development, and clusters of related businesses.
- Program 2.5.A:* Consider developing a labor force database as part of the Business Attraction, Expansion, and Retention Program which includes information on labor force costs by occupation and industry sector, turnover rates, productivity, reliability, and other factors. Maintain and update the database annually.
- Program 2.5.B:* Target business attraction efforts toward firms that pay high wages and with jobs that relate to the skills and education levels of Benicia residents.
- Program 2.5.C:* Evaluate future uses on a cost/revenue basis, taking into account economic diversity for the long term and environmental and community costs and benefits.
- Program 2.5.D:* Continue to offer incentives for locating in Benicia to businesses that maximize jobs or long-term net revenues to the City of Benicia, or both.
- Program 2.5.E.:* Develop business incentives that can be used to attract new businesses (e.g., fee deferral program, use of public financing when appropriate) and performance criteria to ensure that benefits are generated in line with incentives provided.
- Program 2.5.F:* Continue to maintain and update an economic development strategy which focuses on both the acquisition of new businesses and retention of existing businesses.
- Program 2.5.G:* Continue to implement the programs and actions proposed in the City’s latest Economic Development Strategy.
- Program 2.5.H:* Develop an “economic development web page” for Benicia with pertinent economic and demographic information, and profiles of key development sites and vacant buildings available for new businesses.
- Program 2.5.I:* Conduct a bi-annual review of fee burdens for key land uses in Benicia and competing jurisdictions in the region to ensure that Benicia’s fees are sufficient and competitive and do not create a deterrent to beneficial development.
- Program 2.5.J:* Expand the City’s economic development strategy to address the potential for eco-tourism (e.g., related to marshlands), recreation, artists, cultural, and historic elements. Conduct a study of the relative merits and strengths of each of these assets in Benicia.

**INDUSTRIAL DEVELOPMENT**

As of 1995 there were 1,213 developed acres of industrial land in the city, occupying 42 percent of all developed land. A large part of the existing industrial acreage is located within the Benicia Industrial Park and is categorized as General Industrial use. This is where the heavy industrial uses are located, as well as industrial uses that have a large space demand.

There are approximately 600 companies within the BIP, with combined employment in excess of 6,500 workers. The top 10 employers in the BIP provided a total of 2,250 jobs in 1997, or about 22 percent of the total estimated employment in Benicia. The largest employer in the Industrial Park, with 400 employees, is Exxon Company USA, a petroleum refinery. Other large employers include: Corey Delta Construction, Underground Construction, West Coast Beauty Supply, Alamillo Steel, Rockridge Technology, and the Coca-Cola Bottling Company.

The second largest category of existing industrial land is 270 acres zoned for water-related industrial use. This category applies to the Benicia Port area, most of which is owned by Benicia Industries.

The remaining existing industrial land (29 acres) is developed for Limited Industrial uses. These include industrial office centers and research and development (“R&D”) facilities.



**GOAL 2.6:**                    **Attract and retain a balance of different kinds of industrial uses to Benicia.**

**POLICY 2.6.1:**                Preserve industrial land for industrial purposes and certain compatible “service commercial” and ancillary on-site retail uses.

“Compatible,” as defined in the *California General Plan Glossary*, means “capable of existing together without conflict or detrimental effects.” Compatibility will often be decided on a case-by-case basis by the Planning Commission and City Council.

“Service commercial” uses are those that accommodate citywide and regional services that usually are inappropriate in neighborhood or pedestrian-oriented shopping areas. Such services generally require automotive access for customer convenience, servicing of vehicles or equipment, loading or unloading, or parking of commercial vehicles.

**POLICY 2.6.2:**                Other land uses should not adversely affect existing industrial and commercial land uses.

*Program 2.6.A:*                Where General Plan amendments propose to convert industrial land to non-industrial or non-commercial uses, require the preparation of a fiscal and economic impact analysis to ensure that the conversion does not adversely affect the city’s long-term economic development, or the economic vitality of existing industrial/commercial uses.

- Program 2.6.B:* Develop criteria for evaluating whether a proposed non-industrial/non-commercial use would impact the viability of existing industrial/commercial uses. Use the criteria to evaluate non-industrial and non-commercial projects proposed in the Industrial Park.
- POLICY 2.6.3:** Facilitate continued development of the Industrial Park. Especially encourage general industrial uses to locate in the basin northeast of Downtown (around Industrial Way between East Second and the freeway).
- Program 2.6.C:* For lands designated limited industrial, reduce the length of time and number of steps required for development proposals to proceed, consistent with CEQA, community development policies and ordinances, and the design review process for general industrial lands.
- POLICY 2.6.4:** Link any expansion of Industrial land use to the provision of infrastructure and public services that are to be developed and in place prior to the expansion.
- Program 2.6.D:* Continue to update the overall capital improvements program and infrastructure financing plan for the Industrial Park and other major industrial areas.
- Program 2.6.E:* Develop Industrial Park infrastructure and public services standards, as approved by the City Council. (See also Program 2.28.A.)
- POLICY 2.6.5:** Establish and maintain a land buffer between industrial/commercial uses and existing and future residential uses for reasons of health, safety, and quality of life.
- Program 2.6.F:* Use topography, landscaping, and distance as a buffer between Industrial Park uses and residential uses.

A buffer is “adequate” to the extent that it physically and psychologically separates uses or properties so as to shield, reduce, or block one set of properties from noise, light, or other nuisances generated on or by the other set of properties. Buffers will be determined on a case by case basis.



- GOAL 2.7:** **Attract and retain industrial facilities that provide fiscal and economic benefits to—and meet the present and future needs of—Benicia.**
- POLICY 2.7.1:** Attempt to attract high-wage and high-revenue producing companies to Benicia.

This policy applies to emerging occupations such as secondary materials industry, wine industry, alternative transportation, environmental technology, fitness, and tourism. The intent of this policy is to encourage Benicia's participation in studies by the Solano Economic Development Corporation (SEDCORP) related to attracting high-tech jobs and marketing efforts targeted to Benicia.

*Program 2.7.A:* Conduct a study of the City's competitiveness for high-wage businesses. Based on the results, determine which types of high-wage businesses could realistically be attracted to Benicia and develop an appropriate business attraction strategy.

#### PORT DEVELOPMENT

As discussed in this section the Port of Benicia has two aspects - the Port as a privately operated business and the Port as an important geographic locale in Benicia. The goals, policies, programs are intended to address both aspects of the port.

The Port of Benicia is partially owned by the City and partially owned by Benicia Industries, Inc., a private company. The City leases portions of the Port to Benicia Industries, who in turn leases facilities within the Port to industrial tenants on portions of the approximately 644 acres it controls in Benicia. In 1999, Benicia Industries specializes in the shipment of automobiles and petroleum products.



**GOAL 2.8:** **Maintain the viability of the Port now and in the future to benefit the City of Benicia.**

**POLICY 2.8.1:** Avoid encroachment by future incompatible uses, and where possible, reduce encroachment from existing incompatible uses, in concert with Policy 2.11.1.

*Program 2.8.A:* Ensure that definitions of "water-related industrial" and "water-front" land uses are consistent with "water dependent" uses as defined in the Seaport Plan.

Refer to Appendix D for discussion of Seaport Plan and related tidelands issues.



**GOAL 2.9:** **Ensure adequate land for port activity.**

*Program 2.9.A:* Work with the Port to evaluate the future level of port activity and need for land in order to sustain an economically viable Port operation.

**POLICY 2.9.1:** Encourage and create opportunities and methods for cooperative planning of the Port, Arsenal, and Pine Lake.

Rather than just reacting to specific development proposals, the planning should be "pro-active" and "master-planning" in nature. The primary criteria are that the process is conducted in public and that all stakeholders are represented. At a minimum,

“stakeholders” should include City officials, representatives of Benicia Industries, and the general public. Depending on the particular planning project, stakeholders might also include representatives of Caltrans, the Art Community, and the Chamber of Commerce.

“Master Planning” for these areas would evaluate, among other things, the historic preservation of buildings, public access, circulation, affordable housing, live-work space, infrastructure needs (train station, new bridge ramps and interchanges, and ferry service), potential for economic development and revenue enhancement for the City, reconsideration of uses in the lower Arsenal, restrictions on hazardous materials and waste, and improving the public process for project approval.



**GOAL 2.10: Provide for carefully-defined visual and physical public access where security and safety considerations permit.**

This goal is not intended to conflict with other goals and policies encouraging port viability and industrial growth.

*Program 2.10.A:* Explore the feasibility of public access to and providing recreation use in the Port in a manner which does not compromise the economic viability or safe operation of the Port.

For a discussion of public trust lands in relation to the Port, refer to Appendix E.

**HISTORIC ARSENAL**

The Arsenal area is characterized by older, historic buildings, and a multiplicity of uses and tenants, including studios, small professional offices, and small industrial activities, such as cabinet making. The Arsenal fronts on the Port of Benicia and is a distinct area within the Benicia Industrial Park.



Many buildings in the Arsenal area are not used—or are underutilized—and could be

converted to various uses. A number of the buildings, however, do not meet the current Uniform Building and Fire Codes and would be costly to convert or upgrade. The area also needs infrastructure improvements (including roads and signs) to create a distinct sense of place.

The artist community in the lower Arsenal is a small yet strong economic force in the City that should be supported and expanded while considering its context in, and the

operating needs of, the Port. This part of the City is a mixed-use area. The Arsenal adds character and diversity to the City and allows for alternative living and working arrangements quite different from those available in other parts of the community.



**GOAL 2.11:**            **Encourage the retention and continued evolution of the lower Arsenal into a historic/cultural/commercial/industrial center of mutually compatible uses.**

The “lower Arsenal” is south of I-780, between the freeway and the water-related industrial lands.

**POLICY 2.11.1:**        Retain and expand the mix of compatible and balanced uses in the lower Arsenal area.

**POLICY 2.11.2:**        Continue to allow live/work uses in the lower Arsenal where it can be demonstrated that adequate buffers exist, including noise buffers, and that the presence of residents would not significantly constrain industrial operations, including the flow of goods and materials.

**POLICY 2.11.3:**        Support the development of the Pine Lake area as an attractive, aesthetic gateway with a water feature.

The Pine Lake area is located immediately north of I-780 and west of Park Road.

*Program 2.11.A:*        Require protection of dramatic views of the strait and the incorporation of a gateway/water feature into any development plans for the Pine Lake area.

A Development Agreement has been adopted for the Pine Lake area. Refer to Appendix F.

## **DOWNTOWN**

The major commercial concentration in the City is Downtown. Nineteen acres of developed commercial uses around the First Street Corridor stretching to the waterfront are designated Downtown Commercial. This designation was created specifically for the First Street Corridor area and is meant to emphasize the importance of First Street as the Downtown. The area has a mixture of office, retail, and residential development.

While the Downtown shares many of the problems faced by older downtowns throughout the country (e.g., vacant lots, underutilized land, and competition from suburban shopping centers), its natural features and historical significance greatly increase its potential for economic development. Major points of interest include the third State Capital of California, the western terminus of the Transcontinental Railroad (the train depot is being renovated), and an accessible waterfront with striking views



of the Carquinez Strait and surrounding hills. The area is a community gathering place that attracts tourists and local residents to its historic sites, shops, restaurants, farmers’ market, and special events. Adjoining the Downtown are a marina and several medium density condominium developments.

The General Plan encourages development of the Downtown in a manner that preserves its small-town characteristics. The Downtown provides a human scale and mix of building types; open, scenic vistas; a relaxed and pleasant “sidewalk” atmosphere; and minimum vehicular traffic. It offers social and recreational opportunities and points of interest to residents and visitors. The historic character of Downtown is enhanced by adjacent alleys, residential streets that lead to the waterfront, specialty and antique stores, a waterfront promenade, and a fishing pier at the end of First Street.

The intent of the following goals and policies is to allow a mix of uses in the Downtown , including residential;

provide easy circulation by transit and on foot; develop smooth, functional connections to other parts of the community; provide nighttime activities to create safer streets; make a commitment to public life Downtown by providing public gathering spaces; recognize the historical importance of the area; improve surrounding neighborhoods; cultivate a unique identity that will attract visitors; invest public funds in street improvements, housing, public transit, and cultural activities; actively recruit private investment and incentives to encourage development on First Street; and encourage cooperation in the management of the Downtown area.



**GOAL 2.12: Strengthen the Downtown as the City’s central commercial zone.**

**POLICY 2.12.1:** Emphasize retail sales and service businesses along First Street, preferring retail commercial on the street level and encouraging other commercial, office, and housing as important supporting uses on upper floors.

*Program 2.12.A:* Consider improvements to Solano Square to make it more pedestrian friendly.

*Program 2.12.B:* Work to attract economically viable businesses that will create night-life Downtown such as restaurants, cafes, movie theaters, and other entertainment uses.

*Program 2.12.C:* Continue business recruitment and marketing efforts for Downtown. Provide promotional information on Benicia’s

economic and demographic profile, available sites and building space, a directory of support services, and an expedited approvals program.

Many of these programs are already carried out by the City based on the City's adopted Economic Development Strategy (Resolution 95-10). Also, the City funds Benicia's Main Street Program which provides some of the services listed above.

*Program 2.12.D:* Develop public/private partnerships to implement financing mechanisms such as a Business Improvement District to fund capital improvements and repairs to Downtown.

*Program 2.12.E:* Retain a permanent Main Street Program.

*Program 2.12.F:* Promote additional civic and compatible public and private uses in the Civic Center area.

**POLICY 2.12.2:** Permit a mix of residential and commercial uses including detached single-family homes and live/work quarters in the first row of blocks east and west of First Street. Allow small retail commercial businesses on parcels closest to First Street, and small, less intense uses (such as offices, personal services, and bed-and-breakfast establishments) anywhere within the block.

The intent of this policy is to encourage retention of the existing small-scale, fine-grain development based on historic lot sizes Downtown.

*Program 2.12.G:* Review and modify the zoning ordinance, as needed, to accommodate a mix of uses in the blocks immediately east and west of First Street.

**POLICY 2.12.3:** Seek to make Downtown a thriving and vigorous community center offering a variety of activities and attractions for residents and visitors.



- Program 2.12.H:* Continue to promote special events in the Downtown such as a farmers' market, street fairs, art and music festivals. Encourage events that remain open in the early evening. (See policies in Noise section.)
- Program 2.12.I:* Work with existing restaurants and cafes to provide sidewalk food service where the service will not impede pedestrian flow and where adequate sidewalk space exists.
- Program 2.12.J:* Maintain public parks, streets, and sidewalks located Downtown in a clean and safe condition.
- Program 2.12.K:* As the budget allows, provide amenities such as additional benches along First Street and in adjacent public areas; drinking fountains, public art, shade trees and arbors.
- POLICY 2.12.4:** Create a social, recreational, and economic anchor at the waterfront end of First Street.
- Program 2.12.L:* Use the Urban Waterfront Restoration Plan to guide the planning and development of public waterfront improvements; when siting private development; and when designing public access between commercial uses and the waterfront.
- Program 2.12.M:* Investigate the feasibility of a multi-use Community Center.
- Program 2.12.N:* By the end of the year 2000, decide on the feasibility of restoring three City-owned structures: —the former Southern Pacific Railway Depot and Jurgensen's Saloon, and the Von Pfister Adobe.
- Program 2.12.O:* Establish a permanent public green on the waterfront south of B Street at Second Street.
- This public green is included in the City's 1990 Waterfront plan as a "marina green."
- Program 2.12.P:* Investigate the possibility of developing a west side marina.
- Program 2.12.Q:* Develop a "tourist-oriented web page" that includes photos and information about Benicia as a tourist destination, such as information on lodging, historic places, restaurants, artists galleries and studios, and recreational and natural resources.
- Program 2.12.R:* Continue to support promotional maps for visitors that identify locations of restaurants, services, specialty retail, recreational, and other facilities that cater to visitors and tourists.

#### **OTHER COMMERCIAL DEVELOPMENT**

Within the City in 1995, about 86 acres were developed for commercial use. Over half of that acreage is designated for "general commercial"—a broad designation that

includes stores or services that are meant to serve the entire community plus the public traveling through the area. Areas designated for general commercial include a section in the lower Arsenal, an area around East Fifth Street and Military East, Solano Square, and Southampton Road. The other major commercially developed area is the 19 acre Downtown, which was discussed in the previous section.

Only three acres are developed for “neighborhood commercial” uses in the entire city. The remaining developed commercial acreage is used for office (nine acres) and waterfront commercial (four acres). In general, the city’s existing commercial uses are limited in size, acreage, intensity, and sales volume.



**GOAL 2.13: Support the economic viability of existing commercial centers.**

**POLICY 2.13.1:** Direct new commercial ventures first, towards Downtown, and second, to other existing economic centers (instead of dispersing resources to new areas).

*Program 2.13.A:* As part of the Business Attraction, Expansion, and Retention Program, maintain an available commercial space and site database with information on size, lease rates, tenant improvements, etc., and make it readily available to prospective businesses.

**POLICY 2.13.2:** Preclude extension of the existing commercial development east along Military East and south along East Fifth Street.

## C. CIRCULATION

Government Code §65302(b) states that the general plan shall include a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan. The requirement for correlation is particularly important, since it recognizes the close connections between the different elements of the general plan.

The circulation element describes facilities for the movement of people and goods throughout the City. It includes a plan of the streets, highways, rail, and water transportation facilities designed to serve the community. It also discusses county and regional transportation planning programs and the future of transportation in Benicia. The last section presents the circulation goals, policies, and programs.

### 1. COUNTY AND REGIONAL TRANSPORTATION FRAMEWORK

The City's authority over the provision of transportation services in Benicia is determined by regulations at the local, State and federal level. The City's transportation decisions are coordinated on a countywide level through Solano County's Congestion Management Program (CMP) and the Solano Transportation Authority (STA). Regional transportation decisions for the nine county Bay Area are made by the Metropolitan Transportation Commission (MTC), which derives its powers from State and federal transportation funding programs.

#### CONGESTION MANAGEMENT AGENCY

The STA is the designated congestion management agency (CMA) for Solano County and the cities. State law requires the Authority to adopt and implement a *Congestion Management Program (CMP)*, which contains the procedures for managing congestion created by growth and identifies all transportation projects proposed for State and federal funding, for seven-year planning periods.

#### METROPOLITAN TRANSPORTATION COMMISSION

MTC is the agency designated with the decision-making authority for the Bay Area for regional transportation issues. MTC prepares a Regional Transportation Plan which describes transportation investments in the Bay Area for the next 20 years. These transportation investments are directed at the "Metropolitan Transportation System" (MTS) which includes the regionally significant components of the Bay Area's transportation network. Components of the MTS located in Benicia include the freeways, East 2nd Street, Lake Herman Road, Military between I-780 and East 2nd St., the Port of Benicia, Benicia Transit Services, and the Union Pacific rail line. State and federal statutes require that MTC find a project or program consistent with the Regional Transportation Plan before allocating certain State funds and any federal funds for that project or program.

## 2. THE MOVEMENT OF PEOPLE

### PEDESTRIAN AND BICYCLE MOVEMENT

Certain areas of Benicia are very walkable. The Downtown, lower Arsenal, and waterfront areas provide closely spaced land uses and relatively flat topography, as well as a pleasant physical environment. The northern residential and industrial areas are less pedestrian-friendly, with hilly terrain and longer distances between uses.

Bikeways are classified based on the Caltrans classification system for off-road (Class I) and on-road (Class II and Class III) facilities, as described in Table 2-7.

**Table 2-7. Classification of Bicycle Facilities**

CLASS I	Bicycle Path	Paved path separated from automobile traffic by a curb and landscaped strip, or routed through an open space area. Motorized vehicles are prohibited; may be combined with pedestrian trail.
CLASS II	Bicycle Lane	Paved extension of a roadway designated exclusively for bicyclists.
CLASS III	Bicycle Route	Signed routes where bicycles share roadways with vehicular traffic; no separate right-of-way is provided for bicyclists.

Benicia's Bicycle and Multi-Use Trail System is shown in Figure 2-4. This system, which shows both existing and planned future facilities, was developed for the Benicia Parks, Trails and Open Space Master Plan in 1994. The City's existing bicycle facilities serve primarily the waterfront, western Downtown, and northern residential areas. Extensions and connections are planned along most of the arterial roadways and some collector streets, as well as off-road alignments, to provide a fully connected system.

### PUBLIC TRANSIT

Three forms of public transit serve Benicia residents: buses, passenger rail and ferries. The following provides an overview of the services currently available in Benicia.

#### Bus Transit

Benicia Transit is an intercity fixed-route service which provides service to the ferry terminal, the Lemon/Curtola Park and Ride stop in Vallejo, and the Sun Valley Mall as well as the Pleasant Hill BART station in Contra Costa County.

In addition to its fixed-route transit services, Benicia funds a local Dial-a-Ride program open to the general public. The service is provided under contract with a transportation services company. Benicia also participates in the intercity "Run

## BICYCLE AND MULTI-USE TRAIL CIRCULATION SYSTEM

Legend:	Existing	Future
Class III Bikeway	—	- - - - -
Class II Bikeway	—	· · · · ·
Class I Bikeway	—	▬▬▬▬▬
Improved / Interpretive Trails	n/a	· · · · ·
Bay Trail	▬▬▬▬▬	▬▬▬▬▬

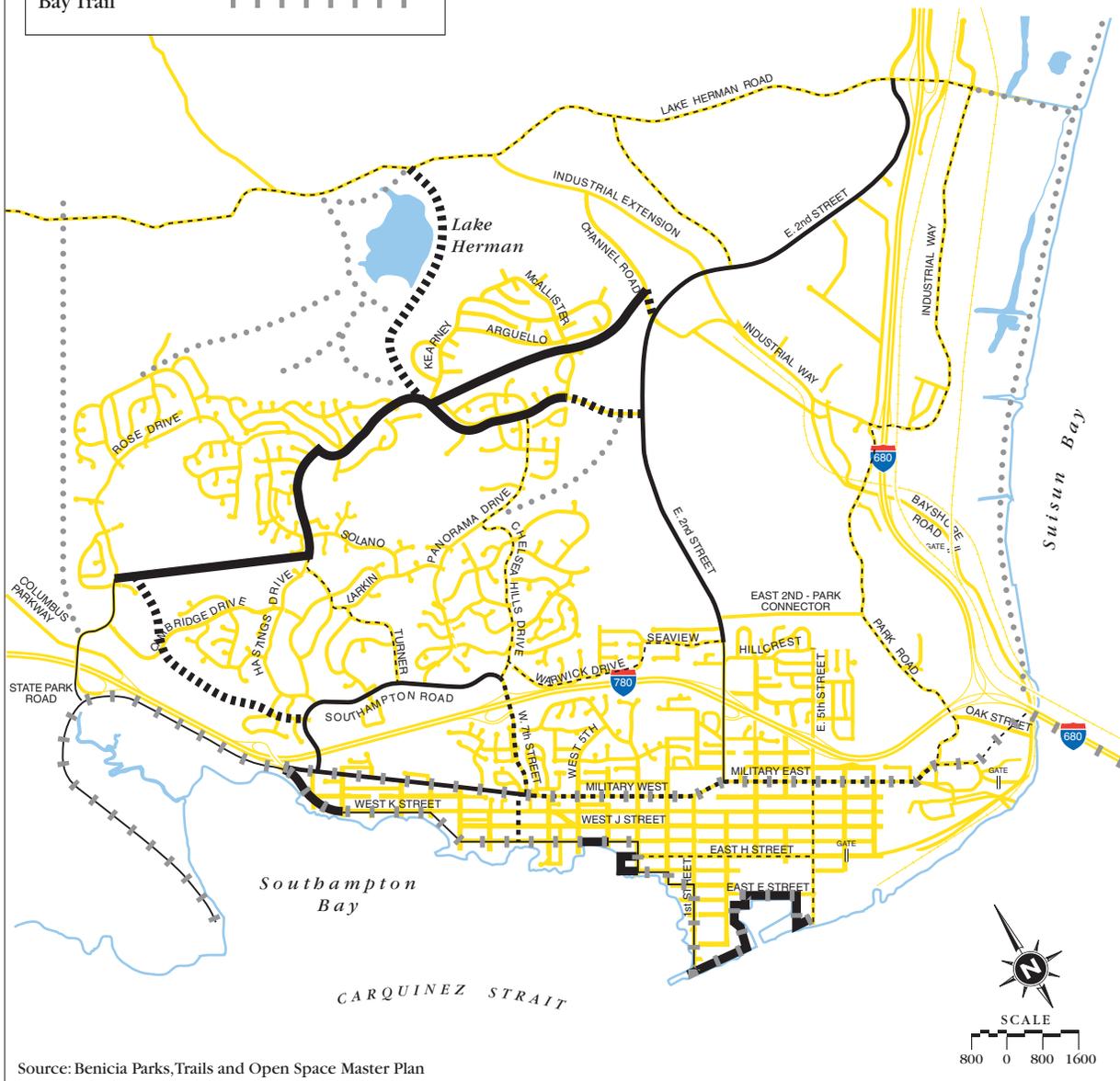


Figure 2-4. Bicycle and Multi-Use Circulation Diagram

About” paratransit service running primarily between Vallejo and Benicia. Since 1991, Caltrans has operated a daily Benicia-Martinez Bridge shuttle bus between the Park-and-Ride lot at the I-780/East 2nd St. interchange and the Martinez AMTRAK station. It is anticipated that this service will be discontinued on completion of the second bridge span.

#### **Passenger Rail Service**

There is commuter rail service operating through Solano County, and many Benicia residents commute to work via BART trains in Contra Costa County, using Benicia Transit to travel to the Pleasant Hill BART station.

#### **Ferry Transit**

Benicia commuters have access to ferry service via Benicia Transit to the Vallejo Ferry Terminal. The ferry operates between the ferry terminals in Vallejo and San Francisco.

### **AUTOMOBILE MOVEMENT**

#### **Street system**

The original settlement of Benicia was surveyed by Jasper O’Farrell (who also laid out the street system in San Francisco). A five-mile stretch of shoreline was selected, and a grid system of streets was superimposed with little relation to topography. All north-south streets in the original settlement have 80-foot wide rights-of-way, while the east-west streets have alternating 60- and 80-foot-wide rights-of-way. North-south streets were extended beyond the shoreline and into the water. Street names are alphabetical in the east-west direction and numbered in the north-south direction.

In the mid-1960’s, an east-west freeway (I-780) was constructed generally between “O” and “S” Streets. New development north of the freeway subsequently abandoned the grid system to minimize grading and street slope.

### **3. CIRCULATION SYSTEM**

Figure 2-5 shows the existing and future circulation system for Benicia. It will serve existing traffic as well as new traffic from development allowed under this General Plan. The system includes five basic roadway types: Freeways, Major Arterials, Minor Arterials, Collectors and Local Streets. The system includes several roadway connections and extensions which do not exist as of 1997, including:

1. A second Benicia-Martinez Bridge Span (not shown on Figure 2-5);
2. Public road connections through the lower Arsenal and Port areas, to include Bayshore Road (minor arterial), Adams Street (major arterial), and Oak Street (minor arterial);
3. A Bayshore Road connection between Park Road and Industrial Way (minor arterial);
4. A new east-west connector roadway between East Second Street and Park Road (minor arterial); and

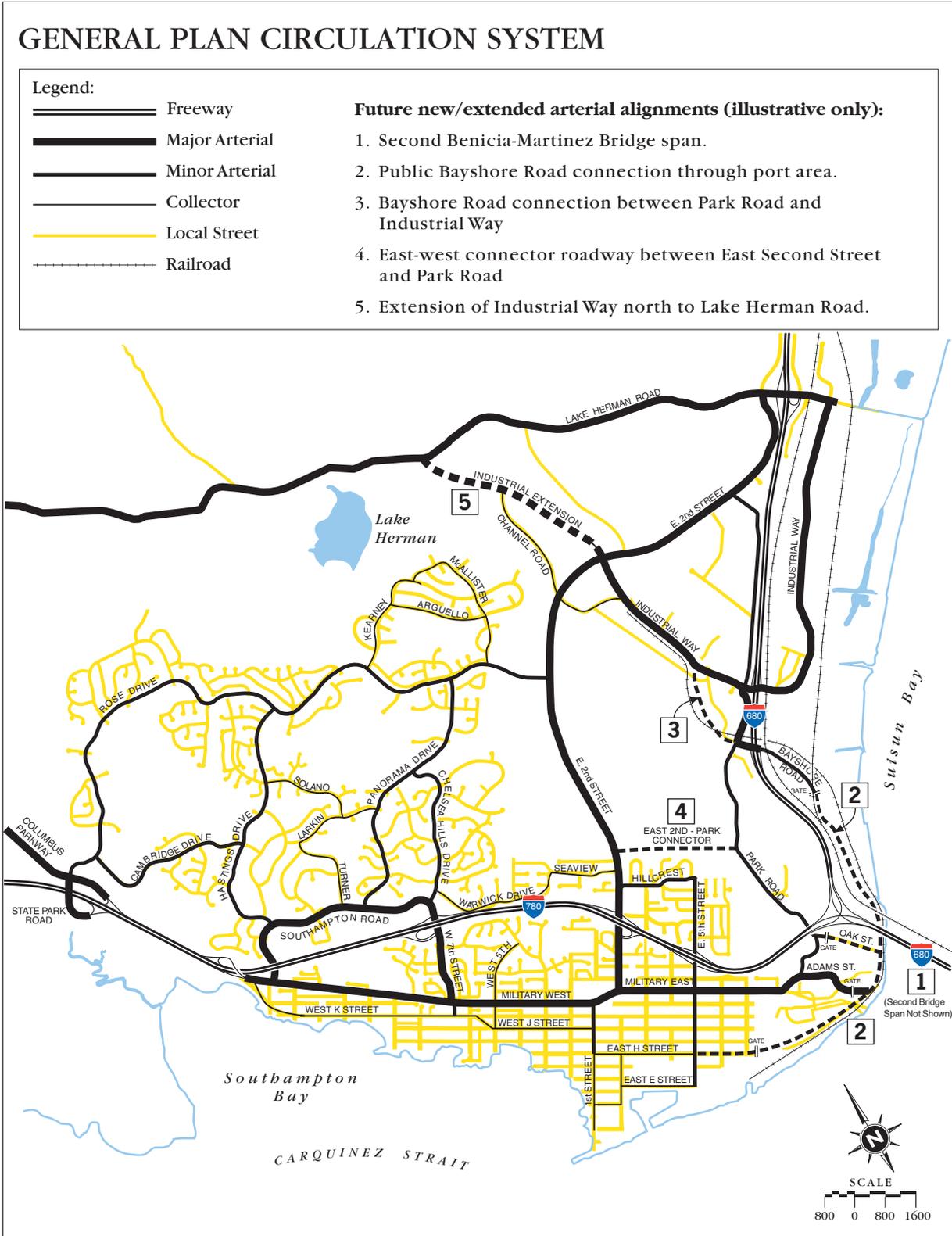


Figure 2-5. Circulation Diagram

5. Extension of Industrial Way north to Lake Herman Road (minor arterial).

Following is a description of the different roadway types in the Circulation System.

**FREEWAYS**

Freeways are intended to serve regional and sub-regional travel. In Benicia, the location of freeways relative to the rest of the street network results in some (but not extensive) freeway use by residents or employees for intra-city travel.

Interstate Highways I-680 and I-780 serve north-south and east-west travel respectively, through and within Benicia. Each are four-lane facilities through Benicia.

I-680 (six travel lanes) crosses the Benicia-Martinez bridge to the south. Caltrans plans to add a second bridge span which would result in five travel lanes in each direction (northbound and southbound).

**ARTERIAL STREETS**

Arterial streets link residential, commercial, and industrial districts with the highway system. They serve primarily through-travel as opposed to providing direct access to adjacent land uses. A Major Arterial is a roadway which connects freeways to minor arterials, other major arterials, and collector streets. A Minor Arterial is a roadway which connects major arterials to collectors and local streets. Arterials generally provide two to four travel lanes. Major and minor arterials in the General Plan Circulation System (see Figure 2-5) include:

Major Arterials	Minor Arterials
East Second Street	Rose Drive
Industrial Way	Park Road (except major arterial section)
Lake Herman Road	Oak Street
Military East - Military West	Bayshore Road
Adams Street	Hillcrest Ave., btwn E. 2nd and E. 5th Sts.
Southampton Road	East Fifth Street
West Seventh Street	New Park - East Second Connector Road
Columbus Parkway	First St. between Military and East "H" St.
State Park Road	Cambridge Drive
Park Road between Industrial Way and Bayshore Road	Panorama Drive from Southampton Road to Rose Drive
	Chelsea Hills Drive
	Hastings Drive
	West Seventh Street from West "K" Street to Military West

### COLLECTOR STREETS

Collector streets are generally two lanes wide and connect local streets to minor and major arterials. Collector streets generally do not form a continuous system; otherwise there would be a tendency to use them as arterials. The Benicia General Plan provides for collectors to serve the marina, various industrial areas, and most residential districts. The collectors in the General Plan Circulation System (see Figure 2-5) include:

Channel Road	Larkin Drive between Turner and Panorama
Kearny Street	West "K"/West J" Street (west of First Street)
McAllister Street	West 5th St./Sherman Dr. (north of Military)
Arguello Street	First Street South of East "H" Street
Solano Drive (Hastings to Larkin)	East "H" Street
Turner Drive	East "D" Street between First Street and East Second
Warwick Drive	East "E" Street between East 2nd and East 5th Streets
Seaview Drive	E. Second Street btwn East "H" and East "D" Streets

### LOCAL STREETS

The function of local streets is to provide access directly to abutting property. Future local streets are not shown on the Circulation System map because they are typically laid out in accordance with City standards as part of the subdivision design process. They play an important secondary role as locations for utilities, easements, open space for light and air, and firebreaks between buildings. Local streets are not intended to carry through-traffic from one part of the community to another.

## 4. EXISTING AND FUTURE TRAFFIC CONDITIONS

### FREEWAYS

The existing Level of Service (LOS) on freeways is monitored by the Solano Transportation Authority as part of their Congestion Management Program (CMP). LOS is expressed using a letter from A to F, with LOS A being best and LOS F being worst. (See Glossary for a more complete explanation of LOS). The 1995 CMP identifies LOS F conditions at the Benicia-Martinez Bridge toll plaza, LOS C/D conditions on I-680, and LOS C conditions on I-780.

The most recent study of future freeway traffic volumes is the I-680/I-80/I-780 Triangle Area Traffic Study Traffic Operations Report (1997). This report describes 1995 traffic volumes and projects future (2010) volumes for several scenarios which combine different sets of freeway improvements. The "No Build" scenario, which assumes the only improvement would be the scheduled Benicia - Martinez Bridge span which

represents the “worst case” for future conditions. For this case, the study indicates that peak hour freeway operations would be poor in the future (LOS D/E), although volumes would remain within the existing lane-capacity for all segments except I-780 between Southampton Road and Columbus Parkway in the AM peak hour.

Freeways serve both locally- and regionally-generated traffic and have a profound effect on communities. It is City policy to encourage Caltrans to maintain the current number of lanes on I-680 and I-780 through the city, except for spot widenings that may be necessary to smooth traffic at ramps. These policies are consistent with others in this General Plan which call for promoting alternative commute methods and a better jobs/housing balance to minimize freeway travel demand. The intent of the General Plan is not to create greater traffic congestion by rejecting all freeway widening, but to address the realities of growing travel demand through site-specific improvements, land use policies that minimize travel demand, and high occupancy vehicle (HOV) travel.

#### **CITY STREET NETWORK**

On the local, non-freeway road network in Benicia, traffic conditions are best represented by the operating level of intersections, because intersections are the primary source of delay and “bottlenecks.” Traffic operations at intersections are described in terms of Level of Service (LOS). LOS D is generally accepted as the standard for intersection operation and has been adopted as the standard for Benicia. (See Policy 2.20.1.)

Tables 2-8 and 2-9 describe the different LOS designations A to F, for signalized and stop-controlled intersections.

There are 24 key intersections in Benicia. Table 2-10 shows existing and projected service levels. As of 1995, four intersections operated at LOS D, and another four operated at LOS E or F. The LOS E/F intersections are all located at I-780 ramps. The rest of the intersections operated at LOS C or better. Of the eight intersections operating at LOS D or worse, five are stop-controlled intersections. A check of the Caltrans signal warrant criterion for peak hour volumes at intersections shows that installation of a signal is warranted at two of these intersections: East Second Street/I-780 Westbound Ramps and East Fifth Street/I-780 Eastbound Ramps. Both of these intersections are scheduled to be signalized in the City’s current Capital Improvement Program. Signalization would improve the existing LOS to C or better at these intersections.

Future traffic volumes at the study intersections were projected based on the land use changes in this General Plan. The traffic projection methodology is described in the General Plan DEIR Transportation chapter. Table 2-11 contains the future service levels which would result from these volumes, assuming no intersection improvements were made. While this General Plan involves a reduction in land use intensity in many areas relative to the previous general plan, the projected land uses at buildout would still cause unacceptable conditions (LOS D or worse) at 14 of the 24 intersections. (An additional eight intersections are already at LOS D or worse, as noted above).

**Table 2-8. Level of Service Criteria for Signalized Intersections**

LEVEL OF SERVICE (LOS)	VOLUME-TO-CAPACITY RATIO
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	>1.00

Source: Transportation Research Board, Circular 212, Interim Materials on Highway Capacity

**Table 2-9. Level of Service Criteria for Stop-controlled Intersections**

LEVEL OF SERVICE (LOS)	AVERAGE STOPPED DELAY PER VEHICLE (IN SECONDS)
A	0 to 5.0 seconds
B	5.1 to 10.0 seconds
C	10.1 to 20.0 seconds
D	20.1 to 30.0 seconds
E	30.1 to 45.0 seconds
F	more than 45 seconds

Source: Transportation Research Board, Highway Capacity Manual, 1994

The City’s policy is to maintain intersection operation at LOS D or better, except where improvements would be infeasible or undesirable due to considerations of right-of-way, impacts of neighboring properties, aesthetics, or community character. Thus, the improvements included in this General Plan attempt to provide LOS D or better at the 24 intersections, wherever possible.

Figure 2-6 shows the intersection improvements which would be required to improve all intersections to at least LOS D. Table 2-11 shows the projected level of service at the study intersections with the improvements. Of the 22 intersections which require improvement, 14 would require the installation of a signal, and all 22 would require lane additions on some or all approaches. Some of the lane recommendations may not be feasible due to physical constraints; however, more detailed operational studies of these intersections can be performed as the need for the improvements draws near,

**Table 2-10. Existing (1995) and Future Intersection Levels of Service (LOS)**

INTERSECTION	CONTROL TYPE	EXISTING SERVICE LEVEL			FUTURE SERVICE LEVEL		
		V/C	DELAY (SEC.)	LOS	V/C	DELAY (SEC.)	LOS
1. Columbus Parkway/Rose Drive	Signal	0.82		D	1.75		F
2. Southampton/Hastings	One-way Stop		15/3	C/A		28/4	D/A
3. Southampton/Military West	Signal	0.46		A	0.58		A
4. Southampton/Chelsea Hills	Signal	0.74		C	1.09		F
5. West Seventh/I-780 WB On/Off	Signal	1.01		F	1.72		F
6. West Seventh/I-780 EB On/Off	Signal	0.60		A	1.07		F
7. First / Military	Signal	0.53		A	.76		C
8. East Second/I-780 WB On/Off	One-way Stop		81/22	F/D		*/*	F/F
9. East Second/I-780 EB On/Off	Signal	0.63		B	1.28		F
10. East Second/Military East	Signal	0.63		B	1.57		F
11. East Fifth/I-780 WB On/Off	One-way Stop		259/66	F/F		*/*	F/F
12. East Fifth/I-780 EB On/Off	One-way Stop		35/4	E/A		*/*	F/F
13. East Fifth/Military East	Signal	0.80		D	1.23		F
14. East Second/Rose Drive	Signal	0.58		A	1.91		F
15. East Second/Industrial	Two-way Stop		29/7	D/B		*/*	F/F
16. Bayshore/Park	Four-way Stop		28	D		*	F
17. Bayshore/I-680 SB On	WB Left Yield		5/1	A/A		*/*	F/F
18. Bayshore/I-680 NB Off	One-way Stop		6/3	B/A		*/*	F/F
19. Industrial/Park	Four-way Stop		14	C		*	F
20. Industrial/I-680 SB Off	One-way Stop		5/1	A/A		*/28	F/D
21. Industrial/I-680 NB On	One-way Stop		8/4	B/A		*/*	F/F
22. Lake Herman/East Second	Two-way Stop		9/4	B/A		*/*	F/F
23. Lake Herman/I-680 SB On/Off	One-way Stop		9/1	B/A		*/*	F/F
24. Lake Herman/I-680 NB On/Off	Two-way Stop		/2	A/A		*/*	F/F

For signalized intersections, the volume/capacity ratio is given. For side street stop-controlled intersections, two delays and service levels are given: the delay for the worst movement, and the average intersection delay. For four-way stops, the average intersection delay is given.

\* = very long delays (over two minutes)

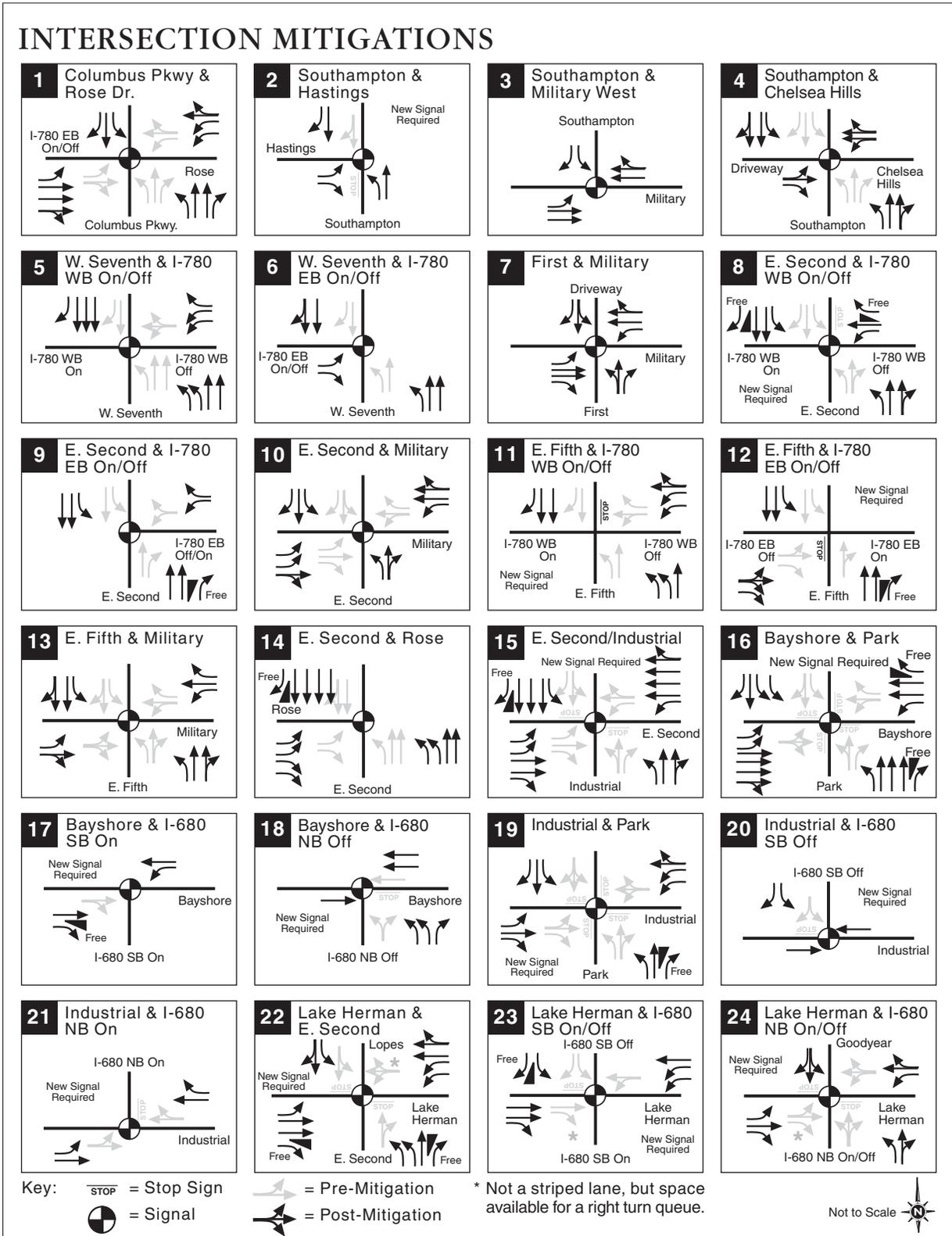


Figure 2-6. Intersection Mitigations

**Table 2-11. Intersection LOS: Future Conditions with and without Intersection Improvements**

INTERSECTION	EXISTING CONTROL TYPE	WITHOUT IMPROVEMENTS			WITH IMPROVEMENTS		
		V/C	DELAY (SEC.)	LOS	V/C	DELAY (SEC.)	LOS
1. Columbus Parkway/Rose Drive	Signal	1.75		F	0.89		D
2. Southampton/Hastings	One-way Stop		23/4	D/A	0.71		C
3. Southampton/Military West	Signal	0.58		A	0.59		A
4. Southampton/Chelsea Hills	Signal	1.09		F	0.82		D
5. West Seventh/I-780 WB On/Off	Signal	1.72		F	0.84		D
6. West Seventh/I-780 EB On/Off	Signal	1.07		F	0.76		D
7. First/Military	Signal	0.76		C	0.76		C
8. East Second/I-780 WB On/Off	One-way Stop		*/*	F/F			D
9. East Second/I-780 EB On/Off	Signal	1.28		F	0.87		D
10. East Second/Military East	Signal	1.57		F	0.83		D
11. East Fifth/I-780 WB On/Off	One-way Stop		*/*	F/F			D
12. East Fifth/I-780 EB On/Off	One-way Stop		*/*	E/F			D
13. East Fifth/Military East	Signal	1.23		F	0.88		D
14. East Second/Rose Drive	Signal	1.91		F	0.89		D
15. East Second/Industrial	Two-way Stop		*/*	F/F			D
16. Bayshore/Park	Four-way Stop		*	F			D
17. Bayshore/I-680 SB On ramp	WB Left Yield		*/*	F/F			C
18. Bayshore/I-680 NB Off ramp	One-way Stop		*/*	F/F			D
19. Industrial/Park	Four-way Stop		*	F			D
20. Industrial/I-680 SB Off ramp	One-way Stop		*/28	F/D			D
21. Industrial/I-680 NB On ramp	One-way Stop		*/*	F/F			B
22. Lake Herman/East Second	Two-way Stop		*/*	F/F			D
23. Lake Herman/I-680 SB On/Off	One-way Stop		*/*	F/F			C
24. Lake Herman/I-680 NB On/Off	Two-way Stop		*/*	F/F			B

For signalized intersections, the volume/capacity ratio is given. For side street stop-controlled intersections, two delays and service levels are given: the delay for the worst movement, and the average intersection delay. For four-way stops, the average intersection delay is given.

\* = very long delays (over two minutes)

and alternative solutions may be identified (e.g., signal cycle length or phasing changes, adding capacity at a different intersection approach, coordinating timing at adjacent signals, etc.)

It should be emphasized that this improvement analysis is based on an estimate of conditions with reasonably foreseeable development allowed by this General Plan, to the year 2015—almost 20 years from now. As such, it constitutes long-range planning information, which will need to be supplemented by ongoing traffic counts and studies by the City to ensure that the appropriate improvements are developed and implemented when needed.

#### **Future Arterial Widths**

The definitions for arterials and collectors, noted earlier in this section, are summarized below:

- A major arterial is two to four lanes wide and connects freeways to minor arterials, other major arterials, and collectors.
- A minor arterial is two to four lanes wide and connects major arterials to collectors and local streets.
- A collector street is generally two lanes wide and connects local streets to minor and major arterials.

Projected future volumes on Benicia's arterials were analyzed to determine where widening or other changes may be needed. (The DEIR Transportation Chapter includes a table of arterial capacities which was used for this analysis). Table 2-12 shows the arterial segments which may exceed capacity with development allowed in this General Plan. As with the intersection improvements described above, this analysis provides long-range planning information, which will need to be supplemented by ongoing traffic counts and studies by the City.

Although the projected traffic volumes indicate the need for some roads to be widened, road widening may have deleterious effects, and alternatives should be studied before new widening projects are added to the City's Capital improvement Program.

Most of the improvements called for above would provide much greater capacity than needed. In most locations, only an additional 10 to 20 percent in traffic-carrying capacity is needed. A road widening from two to four lanes adds 100 percent capacity.

The City has recognized the need to provide smooth and reasonably convenient traffic flow, through General Plan policies such as maintaining LOS D where feasible. At the same time, the community is wary of the downside of over-sizing roads and intersections—a less pleasant environment for pedestrians and bicyclists, a tendency to draw new traffic to locations where excess capacity is provided, and a disincentive to use alternative travel modes such as carpooling and transit.

The General Plan promotes non-auto travel modes through policies and programs aimed at enhancing the pedestrian, bicycle, and transit experience. These policies

would be undermined if the road network offered excess capacity. As traffic congestion grows on city roads, the City will consider alternatives to widening, such as “spot widening” at congestion points, aggressive Travel Demand Management programs, rerouting traffic, prohibiting certain turning movements during peak hours, and coordinating traffic signals.

**Table 2-12. Streets That May Exceed Existing (1997) Capacity with Future Growth Under this General Plan**

ROADWAY	SEGMENT	IN CAPITAL IMPROVEMENT PROGRAM?
Lake Herman Road	East of the I-680 NB Ramps	No
East Second Street	Between Lake Herman Road and existing four-lane section	Yes (southeast half only)
East Second Street	Between I-780 WB Ramps and Military East	Yes
East Fifth Street	Between I-780 WB Ramps and Military East	Yes
Industrial Way	Between Lake Herman Road (along new extension) and the I-680 ramps	No
Bayshore Road	Between I-680 SB Ramp and Industrial Way <sup>6</sup>	No
Military West	Between West Fifth and West Second	Yes
Military East	Between East Second and East Fifth	No
West Seventh	Between Chelsea Hills and Military West <sup>7</sup>	Yes
Park Road	Between Industrial and Bayshore	Yes

## 5. PARKING CONDITIONS

Benicia generally has good parking conditions, with adequate on-street and off-street parking provided for local uses.

<sup>6</sup> A future extension between Park Road and Industrial Way would extend through Exxon and would be difficult to build to four lanes. Also, any widening of the existing Sulphur Springs Creek two-lane bridge would be very costly. It is likely that a four-lane facility could extend only between the I-680 south-bound ramp and Park Road. The remaining portion would remain two lanes.

<sup>7</sup> Any widening of West 7th at the I-780 interchange would require a new bridge, at significant cost.

## 6. FREIGHT AND GOODS MOVEMENT

Three types of transportation facilities move freight and goods in Benicia. They are truck, rail, and port facilities.

### **TRUCK FACILITIES**

Trucks are used for freight transport primarily in Benicia's industrial area along the northern I-680 corridor, and in the Port area adjacent to the Bridge. Freeway signs direct Benicia Industrial Park traffic to use I-680 exits.

As development allowed in the General Plan takes place, truck traffic will increase in the industrial and Port areas, and to a lesser extent in other growth areas.

### **FREIGHT RAIL FACILITIES**

Freight rail facilities in Benicia center on the main Union Pacific Railroad line from Sacramento. This line once terminated at the foot of First Street, but now crosses the Carquinez Strait on a bridge paralleling the Benicia-Martinez Bridge to Martinez and the East Bay. Rail spur lines serve Benicia's industrial park area to the north and the Port area along the southern waterfront. Rail service along the waterfront terminates before reaching East 5th Street.

The spur line through the Benicia Industrial Park and the Arsenal area is used most frequently by auto carriers and by Exxon.

Caltrans and Union Pacific have negotiated an agreement for complete rebuilding of both tracks. The agreement will allow increased passenger rail service without interfering with freight trains.

### **PORT FACILITIES**

Benicia has a natural deep water channel adjacent to the shore along the Carquinez Strait. This channel permits container ships, fuel tankers, and freighters with fairly deep draft (up to about 35 feet) to dock at Benicia's Port.

The Port of Benicia, which is leased and owned by Benicia Industries (a private company), has a 2,400-foot deep-water pier which provides berthing for three ships. This lease and the Bay Area Seaport Plan are discussed in Appendix D. There is also an existing petroleum service dock northeast of the Port of Benicia pier.

## 7. CIRCULATION GOALS, POLICIES, AND PROGRAMS

The goals, policies, and programs that follow deal comprehensively with the needs of and recommendations for pedestrian and bicycle circulation; transit, rail, and ferry service; reducing traffic congestion; parking; needs in special areas of the city (industrial park, Pine Lake, and Lower Arsenal); and proposals for freeway modifications.



**GOAL 2.14:**

**Enhance Benicia’s small-town atmosphere of pedestrian-friendly streets and neighborhoods.**

**POLICY 2.14.1:**

Give priority to pedestrian safety, access, and transit over automobile speed and volume.

*Program 2.14.A:*

Reexamine City standards to allow the development of local streets with the minimum pavement width needed in residential areas, at the same time assuring that emergency access is maintained and that pedestrian and vehicular safety are preserved.

*Program 2.14.B:*

Consider physical and operational changes to reduce speeds (e.g., narrow lane widths and signal timing), and increase traffic speed enforcement.

*Program 2.14.C:*

Consider residential streets with textured pavements and parallel parking.

*Program 2.14.D:*

Where feasible redesign corner radii to corners with tight radii to slow vehicles and alert drivers to pedestrians in crosswalks.

*Program 2.14.E:*

Consider reducing lane widths, as one method of both slowing traffic and making room for parking, wider sidewalks, or bike lanes.

*Program 2.14.F:*

Where feasible, provide pedestrian sidewalks in all residential areas along both sides of the street.

Some exceptions may be made where alternate paths exist, such as along alley streets, and where undesirable environmental impacts may result.

*Program 2.14.G:*

Evaluate the feasibility of finishing sidewalks along streets where they are currently lacking.

*Program 2.14.H:*

Identify areas where sight distance for vehicle drivers and pedestrian safety can be improved with signs, tree placement, landscaping, parking policy, building design, and streetscape. Prepare a program and schedule for implementing these improvements.



*Program 2.14.I:* Identify areas where crosswalk safety can be improved through better lighting and striping, prohibiting right turns on red at specific intersections, installing pedestrian-activated push buttons for signals, installing a textured or raised paving material, and employing crossing guards for school children. Prepare a program and schedule for implementing these improvements.

**POLICY 2.14.2:** Discourage street widenings and the removal of on-street parking to ease traffic flow.



**GOAL 2.15:** **Provide a comprehensive system of pedestrian and bicycle routes which link the various components of the community: employment centers, residential areas, commercial areas, schools, parks, and open space.**

**POLICY 2.15.1:** Make pedestrian and bicycle circulation, and safety improvements a high priority for transportation funding, utilizing locally generated revenues and State and federal grants.

*Program 2.15.A:* Construct public improvements that accommodate and enhance pedestrian and bicycle access.

*Program 2.15.B:* Provide additional trails along the shoreline.

*Program 2.15.C:* Provide proper signing for improved trails, fire break trails, and interpretive trails.

*Program 2.15.D:* Improve safety and pedestrian movement by building curb extensions that narrow the overall width required by pedestrians to cross the street at major pedestrian waiting areas at street intersections, sidewalks, and landscaped areas.

*Program 2.15.E:* Identify areas where adequate lighting for pedestrians in urban areas is needed. Install additional lighting as appropriate.

*Program 2.15.F:* Widen the Rose Drive/State Park Road at I-780 overpass to accommodate pedestrians and bicycle traffic.

*Program 2.15.G:* Create a protected landscaped sidewalk for West 7th Street between I-780 and Military West.

**POLICY 2.15.2:** Encourage the development of pedestrian paths in hill areas as a way to link neighborhoods to schools, parks, employment centers, and convenience commercial destinations.

*Program 2.15.H:* Continue to implement the pedestrian pathway system in the City's Parks, Trails and Open Space Master Plan especially

linkages between the City’s residential neighborhood and commercial districts.

*Program 2.15.I:* Facilitate the connection of future Benicia-Martinez Bridge pedestrian/bike lanes to the city pedestrian/bike network. Connect paths from existing and proposed regional trail systems to the Boundary Hills and Benicia-Martinez Bridge.

*Program 2.15.J:* Improve pedestrian and bike access between Downtown and Southampton.



**GOAL 2.16: Ensure access needs of individuals with disabilities.**

**POLICY 2.16.1:** Provide for adequate public access in all forms (walks, buildings, transportation) in conformance with the Americans for Disabilities Act (ADA).

*Program 2.16.A:* In places that accommodate the public, remove barriers to access or provide alternative services when barriers cannot be removed.

*Program 2.16.B:* Require that publicly sponsored programs, activities and transportation facilities are accessible to individuals with disabilities (including employees).

**POLICY 2.16.2:** Encourage private entities to maintain places of business that are physically accessible to all.

*Program 2.16.C:* Assess the cost and feasibility of Policy 2.16.2, including any changes in opportunities or costs for businesses to occupy historic structures.



**GOAL 2.17: Provide an efficient, reliable, and convenient transit system.**

**POLICY 2.17.1:** Continue to provide transit service to all—and subsidized paratransit service to all qualified—potential users, including youth, the elderly and the disabled, modifying routes and schedules as demand changes.

*Program 2.17.A:* Preserve the personal service provided by Dial-a-Ride.

*Program 2.17.B:* Subsidize transit at a level justified by a cost/benefit study.

*Program 2.17.C:* Institute a continuing program to evaluate the transit system to ensure it meets the public’s needs.

*Program 2.17.D:* Allow preferential parking for public transit vehicles.

- Program 2.17.E:* Set local priorities and needs for future service, taking into account funding uncertainties for Benicia’s and other transit systems.
- Program 2.17.F:* Improve inter-modal coordination of transit services.
- Program 2.17.G:* Provide attractive and pedestrian-friendly transit stops and buses, including bike racks on buses.
- Program 2.17.H:* Provide transit shelters with good visibility and benches, thus enhancing the pedestrian-transit interface.
- POLICY 2.17.2:** Consider nontraditional use of the existing transit system for tours, shuttles, and special events, (e.g., First Street shuttle, First Street to Community Park shuttle, First Street to Arsenal shuttle, State Park shuttle).
- Program 2.17.I:* Optimize the use of existing transit equipment.
- Program 2.17.J:* Consider a shuttle service between large commercial centers.
- POLICY 2.17.3:** Coordinate transit service and trip reduction efforts with other agencies.
- Program 2.17.K:* Provide intercity bus service to Vallejo and Fairfield commensurate with available funding.
- Program 2.17.L:* Coordinate school district/city bus schedules for optimum efficiency.
- Program 2.17.M:* Coordinate transit planning with the Contra Costa Transportation Authority (CCTA) and Solano County, and coordinate future mass transit planning with all other regional efforts.
- Program 2.17.N:* Participate in Major Investment Studies (MIS) to assure that transit alternatives are fully considered.



- GOAL 2.18:** **Encourage the provision of convenient rail service to Benicia with a station near the Benicia Bridge.**
- POLICY 2.18.1:** Work with BART, Caltrans, BCDC, the Solano Transportation Authority, and MTC in planning a rail station near the Benicia-Martinez Bridge.
- Program 2.18.A:* Consider mixed use, commercial and industrial uses that complement the train station.
- Program 2.18.B:* Plan for convenient auto and transit access to and auto parking at the train station to encourage its use.



**GOAL 2.19: Promote a regional (San Francisco, Oakland, Alameda) and local (Martinez, Port Costa, and Crockett) ferry service.**

When the waterfront area adjacent to the Benicia Marina is developed and the number of visitors to the foot of First Street increases, a weekend ferry service between Benicia and the historic town of Port Costa or Martinez along the northern shores of Contra Costa County may be feasible.

**POLICY 2.19.1:** Work with MTC to establish ferry service. Communicate regularly with them regarding plans and funding for ferry service.

*Program 2.19.A:* Identify ferry service market potential and terminal location options.



**GOAL 2.20: Provide a balanced street system to serve automobiles, pedestrians, bicycles, and transit, balancing vehicle-flow improvements with multi-modal considerations.**

**POLICY 2.20.1:** Maintain at least Level of Service D on all city roads, street segments, and intersections.

Exceptions may be allowed where measures required to achieve LOS D are infeasible because of right-of-way needs, impact on neighboring properties, aesthetics, or community character.

*Program 2.20.A:* Identify areas where it would be beneficial to reduce and divert through vehicular traffic from local residential streets. Implement appropriate neighborhood traffic control programs in these areas.

*Program 2.20.B:* Locate new development where there is adequate existing or planned future road and highway capacity and where local residential streets will not be significantly impacted.

*Program 2.20.C:* Encourage use of alleys for commercial loading activities when it will not block driveways or mid-block access to the street.

**POLICY 2.20.2:** Seek alternatives to road widenings

*Program 2.20.D:* Continue to identify and implement acceptable alternatives to in-town roadway widening, extensions, and large intersections.

*Program 2.20.E:* Identify streets where traffic should be slowed.

*Program 2.20.F:* Consider lane narrowing, driver education, traffic speed alert trailers, and other traffic calming remedies.

*Program 2.20.G:* Advertise the use of transit, bicycling, and walking for commuting, shopping, recreation, and school trips.

*Program 2.20.H:* Reserve right-of-way for new alternate transportation facilities that contribute to street and roadway congestion relief.

*Program 2.20.I:* Coordinate traffic signal improvements and synchronization and continue to implement timing changes.

*Program 2.20.J:* Develop adequate funding for keeping streets, alleys and sidewalks in good repair.

*Program 2.20.K:* Identify and prioritize transportation facilities maintenance projects for roadways, sidewalks, and off-street trails and paths.

*Program 2.20.L:* Identify areas of the city that are pedestrian-unfriendly and develop corrective plans.

**POLICY 2.20.3:** Maintain Lake Herman Road as a rural, two-lane, curving scenic route.



**GOAL 2.21:** Encourage Benicia residents and employees to use alternatives to the single-occupant automobile.

**POLICY 2.21.1:** Provide and promote a range of travel alternatives to the use of the private automobile.

“Design Strategies for Encouraging Alternatives to Auto Use Through Local Development Review,” prepared by ABAG and BAAQMD, provides a number of site planning strategies for commercial and residential development that aim at reducing auto use by making pedestrian and bicycle travel more attractive.

*Program 2.21.A:* Advertise the benefits of Transportation Demand Management (TDM) measures and conduct public outreach programs to educate the public about options available within the city.

*Program 2.21.B:* Implement Transportation Control Measures (TCMs) appropriate to Benicia.

**POLICY 2.21.2:** Encourage new development patterns that facilitate bicycling, walking, and transit for commute, shopping, recreation, and school trips.

*Program 2.21.C:* Consider denser, mixed-use developments, particularly in the Downtown area.

*Program 2.21.D:* Consider the feasibility of extending East Second Street from East “L” Street to East “K” Street.



**GOAL 2.22:** Alleviate traffic congestion near school sites.

**POLICY 2.22.1:** Work closely with the School District in addressing traffic congestion near schools.

- Program 2.22.A:* Develop a plan jointly with the School District for reducing traffic congestion at and near school sites.
- Program 2.22.B:* Encourage the School District to continue the comprehensive crossing guard program.
- Program 2.22.C:* Adjust phasing/timing of signal lights on routes to schools, and consider providing increased crossing guards and/or police direction of traffic.
- Program 2.22.D:* Encourage the School District to implement citywide busing and promote carpools for trips to school.
- Program 2.22.E:* Promote School District provision of adequate off-street parking, drop-off and pickup facilities, and designated carpool parking at each school.
- Program 2.22.F:* Study the need for and feasibility of a pedestrian bridge linking the middle school and high school.



**GOAL 2.23: Ensure adequate parking while maintaining aesthetic landscape features.**

- POLICY 2.23.1:** Provide adequate on-street and off-street parking.
- Program 2.23.A:* Continue to allow on-street parking where needed for abutting uses (e.g., Military East).
- Program 2.23.B:* Preserve and improve the East Second and “E” Street parking lot. Consider double-deck parking if need warrants.
- Program 2.23.C:* Allow flexible parking requirements for uses smaller than 2,000 square feet.
- Program 2.23.D:* Update parking requirements based on actual local parking generation studies wherever appropriate, and consider parking proximity to transit corridors.

- POLICY 2.23.2:** Reduce the visibility of parking lots.
- Program 2.23.E:* Allow future parking to be divided into smaller lots with generous internal and perimeter landscaping.
- Program 2.23.F:* Recommend parking to be located behind or alongside (but not in front of) buildings, where possible.



**GOAL 2.24: Continue to provide safe and direct access to the Industrial Park.**

- POLICY 2.24.1:** Continue to ensure public access to private roads in the industrial and Port areas.

- Program 2.24.A:* Investigate establishment of Industrial Park bus service.
- Program 2.24.B:* Investigate alternate routes that would better accommodate access from the freeway to the Port and Industrial Park.
- Program 2.24.C:* Identify solutions to circulation problems associated with truck traffic by maintaining a database of truck-related citizen or business complaints in combination with truck counts and accident data.



**GOAL 2.25: Improve auto and non-auto access into the Old Arsenal, without disrupting existing neighborhood, historic, and environmental values.**

**POLICY 2.25.1:** Consider alternative modes of transportation to the auto in planning new access and in improving existing routes into the Arsenal.

*Program 2.25.A:* Improve access into the Arsenal from I-680.

*Program 2.25.B:* Depending on City’s determination of need and impacts, decide whether to connect the Lower Arsenal with the Downtown, such as through East “H” Street, including bike, pedestrian, and emergency access.

It is important to link the Lower Arsenal area with Downtown for economic development and maximum utilization of the waterfront, historic, and cultural assets. There are two alternatives: (1) open the gate and allow access over the hill to the Lower Arsenal; and (2) open the gate and allow access via Bayshore Road.

The City will investigate alternative alignments, mindful of “H” Street residents’ concerns about through-traffic and Benicia Industries’ concerns about Port security.



**GOAL 2.26: Ensure that scenic and environmental amenities of I-680 and I-780 are not compromised.**

**POLICY 2.26.1:** Promote the use of freeway right-of-way for alternative commute methods (e.g., car pool lanes, transit, and off-road bike paths).



**POLICY 2.26.2:** Encourage the preservation of I-780 as four lanes, but support spot widenings at selected locations (e.g., the approach to the Benicia-Martinez Bridge on/off merge lanes) to address future capacity problems while still maintaining a four-lane mainline freeway.

**POLICY 2.26.3:** Support Caltrans' Benicia-Martinez Bridge project, advocating the following: (1) continued toll collection in the northbound direction with the toll plaza located at the southern end of the bridge; (2) elimination of existing lane merge problems at the I-680/I-780 interchange; (3) retaining direct access to existing interchanges at East 2nd and East 5th Streets, (4) accommodating rail transit on the bridge in the future, and (5) only widen I-680 upon evaluation of alternatives.

**POLICY 2.26.4:** Ensure that the Benicia-Martinez Bridge project adequately reflects the community's concerns.

*Program 2.26.A:* Continue to monitor and comment on Caltrans planning activities and documentation as the bridge planning process continues.



**GOAL 2.27:** **Ensure an active community deliberation process in response to Caltrans proposals now and in the future.**

**POLICY 2.27.1:** Monitor Caltrans' planning process for I-680 and I-780 improvements and communicate the City's concerns and priorities to Caltrans.

**POLICY 2.27.2:** Ensure the continuation of the following City policies in discussions with Caltrans about changes to I-680 and I-780:

- A) Preserve the Lake Herman interchange vista look-out and rest area.
- B) Relocate the Industrial interchange northbound off-ramp and southbound on-ramp from the south end of the Sulphur Creek overcrossing at Bayshore Road to the north end at Industrial Way.
- C) Use the existing toll building at the existing Benicia-Martinez Bridge for a passenger train station for the UP rail line. Provide adequate access to and automobile parking at the station. Provide for the station to accommodate a light rail passenger line on the new bridge.
- D) Preserve direct access to and from I-780 at East Second and East Fifth Streets.

- E) Preserve the existing westbound exit from I-780 at Columbus Parkway and ensure that existing commercial buildings are not removed.
- F) Keep I-780 four lanes. Support spot widenings at selected locations (e.g., the approach to the Benicia-Martinez Bridge on/off merge lanes) to address future capacity problems while still maintaining a four-lane mainline freeway.
- G) Only support the widening of I-680 to six lanes upon evaluation of alternatives.
- H) Do not permit sound walls or retaining walls along I-780. Permit sound walls and retaining walls that the community believes would provide benefits that outweigh drawbacks.

**POLICY 2.27.3:** Ensure that the Benicia residential and business community is informed about Caltrans' project planning activities, and solicit public input on Caltrans projects.

*Program 2.27.A:* Review existing plans and work with Caltrans to develop proposals that reflect the consensus.

## D. COMMUNITY SERVICES

### 1. PUBLIC AND QUASI-PUBLIC

Public and quasi-public facilities uses provide a variety of services to the public including police, fire, water, sewer, and education. Local government entities (e.g., the City of Benicia and the Benicia Unified School District) occupy a large portion of Public/Quasi-public lands. In keeping with the nature of these facilities in serving the public, they are distributed throughout the City. Figure 2-7 shows existing public and quasi-public facilities as of 1995.

#### PUBLIC AND QUASI-PUBLIC GOALS, POLICIES, AND PROGRAMS



**GOAL 2.28: Improve and maintain public facilities and services.**

**POLICY 2.28.1:** Require that new development not reduce the levels of service in existing neighborhoods below City standards.

*Program 2.28.A:* Establish standards for city services and facilities, as approved by the City Council (see also Program 2.6.E).



**GOAL 2.29: Provide for churches to locate where conflicts with adjacent land uses will be minimized.**

**POLICY 2.29.1:** Inside the Urban Growth Boundary, allow churches outright in community commercial zones and as a conditional use in other zones. Make every effort to provide land for needed religious assembly when planning large new projects in these zones.



**POLICY 2.29.2:** Encourage the location and design of church facilities to be compatible with neighboring properties.

**POLICY 2.29.3:** In any future developments, consider earmarking land for quasi-public uses.

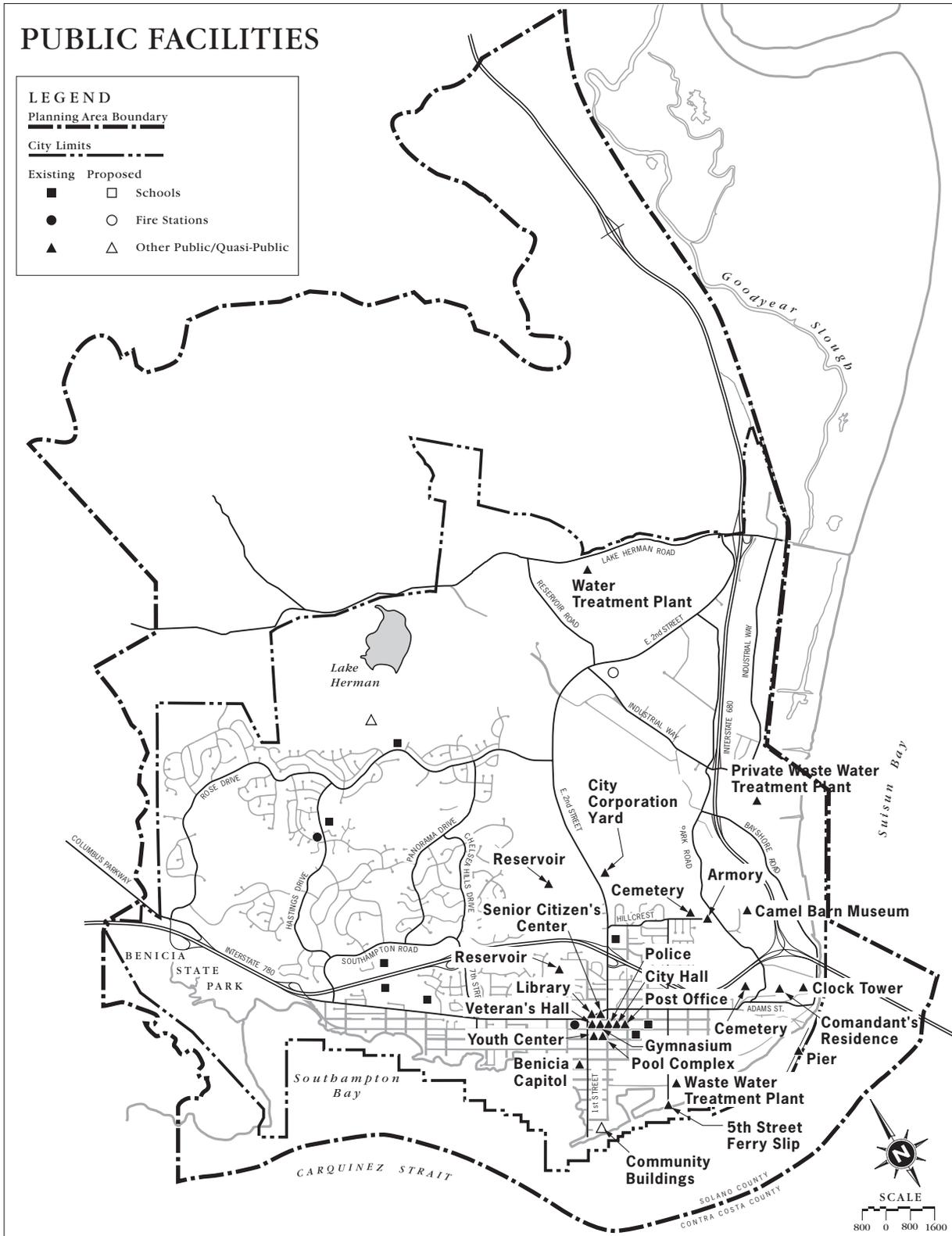


Figure 2-7. Public/Quasi-public Facilities

**2. PARKS AND RECREATION**

The City of Benicia has an extensive park, trail, and open space system, as well as a *Parks, Trails and Open Space Master Plan* (1997) that seeks to elaborate on the existing system by adding parks, bikeways and improved community trails.

**STANDARDS**

The General Plan provides standards for three categories of City Parks: Regional, Community, and Neighborhood. The categories are defined in Section A, Land Use of this chapter (Chapter 2).

**EXISTING PARKS**

Benicia has almost 700 acres of existing parks; the largest part of this acreage is in the Lake Herman Regional Park (577 acres). Benicia also has several recreational centers: the Senior Center, City Gym, James Lemos Pool complex, and the Youth Activities Center. The City has a joint use agreement with the Benicia Unified School District that provides for the sharing of facilities. In addition, the City has several

parks/recreation facilities not categorized in the Parks, Trails, and Open Space Master Plan. These include one public launch ramp, two fishing piers, and small waterfront parks. Table 2-13 and Figure 2-8 list and locate the City's various parks and recreational facilities. The City's 1997 Parks Master Plan provides a full description of all parks within the City.



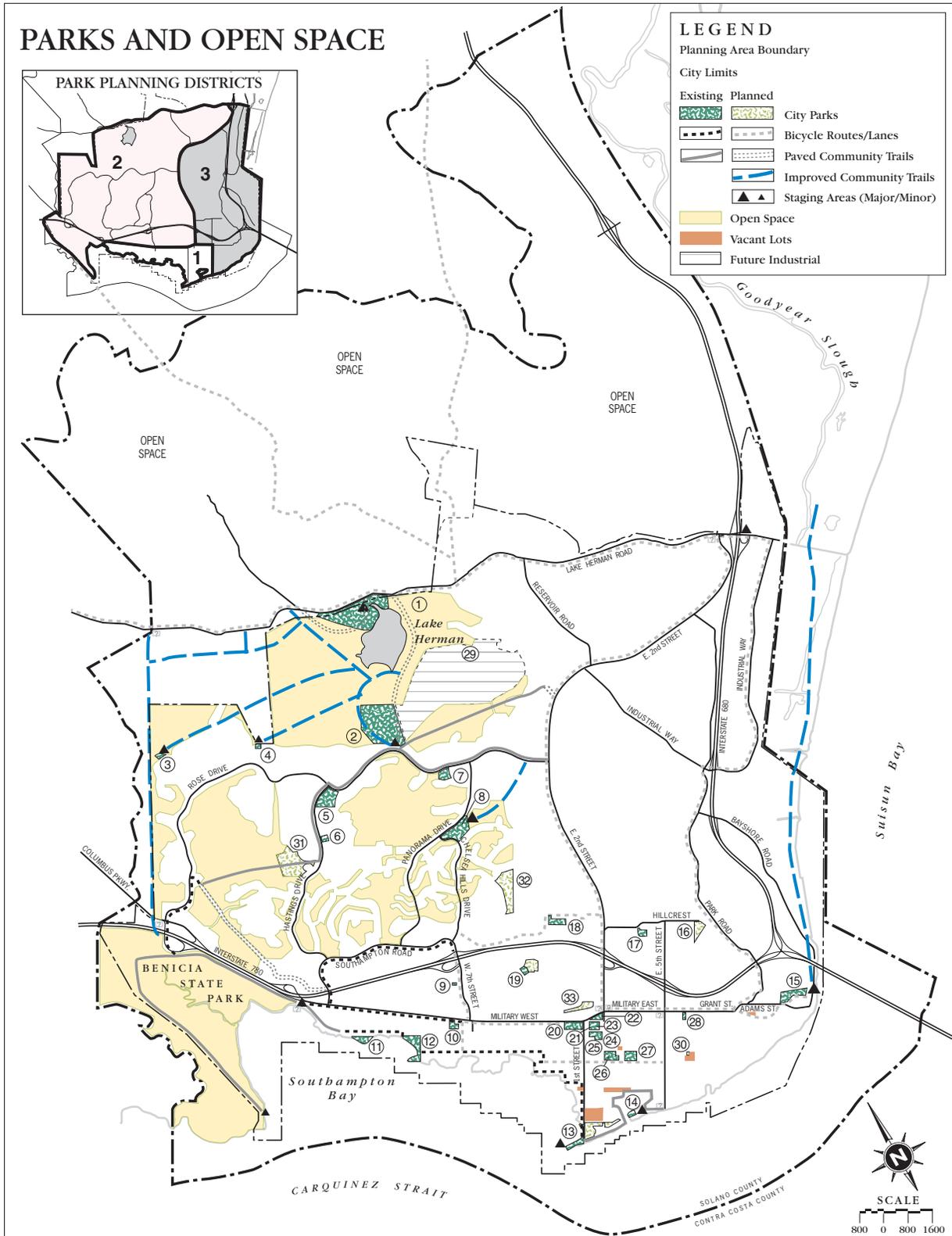


Figure 2-8. Parks and Open Space

**Table 2-13. Existing and Future Parks and Recreation Facilities within City Limits, 1995**

MAP NO.*	FACILITY NAME	ACRES
1.	Lake Herman Regional Park	577.0
2.	Benicia Community Park	50.0
3.	Channing Circle Park	2.5
4.	Gateway Park	0.5
5.	Jack London Park	7.7
6.	Park Solano	2.0
7.	Frank Skillman Park	3.0
8.	Southampton Park	6.0
9.	Benicia Views II	0.5
10.	Willow Glen Park	4.5
11.	Matthew Turner Park (West 12th Street)	2.5
12.	West 9th Street Park	6.0
13.	Point Benicia Spit	0.3
14.	Turnbull Park	0.3
15.	Clocktower	—
16.	Francesca Terrace	5.0
17.	Duncan Graham Park	2.0
18.	Overlook Park	3.5
19.	Bridgeview Park	4.5
20.	City Park	4.5
21.	Civic Center Park	3.5
22.	Benicia Senior Citizens' Center	—
23.	Benicia City Gymnasium	—
24.	James Lemos Pool Complex	—
25.	Youth Activity Center	—
26.	Fitzgerald Field	4.0
27.	Little League Field	4.0
28.	Ethelree Saraiva Park	0.5
29.	Park D-7 (future)	3.5
30.	Bottle Hill Park (future)	0.5
31.	Hastings Drive Neighborhood Park (future)	10.0
32.	Perth Way Neighborhood Park (future)	8.0
33.	St. Catherine's Wood Neighborhood Park (future)	0.5
<b>SUBTOTAL</b>		<b>716.8</b>
	Benicia State Recreation Area	469.0
	Benicia State Capital Historic Park	1.5

Source: *Parks, Trails, and Open Space Master Plan*

\*These numbers refer to locations on Figure 2-8.

**PARK AND RECREATION FACILITY NEEDS**

The Parks, Trails and Open Space Master Plan evaluated the existing park and recreation system to determine future needs for Benicia. The analysis was conducted for the City as a whole, and for three districts divided along census tract boundaries (see inset in Figure 2-8):

- District 1 is the Downtown and OldTown area, bounded on the north by Military Street.
- District 2 is the Southampton subdivision. This district accounts for almost 70 percent of the City’s population.
- District 3 is the eastern part of the City. It includes a few older residential areas on the east side of East Second Street, but most of it is developed for industrial uses.

**Overall Population**

The *Parks Master Plan* compared acreages of existing and planned park land in relation to both the existing and projected population of the City. Using the standard per acre shown in Table 2-14, the City has more than adequate regional parkland, but is deficient in community and neighborhood parks. *The Parks Master Plan* identified a shortfall of 35 acres of neighborhood park and 18 acres of community park in 2010.

**Table 2-14. Amount of Existing Park Land per Capita**

<b>PARK TYPE</b>	<b>ACRES</b>	<b>ACRES/1,000 PEOPLE</b>	<b>STANDARD (ACRES/1,000 PEOPLE)</b>
Regional Park	577	20	10
Community Park	50	2	2.5
Neighborhood Parks	59	2	3.5
Recreational Facilities	8	0.3	—
<b>Totals</b>	<b>694</b>	<b>24.3</b>	

**District Population**

Using the standards shown in Table 2-14 in the Land Use section, *the Parks Master Plan* found differing parkland needs by district. District 1 has an adequate park land through 2010. District 2 will be deficient by 33 acres of neighborhood park land in the year 2010. District 3 will be deficient by 5 acres of neighborhood park land in the year 2010. Thus most parkland deficiency is in District 2.

**Distance**

The *Parks Master Plan* used a half-mile radius standard to evaluate each neighborhood park. Using this standard, major service gaps were found in the western and southwestern portions of District 2, and the eastern tip of Downtown (District 1).

**Facility Type and Description**

The number of recreational facilities provided in the City and in each district was compared with the recreational facility standards to determine which areas were deficient in given facilities. The evaluation determined that there will be a citywide deficiency of six tennis courts by 2010 (four in District 2; two in District 3).

**FUTURE PARK DEVELOPMENT**

Several sites are shown on Table 2-13 as future parks. A brief description follows.

Park D-7. (Map No. 29). This 3.5-acre neighborhood park is planned for the northeastern portion of the Southampton development. Proposed uses range from a community center, public pool, and tennis courts, to volleyball courts, playgrounds, and croquet courts.

Bottle Hill Park. (Map No. 30). This 0.5-acre neighborhood park, in the southeastern portion of the Downtown area, will provide panoramic views of the Carquinez Strait, and sheltered areas for a tot lot, and picnic facilities.

Hastings Drive Neighborhood Park. (Map No. 31). This proposed 10-acre park is located in the Southampton open space in the central western portion of the Southampton development. The site contains a small drainage channel and is surrounded by existing homes. The topography in the area would necessitate terracing for facilities. The park will include a multi-purpose playing field, tennis court, basketball courts, playground, grass play area, picnic area, path, and benches.

Perth Way Neighborhood Park. (Map No. 32). Perth Way Neighborhood Park is a proposed 8-acre neighborhood park located in the open space in the eastern portion of the Southampton development. The site is relatively flat, but high in elevation, providing views toward Suisun Bay. Planned facilities include a multi-purpose playing field, tennis court, basketball court, playground, grass play area, picnic area, path, and benches.

St. Catherine's Wood Neighborhood Park. (Map No. 33). This 0.5-acre neighborhood park, located directly north of Solano Square at First Street, will include a playground, an entry plaza, and a seating area.

## PARKS AND RECREATION GOALS, POLICIES, AND PROGRAMS

Goals, policies, and programs in this section call for adding parks and recreation facilities while maintaining and improving existing parks and recreation facilities.



**GOAL 2.30:**            **Maintain and improve existing parks and recreation programs.**

**POLICY 2.30.1:**        Enhance existing city recreation facilities and programs.

*Program 2.30.A:*        Develop programs that promote higher and better use of Benicia’s recreation facilities and programs.

Recreation facilities include parks and buildings.

*Program 2.30.B:*        Conduct periodic surveys about ways to improve City recreation facilities and programs.

*Program 2.30.C:*        Direct the Parks, Recreation & Cemetery Commission to annually audit and recommend additions to and updates of the Parks Master Plan.

*Program 2.30.D:*        Establish cooperative relationships with public agencies and applicable public interest groups in developing plans for parks and recreation programs.

*Program 2.30.E:*        Distribute special park features (e.g., gazebos, bandstands, fountains, sculpture, overlooks, etc.) at key locations in neighborhood and community parks to enhance neighborhood character, provide a focus for a park, or create a place for viewing.

*Program 2.30.F:*        Continue to share City park facilities with the School District and consolidate park and school lands wherever feasible.

*Program 2.30.G:*        Develop a process to evaluate existing facilities and determine their utilization.

**POLICY 2.30.2:**        Increase resident awareness of the available recreational opportunities in the city.

*Program 2.30.H:*        Develop public information materials (including a color map and table of citywide recreation facilities), and a comprehensive sign system about parks and recreational opportunities.

**POLICY 2.30.3:**        Incorporate water conservation into park planning and design.

*Program 2.30.I:*        Use primarily native plant species and other drought tolerant plants in all parks and open space areas.



*Program 2.30.J:* Use drip irrigation and other water efficient irrigation methods in all parks.

**POLICY 2.30.4:** Protect plant and animal life as part of any park improvement project involving sensitive habitat areas of local or regional significance.

**POLICY 2.30.5:** Design park improvements to facilitate accessibility and maintenance.

*Program 2.30.K:* Regulate concessions stands in park and recreation areas consistent with the Parks, Trails, and Open Space Master Plan.

**POLICY 2.30.6:** Continue to establish appropriate uses and programs for Lake Herman Regional Park that (a) preserve and maintain its natural condition and scenic value while providing for increased, passive, low impact recreational opportunities and (b) maintain and/or enhance Lake Herman's wetlands to attract a variety of wildlife to the area; (c) preserve rock outcroppings and creekside vegetation.



**GOAL 2.31:** **Maintain safety at parks/open space.**

**POLICY 2.31.1:** Improve and maintain safety in existing parks and design park improvements to facilitate security and policing.

*Program 2.31.A:* Continue coordination with the City police department to provide mobile patrol of parks and open space areas.

*Program 2.31.B:* Continue coordination with the City fire department regarding fire season warning and control, emergency vehicle access, support facilities, and response.

*Program 2.31.C:* Continue to coordinate with neighborhood watch programs to provide added security at parks, along trails, and in the open space areas.

*Program 2.31.D:* Coordinate with the Benicia Unified School District regarding safety concerns at joint use facilities.



**GOAL 2.32: Expand the City’s park system to accommodate future community needs.**

**POLICY 2.32.1:** Establish new parks/recreation areas.

*Program 2.32.A:* Ensure that lands dedicated for park land are of sufficient in size to accommodate the uses and facilities proposed, graded for those uses, and free of hazardous and toxic waste materials for each park site.

*Program 2.32.B:* Regularly monitor County, State, and federal funding sources and apply for loans and grants to acquire, develop, and rehabilitate park land and facilities.

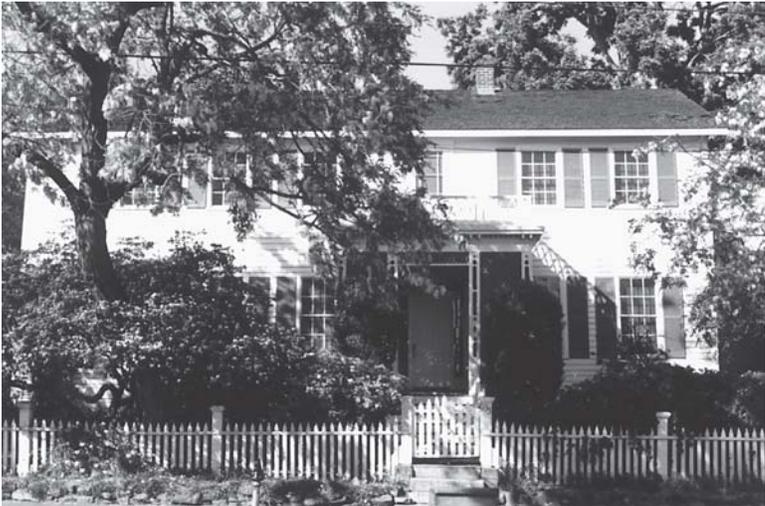
*Program 2.32.C:* Identify and incorporate the needs of neighborhoods in developing new parks and facilities.

**POLICY 2.32.2:** Continue to develop and enhance recreational benefits of the shoreline and seek public access along the waterfront.

*Program 2.32.D:* Explore public access on private waterfront through collaborative planning or a development review process.

**BENICIA STATE PARKS**

The State Department of Parks and Recreation maintains and operates two parks in Benicia: the State Capitol Historic Park and the Benicia State Recreation Area. The 1.5 acre State Capitol Historic Park is located on the corner of First and West G Streets. It includes the building used as California’s State Capitol from 1853–1854, the Fischer-Hanlon House, associated historic structures and Victorian Garden. The 469-acre Benicia State Recreation Area is located in western Benicia along the Benicia-Vallejo border, southwest of I-780. This recreation area is predominantly marsh but also provides extensive hiking, jogging, and biking trails, a fishing area, and picnic areas. (See Chapter 3, Section D, for more information on trails in the Planning Area.)



**GOAL 2.33: Assure long-term maintenance of the State Parks.**

By itself, the City may not be able to assure maintenance of a State park. This implies working with the State to achieve the goal.

*Program 2.33.A:* Develop a Strategic Plan for addressing State park issues.

*Program 2.33.B:* Work with the State to maintain and improve both parks and identify needed improvements.

For example, utility lines that cross the State Recreation Area should be re-routed.

*Program 2.33.C:* Work with the State to keep the State Recreation Area open to the public for day use.

*Program 2.33.D:* Work with the State to assure that the Capital maintains maximum opening hours for public enjoyment and use.

### 3. SCHOOLS

#### EXISTING FACILITIES

##### Public and Private Schools

Benicia is served by the Benicia Unified School District (BUSD). Within the Benicia city limits are five public and one private elementary schools, one public and one private intermediate



school, one public high school, and one continuation high school. For the 1997-98 school year, fall district-wide enrollment was 5,381. Enrollment figures for each school facility are shown in Table 2-15.

*Table 2-15. School Enrollment and Capacity, 1997–1998*

SCHOOL	GRADE LEVEL	ENROLLMENT 1997-1998	CAPACITY 1997-1998
<b>Public Schools</b>			
Semple Elementary	K-5	448	516
Mills Elementary	K-5	374	474
Mary Farmer Elementary	K-5	450	515
Henderson Elementary	K-5	657	671
Turner Elementary	K-5	478	518
Benicia Middle School	6-8	1,312	1,351
Benicia High School	9-12	1,586	2,089
Liberty High School	9-12	76	86
<b>Private School</b>			
St. Dominic's	K-8	346	346

#### FUTURE FACILITIES

The number of students expected in Benicia's schools, and the need for additional facilities is closely related to the amount of new housing. The District has some capacity to accommodate existing infill potential but can not accommodate significant new development.

The student generation rates used by the City and BUSD based on 1990-91 statistics assume 0.10 elementary school students for a multi-family housing unit and 0.30

<sup>8</sup> Capacity can vary according to the distribution of portable classroom facilities among the various campuses. In addition, as new construction is completed, these figures must be revised.

elementary school students for a single family housing unit. For middle school, the rates are 0.045 for a multi-family unit and 0.14 for a single-family unit. For high school, the rates are 0.055 for a multi-family unit and 0.16 for a single-family unit.

Based on these generation rates the following table illustrates existing and projected enrollment to Year 2002.

**Table 2-16. School Enrollment, 1997 and Projected**

SCHOOL	ACTUAL 1997	ACTUAL 1998	PROJECTED 2000	PROJECTED 2002
Public Schools				
K-5	2,425	2,407	2,407	2,348
6-8	1,303	1,312	1,350	1,420
9-12	1,550	1,662	1,938	2,014
<b>PUBLIC SCHOOL TOTAL</b>	<b>5,278</b>	<b>5,381</b>	<b>5,682</b>	<b>5,782</b>
Private School	346	346	346	346

Source: Benicia Unified School District; St. Dominic's Priory School

Given limited residential buildout in the City, no new schools are anticipated. The high school is developing a progressive capacity master plan for the expansion of facilities to make room for new students on the existing 47-acre site. Increasingly, school districts rely on development permit fees to generate funds for new school facilities. Based on 1997 fee rates, the District calculates that about one-third of the cost of the new school facilities needed to serve new development generated by this Plan would be funded.

### SCHOOLS GOALS, POLICIES, AND PROGRAMS

Goals in this section stress City/School District cooperation.



**GOAL 2.34:**            **Ensure adequate school facilities to serve all residential areas.**

**POLICY 2.34.1:**        Approve new residential projects only if adequate school facilities are available or will be available when needed.

*Program 2.34.A:*        Continue to work with the School District to identify appropriate sites if needed for future expansion and new construction of public schools.



**GOAL 2.35: Cooperate with the School District to provide opportunities for citizen use of the schools.**

**POLICY 2.35.1:** Continue to seek innovative ways for the City to use school facilities and grounds jointly with the School District.

*Program 2.35.A:* Continue to maintain and implement the joint-use agreement between the City and BUSD.

*Program 2.35.B:* Maintain zoning that, in the event any schools are closed or relocated, will support the reuse of closed school sites for public or quasi-public uses.

#### 4. WATER

##### **Sulphur Springs Creek Watershed and Lake Herman**

Sulphur Springs Creek and its main tributary, Paddy Creek, form the largest watershed within the Planning Area. Of the approximately 18 square mile watershed area, the upper six square miles lies outside of the Planning Area in the Vallejo Sphere Of Influence. Paddy Creek, which drains a three square mile watershed, joins the lower reach of Sulphur Springs Creek just below the Lake Herman outlet.



The Lake Herman reservoir on Sulphur Springs Creek stores watershed runoff along with excess water from the North Bay Aqueduct, a component of the State Water Project and the City's principal potable water supply. The reservoir is typically filled during the spring and drawn down during the summer and fall. Both the City and Exxon draw on the reservoir during periods of high demand.

##### **WATER SUPPLY**

Benicia has a long history of having a local shortage of fresh water. Benicia's potable water is currently supplied by the California State Water Project (SWP) through the North Bay Aqueduct (and the City of Vallejo in the event of a water shortage). The City's Water Treatment Plant is located on Lake Herman Road and was expanded in 1989.

##### **WATER QUALITY**

Water quality problems typical of commercial and residential land uses affect aquatic habitat and stormwater discharge throughout the urbanized portions of the Planning Area. Lake Herman, which is the City's back-up water supply, is considered a

eutrophic water body by the Regional Water Quality Control Board (RWQCB). Eutrophic waters are characterized by high nutrient loads, excessive algal and aquatic vascular plant growth, low water clarity, and reduced oxygen concentrations in bottom waters. However, the City also stores good quality North Bay Aqueduct water in Lake Herman, and the current mixture of water in the lake is deemed sufficient to meet water quality standards.

While no specific data are available on water quality for other surface waters in Benicia, it is reasonable that water quality in other minor creeks and drainages would be similar to that found in other urbanized portions of the Bay Area, since Benicia is subject to the same point and non-point sources as other jurisdictions.

#### **Groundwater**

The Public Safety Background Report lists a number of confirmed and potential groundwater contamination sites throughout the City. However, Benicia's reliance on imported SWP water for its municipal water supply means that the groundwater quality problem sites have little significant impact on drinking water quality. Instead, they have the potential to affect water quality in local creeks and the receiving waters in the Carquinez Strait and Suisun Bay, since groundwater eventually flows to surface locations.

Groundwater contamination upstream from Lake Herman could reach the City's water supply. Two upstream contamination sites have been identified at Syar Quarry and the Hastings Mercury Mine. While these sites appear to be of relatively lower concern than downstream sites, they should be monitored.

#### **WASTE WATER TREATMENT**

Benicia's sewer system dates from the time when sanitary sewers and storm drains flowed together into the Carquinez Strait. Separation of sanitary from storm water flows was completed and interceptors were constructed to carry waste water to the Waste Water Treatment Plant (WWTP) at the lower end of East Fifth Street.

In June 1996, Benicia residents passed a bond measure to upgrade the City's wastewater treatment plant (WWTP). The upgrade will (a) increase the WWTP's firm capacity to sufficiently serve existing development and projected infill development within existing City Limits, (b) eliminate excessive noise, odors, and the use of gaseous chlorine from the Plant, (c) address problems with deteriorating equipment and facilities, and (d) create a flood wall along the southern and eastern borders of the Plant.

#### **WATER GOALS, POLICIES, AND PROGRAMS**

Goals, policies, and programs focus on meeting the needs of the existing and future development envisioned by this Plan with an adequate supply of high quality drinking water and sufficient wastewater treatment capacity.



**GOAL 2.36: Ensure an adequate water supply for current and future residents and businesses.**

**POLICY 2.36.1:** Approve development plans only when a dependable and adequate water supply to serve the development is assured.

**POLICY 2.36.2:** Continue to pursue and secure adequate water sources of the highest quality available.

*Program 2.36.A:* Pursue use of reclaimed wastewater—especially for major industrial users—where feasible.

**POLICY 2.36.3:** Implement measures to reduce water consumption.

*Program 2.36.B:* Initiate water conservation programs and conduct drought contingency planning.

*Program 2.36.C:* Continue to implement City-adopted water conservation Best Management Practices (BMP). (see Glossary)

*Program 2.36.D:* Continue to require development to utilize adopted City standards for low-water-use landscaping.

**POLICY 2.36.4:** Encourage public and private uses to minimize water use and to recycle processed water whenever and wherever feasible.

*Program 2.36.E:* Promote the retrofitting of public buildings with water conservation features.

*Program 2.36.F:* Assist hospitality-related businesses to actively promote water conservation.



**GOAL 2.37: Identify and preserve groundwater resources.**

**POLICY 2.37.1:** Work with the RWQCB to protect groundwater quality.

**POLICY 2.37.2:** Ensure the cleanup of groundwater contamination resulting from the IT Panoche Hazardous Waste Facility.



**GOAL 2.38: Protect water quality.**

**POLICY 2.38.1:** Continue to require the use of feasible and practical Best Management Practices (BMP) to protect receiving waters from adverse effects of construction and urban runoff.

*Program 2.38.A:* Continue the Storm Water Pollution Prevention Program (SWPPP) and the Industrial Pretreatment Program, and continue to implement the Erosion Control Ordinance.

Such measures would include providing water conservation literature to visitors and tourists and installing a full range of water-conserving fixtures in hotels and restaurants.



**GOAL 2.39: Provide safe drinking water and improve its taste and odor.**

**POLICY 2.39.1:** Ensure that water quality goals are consistently met.

*Program 2.39.A:* Continue to cooperate in regional efforts by organizations such as the CALFED Program to improve the quality of the City's source water.

*Program 2.39.B:* Continue to optimize treatment operations in conjunction with the implementation of the City's five- and 10-year Capital Improvements Programs.

*Program 2.39.C:* Educate the public about City efforts to improve the taste and odor of its drinking water.



**GOAL 2.40: Ensure adequate wastewater treatment capacity to serve all development shown in the General Plan.**

**POLICY 2.40.1:** Approve changes in land use designations for new development only if adequate wastewater treatment capacity is assured.

**POLICY 2.40.2:** Promote use of reclaimed wastewater where feasible.

*Program 2.40.A:* Prepare, adopt, and implement a sewer maintenance and replacement program.

*Program 2.40.B:* Continue to implement the City's Wet Weather Management Plan.

**POLICY 2.40.3:** Encourage developments with projected high strength discharges to reduce pollutants directly to the City's wastewater system.

*Program 2.40.C:* Educate developers about recycling and other technological methods where feasible.

*Program 2.40.D:* Continue to pursue the City's Pollution Prevention Program for all users of the City's wastewater system including commercial, industrial, and residential.

*Program 2.40.E:* Continue to pursue the City's pretreatment program for industrial dischargers.



**GOAL 2.41: Minimize WWT operational upsets, potential discharge of inadequately treated wastewater, and the emission of odor and noise.**

**POLICY 2.41.1:** Continue efforts to replace the gaseous chlorine system with a less hazardous chemical (such as a liquid chlorine system) that

will address the potential safety impacts to the neighborhood surrounding the WWTP.

**POLICY 2.41.2:** Continue to work with neighbors to implement programs that minimize odor, noise, and potential safety impacts to the neighborhood surrounding the WWTP.

## 5. RECYCLING GOALS, PROGRAMS, AND POLICIES



**GOAL 2.42:** Enhance the recycling of solid waste.

**POLICY 2.42.1:** Strive to accomplish the mandated objectives of the California Integrated Waste Management Act.

*Program 2.42.A:* Adopt and implement a Source Reduction and Recycling Plan (SRRP) and Hazardous Household Waste Plan (HHWP) which include components for waste characterization, source reduction, recycling, composting, special waste diversion, education, public information, disposal facility capacity, funding, and the safe use, disposal, and recycling of household hazardous materials.

*Program 2.42.B:* Encourage local recycling facilities to be available to the public.

*Program 2.42.C:* Pursue establishment of curbside service that would pick up and compost yard waste and make it available to City residents for a reasonable cost.

## 6. UTILITIES

The City of Benicia owns and operates its own water and wastewater treatment plants. Additionally, the City owns a seven acre corporation yard, where maintenance equipment is stored and maintained.

### POWER AND ENERGY USE

Benicia's principal sources of power come from natural gas and electricity supplied by the Pacific Gas and Electric Company. The regional supply system which feeds Benicia is a closed loop system; thus interruption of any single trunk line would not result in a complete blackout. No reliable estimate of future demand for power is possible due to variables of energy availability and the effects of the economy on new construction. No immediate limitations on supply capability are forecast.

### TELECOMMUNICATIONS

Telephone communication is generally provided by Pacific Bell to Benicia. Century Cable provides television cable for subscribers in Benicia.

Growth and change in the telecommunications field has resulted in unprecedented demand for new commercial antenna and associated equipment. The antennas and associated structures can pose aesthetic problems because of their size, location, or number. The City controls antennas and similar structures through the use permit process.

UTILITIES GOALS, POLICIES, AND PROGRAMS



**GOAL 2.43:**      **Allow installation of telecommunications equipment and distribution networks that maintain and protect health, safety, and quality of life and avoid visual clutter.**

**POLICY 2.43.1:**      Minimize the visual impacts of siting exposed commercial antenna structures in scenic corridors and residential and historic districts.

*Program 2.43.A:*      Establish design requirements for commercial antennas and associated equipment and distribution networks.



# 3. COMMUNITY IDENTITY

Benicia is committed to preserving and enhancing its unique geographic and cultural inheritance. It is located at the gate of California’s great waterways. The City’s heritage and resources are described in *Gateway to the Inland Coast: The Story of the Carquinez Strait* by Andrew Neal Cohen, (1996, California State Lands Commission); *Great Expectations: The Story of Benicia California*, by Richard Dillon (1980, Benicia Heritage Books); and *Benicia: Portrait of an Early California Town*, by Robert Brueggemann (1980, 101 Productions).

## A. HISTORIC RESOURCES

Benicia has a rich and fascinating past: historic buildings, archaeological sites, and the traditions and folkways of the community’s diverse residents. These resources—all part of Benicia’s cultural heritage—provide continuity with the past, create jobs, improve housing, offer a pleasing visual setting, enhance the quality of life, and have the potential to draw thousands of visitors. Appendix B of the Historical and Archeological Background Report (March 1996) lists Benicia’s historic landmarks, resources, and buildings. Figure 3-1 is a diagram of Benicia’s historical sites.



## 1. NATIVE AMERICAN PERIOD

The Vallejo-Benicia area was originally settled by the Southern Patwin group of Native Americans. The Southern Patwin inhabited areas west of the Sacramento River and north of the Carquinez Strait. By the beginning of the 20th century, the Southern Patwin were extinct.

The Patwin were a hunting and gathering society that depended mostly on acorns and marine supplies for sustenance. They settled next to water. The nearest Patwin villages definitely located are on the Napa River and near Fairfield, and there are mortar sites at the Benicia State Recreation Area. Although early explorers reported seeing villages on the north shore of the Carquinez Strait and mapped a village at the head of Southampton Bay, it remains unclear if this region was regularly inhabited, how it was utilized, and who used it.

## 2. HISPANIC PERIOD

Between the 1820s and 1840s, the Spanish parceled out the land around Benicia in large land grants to officers and their families. A large Spanish land grant—the Soscoe land grant of Rancho Suscol—covered what were to become the future sites of both Vallejo and Benicia. Rancho Suscol was obtained by General Mariano Vallejo in 1844 from Governor Micheltorena.

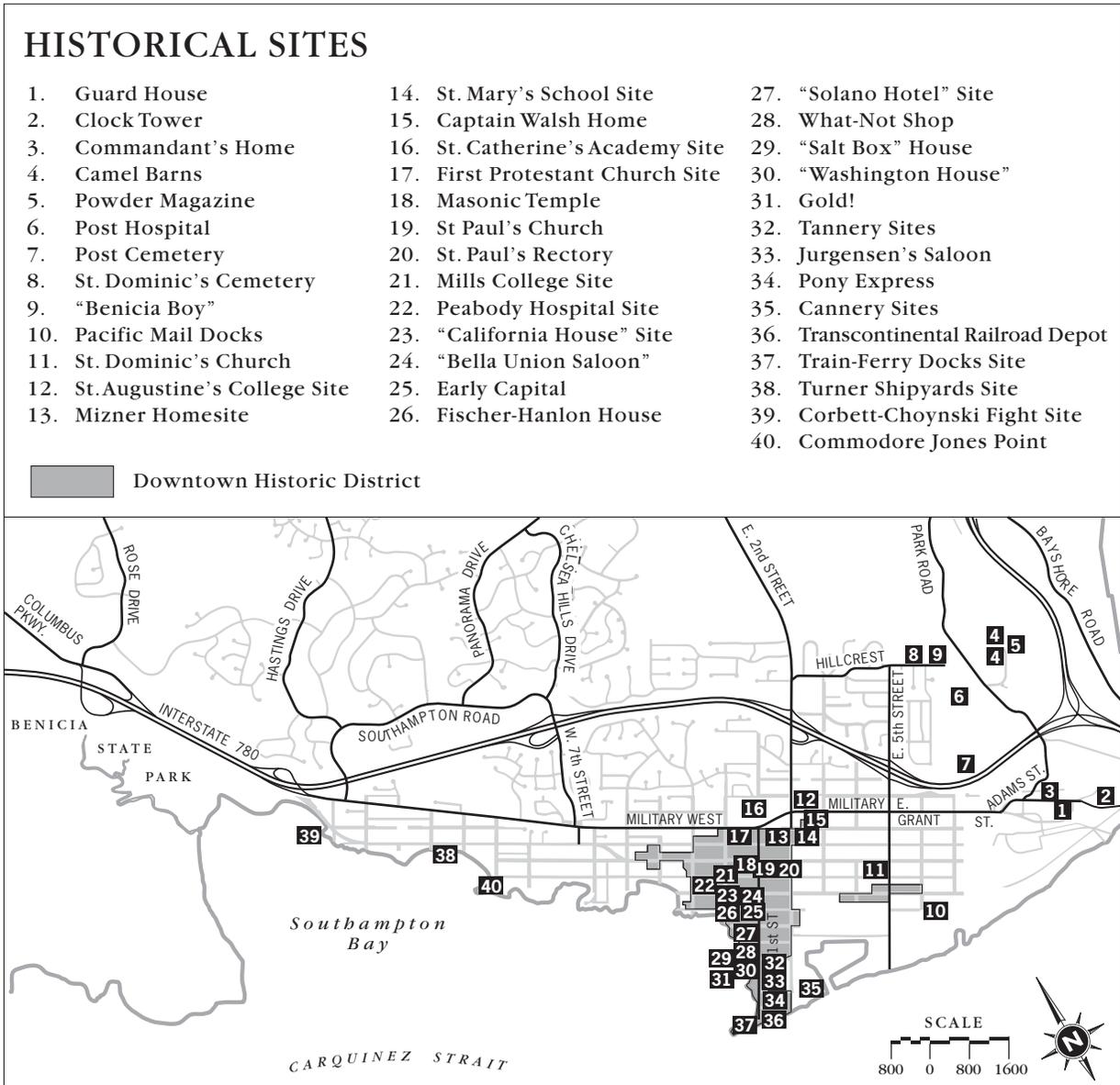
This land ownership pattern lasted until the Mexican-American War, after which California was granted to the United States as part of the Treaty of Guadalupe Hidalgo. California was admitted into the union in 1850.

## 3. AMERICAN PERIOD

In 1846, Robert Baylor Semple, an immigrant from Kentucky, arrested General Mariano Vallejo and persuaded his prisoner to deed him half-interest in a tract of Rancho Suscol. Semple founded Benicia that same year, named in honor of General Vallejo's wife.

The Benicia Arsenal, located on a large tract of land east of the community and overlooking the Strait, was acquired between 1847 and 1849 by the federal government for use as a military reservation. Several army installations preceded the Arsenal, which was named the "Benicia Arsenal" in 1852. It was one of five permanent arsenals in the country and the first on the Pacific Coast.

In 1850, Benicia and Monterey were the first two cities in the State of California to incorporate. Also in 1850, Benicia was named the government seat for Solano County. Soon thereafter, Benicia was established as a port of entry by the United States Congress. On February 4, 1853, the State Legislature voted to move into Benicia's new City Hall and make it the State Capital.



**Figure 3-1. Historic Sites**

Benicia was the State Capital for only a year. In 1854 the Legislature was persuaded to relocate to Sacramento. In 1859, the county seat was moved from Benicia to Fairfield.

Benicia was also home to the earliest of California’s educational institutions. Several schools were established in Benicia in the mid-19th century, including Dominican College and Mills College, though both campuses were relocated by 1900. Benicia was home to the state’s first official Masonic Hall, built in 1850, and the depot and shops of the Pacific Mail Steamship Company—the first large industrial enterprise in California.

In the late 1800s, Benicia was a center for agricultural and mineral production. The first railroad ferry west of the Mississippi River began service in 1879 at the foot of

First Street. By 1880, one-third of all leather produced in California was manufactured at three locations in Benicia, primarily at the foot of First Street.

#### 4. ARCHAEOLOGICAL SITES

One known archaeological resource is an underwater site at the Matthew Turner Shipyard State Park. There lie the remains of the Stamboul, originally designed and built on the east coast to ship ice from New England to India, then converted to a whaling ship. The park is a National Register of Historic Places District.

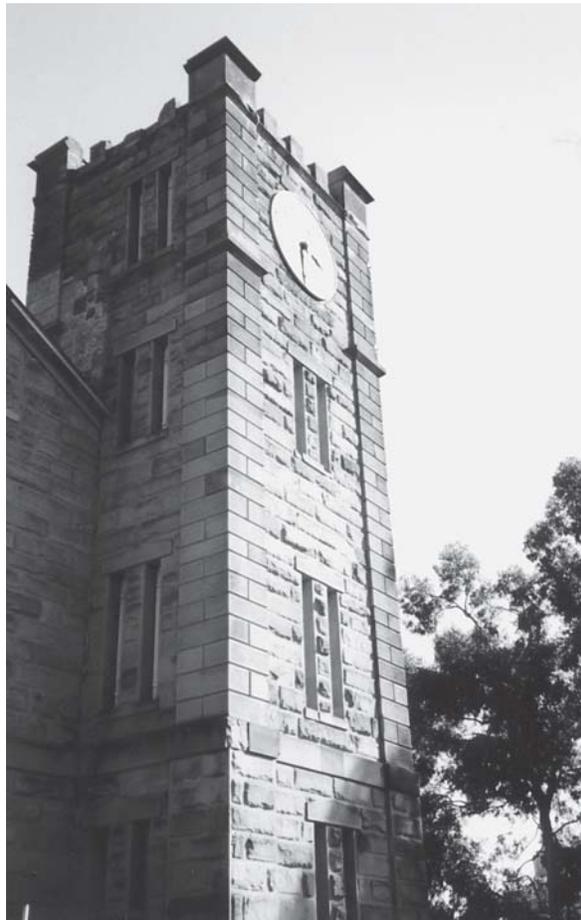
Six other archaeological sites may also exist within Benicia's City Limits. One may be located in the vicinity of Lake Herman Road and the Suisun Bay marsh. The other potential sites are located in the Arsenal and Downtown.

#### 5. HISTORIC BUILDINGS, SITES, AND AREAS

##### WATERFRONT

Much of Benicia's history was influenced by its location along the Carquinez Strait, where the rivers of the Central Valley that flow into San Francisco Bay shaped the transcontinental railway and the international shipping trade. Benicia's waterfront and transportation activity molded its social, commercial, and military history. Primary industries—tanneries, canneries, and shipyards—located along the waterfront.

The waterfront has been the subject of several governmental plans. A Special Area Plan for the Benicia Waterfront was completed in 1977 by the San Francisco Bay Conservation and Development Commission. The Benicia Urban Waterfront Restoration Plan was prepared by the City in 1991 for the California State Coastal Conservancy Urban Waterfront Program. The Plan focused on the 24 acres of Downtown bounded by the





Carquinez Strait to the south and west, F and B Streets to the north, and the marina to the east. It sought a balance between the needs to preserve the history of the area, to preserve open space, to enhance access to the waterfront, and to create new activities and commerce.

#### **ARSENAL**

The Benicia Arsenal was established in 1852 on 345 acres. The buildings were developed to serve the needs of different Army sections that used the land. Residential areas and quarters were scattered throughout the site. Along with 24 frame, brick, and stone structures built between 1854 and 1911, there are many newer buildings constructed during World War II.

The Arsenal was deactivated in 1963 and the Defense Department transferred ownership to the City of Benicia in 1965. The federal government transferred public trust lands within the Arsenal's waterfront to the State. The State granted these lands to Benicia to be managed according to the terms of the grant and consistent with the public trust doctrine, a common law generally immune from legislative change.

At first the City leased land and buildings to Benicia Industries, Inc. Eventually the City transferred title to much of the Arsenal to Benicia Industries to develop the Industrial Park and operate the Port. The City, however, retained ownership of several of the most historically significant structures, including the Commandant's house, the Clocktower building, the Camel Barns, and one of the original powder magazines.

The Arsenal area includes four distinct historic districts included on the National Register of Historic Places, and is also registered as State Historical Landmark No. 176. To preserve these historic resources, the City adopted the Arsenal Historic Conservation Plan in 1993. This plan includes goals, objectives, design guidelines, and criteria to guide development and alterations to existing structures.

Recently remodeled live/work spaces accommodate part of the Benicia arts community. Thus the Arsenal includes a mix of residential, commercial, and industrial uses similar to the historic mix of uses during its long period of military use.



## **DOWNTOWN**

Benicia's Downtown, centered on First Street from the waterfront to Military, is the historic and cultural heart of the City. Settlement in the Downtown area began soon after the town was platted in 1847. Streets were laid out without regard to topography in a rectangular grid that extended into the water. Growth intensified when the State Capitol was briefly located in Benicia from 1853-1854. Through the remainder of the 19th century, development spread north from the waterfront, concentrated along two ridges of land that ran south from the highlands, to the Strait.

Recognizing the importance of Benicia's historic Downtown, the City created an expanded historic district and adopted the Downtown Historic Conservation Plan in 1990 (amended 1992). The Downtown Historic District includes properties along both sides of First Street from Solano Square (Military) to the waterfront, and for several blocks to the east and west of First Street. The district was created not only to preserve historic buildings, but to help maintain and enhance the variety of activities that make up the historic quality of the area.

## **6. HISTORIC PRESERVATION**

Downtown has been recognized by Benicia as a historic district since 1969. However, its boundaries originally encompassed only 150 feet on either side of First Street from A Street to Military. This area represented the historic commercial spine of Downtown, but it omitted much of the surrounding historic residential neighborhood, the development of which was inextricably linked to First Street.

In 1987, the City enacted a provision within its zoning ordinance for a special historic overlay district that could be combined with any underlying zoning district. In 1989, based on extensive surveys and documentation by volunteers, consultants, and historians, the City identified two potential historic districts: one encompasses the Downtown commercial and residential area centered along First Street, and the other falls within the boundaries of the former Benicia Arsenal. In 1990 and 1993, the city prepared and adopted conservation plans for the Downtown and Arsenal historic overlay districts respectively.



**GOAL 3.1: Maintain and enhance Benicia’s historic character.**

**POLICY 3.1.1:** Encourage reuse of historic buildings; if feasible, encourage relocation rather than demolition.

*Program 3.1.A:* Continue to maintain a current inventory of historic and architectural resources in the city.

**POLICY 3.1.2:** Enhance the economic potential of historic and architectural assets.

**POLICY 3.1.3:** Preserve historic trees and landscapes. (Refer to the Arsenal Historic Conservation Plan, November 1993, for guidance on historic trees and landscaping.)

*Program 3.1.B:* Become a Certified Local Government (CLG) by applying to the State Department of Historic Preservation. (See explanation below.)

The CLG program gives local authorities the ability to designate local historic districts, structures, and sites and to have more direct participation in federal and statewide historic preservation programs. CLGs are eligible for special matching grants for projects that further local historic preservation objectives.

Completion of an historic resources inventory and creation of a local Historic Preservation Commission would qualify Benicia as a CLG. Benicia would then be eligible for federal funds that are available only to CLG cities.

*Program 3.1.C:* Define the boundaries necessary to preserve the historical significance of the Camel Barn complex.

*Program 3.1.D:* Continue to work and cooperate with the Benicia Historical Society on historic preservation issues.

**POLICY 3.1.4:** Promote the preservation and enhancement of historic neighborhoods, commercial areas, and governmental districts.

**POLICY 3.1.5:** Permit new development, remodeling and building renovation in historic districts when consistent with the policies of the applicable Historic Conservation Plan.

**POLICY 3.1.6:** Promote restoration of public and privately-owned historic and architecturally significant properties.

Significant City-owned structures in danger of deterioration include the Commanding Officer's Quarters, Powder Magazine, Railroad Depot, and Von Pfister Adobe. Other historic and architecturally significant properties where restoration efforts should be focused are the Arsenal area and the Camel Barn complex and sites.

*Program 3.1.E:* Develop a program for inspections of historic structures.

*Program 3.1.F:* Seek public and private funding for historic preservation and maintenance.

*Program 3.1.G:* Develop a program for property tax incentives.

The City can encourage the rehabilitation of privately owned historic buildings by providing potential buyers with information about California's Mills Act and federal Investment Tax Credits.

*Program 3.1.H:* Consider waiving or reducing building permit fees for qualified work necessary to rehabilitate or restore historic structures.

*Program 3.1.I:* Publicize opportunities and incentives for historic preservation to owners of historic buildings.

*Program 3.1.J:* Continue to assist owners of historic homes in lower-income areas with low interest loans through Community Development Block Grants (CDBG), when available.

*Program 3.1.K:* Establish a Historic Preservation Commission.

*Program 3.1.L:* Adopt and maintain a landmarks ordinance.

*Program 3.1.M:* Inform title companies that properties in Benicia may be affected by historic preservation regulations.

## 7. HISTORIC AND ARCHAEOLOGICAL RESOURCES GOALS, POLICIES, AND PROGRAMS

Goals, policies, and programs in this section deal with protecting archaeological resources; preserving and restoring Benicia’s historic assets; and ensuring that new development and additions are compatible with historic assets.



**GOAL 3.2: Protect archaeological (including underwater) sites and resources.**

**POLICY 3.2.1:** Ensure the protection and preservation of artifacts in known, and as yet unidentified, areas.

*Program 3.2.A:* Work with the California Archaeological Inventory to develop an inventory of existing and potential archaeological sites.

*Program 3.2.B:* Refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory.

*Program 3.2.C:* Develop City regulations regarding inspections, code enforcement, and regulation of pot hunters.

*Program 3.2.D:* Require that all sites with archaeological resources likely to be disturbed by a proposed project be analyzed by a qualified archaeologist and an appropriate program developed to mitigate any impacts from the project.

## B. CULTURAL RESOURCES



Benicia is a city with history, character, and a good quality of life. This “cultural landscape” is evidenced by the original town plan, the historic buildings, the alleys, and the remnants of piers and shipyards. “Quality of life” is a reflection of how people work, play, travel, and live. Based on the January 1996 community survey, the consensus in Benicia is that the quality of life is worth preserving.

Benicia’s lifestyle is active and diversified around the

community’s many assets: First Street, the parks, an abundance of recreational activities, the Marina, the Library, and the Arsenal. Public and private organizations sponsor activities for every interest area. Many schools, churches, and the Senior Center offer their facilities to support community cultural activities.

Whether formal or informal, all community activities contribute to Benicia’s identity and quality of life. The contribution may be impossible to quantify, but it is necessary to keep in mind, not only for its short-term benefit to the local economy but ultimately, to the community’s long-term sustainability.

### 1. COMMUNITY CULTURAL FACILITIES AND ACTIVITIES

Benicia enjoys a variety of public and privately owned cultural facilities that are managed by the City and other organizations (see Figure 2-7 for a diagram of publicly owned facilities). The civic complex includes the City Hall, the Police Department, a youth center, a senior center, a post office, and a public library. Other City-owned facilities include two houses used by the Boy Scouts and Girl Scouts, the Clocktower, the Commandant’s House, and the Camel Barn complex in the Arsenal. Privately owned recreational and cultural facilities include the Southampton Swim Club and B.D.E.S. Meeting Hall.

Benicia is also home to several historic museums: the former State Capitol Building, the Camel Barn complex, and the Fire Museum.

## 2. CULTURAL GOALS, POLICIES AND PROGRAMS

This section sets goals for community recognition of the existence and value of Benicia’s cultural resources and programs. Special attention is given to the Library, Camel Barn Museum, and community-wide special events.



**GOAL 3.3:**                    **Increase public awareness of cultural resources and activities.**

**POLICY 3.3.1:**                Preserve and enhance cultural organizations, resources and activities.

*Program 3.3.A:*                Utilize the City’s web page and other information sources to advertise cultural activities.

*Program 3.3.B:*                Continue City funding of cultural activities and the Camel Barn museum.

*Program 3.3.C:*                Require periodic reports of the results of City funding.

*Program 3.3.D:*                Investigate the creation of a City-appointed cultural commission.

*Program 3.3.E:*                Develop promotional materials that increase community awareness of the Camel Barn museum.

*Program 3.3.F:*                Expand the museum to include other historic buildings.



**GOAL 3.4**                    **Support the library and the services it provides to the community.**

**POLICY 3.4.1:**                Maintain and expand library services.

*Program 3.4.A:*                Keep the library up-to-date with electronic and other technological developments.

*Program 3.4.B:*                Plan for expanding library services into existing unfinished basement space as needs dictate.

**POLICY 3.4.2:**                New development will be required to underwrite additional library materials.

*Program 3.4.C:*                Maintain an adequate “book fee.” (See Glossary for definition.)



**GOAL 3.5:**                    **Promote events with wide community attraction.**

**POLICY 3.5.1:**                Support community-wide and special events, such as arts in the park, a farmers’ market, and open studios.

**POLICY 3.5.2:**                Plan special events while keeping in mind the need to minimize noise and traffic congestion.

### 3. THE ART COMMUNITY



Benicia's vibrant arts community is one of its prominent assets. The availability of large open spaces in the Arsenal buildings draws accomplished artists and arts-related businesses to the Lower Arsenal.

The history of Benicia's art community dates back to the post Korean War era. Artists exhibited and sold works from the Railroad Depot Gallery and the Tipton Tea Room on First Street.

Since then many diversified activities and events have become an established part of the art community. Among the most notable are:

- the Benicia Old Town Theater Group, which began providing high-quality theatrical productions in 1964;
- establishment of several renowned glass studios;
- establishment of Benicia Community Arts in 1980, which serves as an umbrella arts organization; and
- the Camel Barn Museum, established in 1982.

In 1984, a Mayor's Committee on Culture was appointed to assess Benicia's cultural heritage and resources, evaluate existing programs, and make recommendations for the future of arts and culture in the community. Recommendations included establishing a cultural commission and a center for library and cultural activities; creating a funding structure for cultural pursuits; and inclusion of an arts and culture section in the General Plan.

A direct result of the Mayor's Committee on Culture was the establishment of Arts Benicia in 1988. This organization administers arts-related issues for Benicia, and to coordinate, fund, and publicize arts for public benefit. The group was instrumental in the adoption of the Live/Work Ordinance, which changed zoning to allow artists to live and work in their Arsenal studios.

In 1993, Arts Benicia opened a gallery in converted warehouse space in the Arsenal. The gallery is a nucleus for the evolving Arsenal community.

Of the 1984 Mayor's Committee recommendations, the library and an art gallery have been built and the Art in Public Places Program has been initiated. However, the issues of establishing a cultural commission and a funding structure have yet to be addressed.

#### 4. ART GOALS, POLICIES, AND PROGRAMS

This section sets goals for recognition of the existence and value of Benicia's art community. It calls for supporting and promoting the arts, and installing art in public places.



**GOAL 3.6:**                    **Support and promote the arts as a major element in Benicia's community identity.**

**POLICY 3.6.1:**                Attract and retain art-related businesses.

**POLICY 3.6.2:**                Continue to allow and encourage live/work spaces for artists.

*Program 3.6.A:*                Evaluate where live/work spaces are allowed and what restrictions are placed on them.

*Program 3.6.B:*                Encourage expansion of art retailing on First Street.

**POLICY 3.6.3:**                Enhance public places with art.

*Program 3.6.C:*                Work with developers and builders to incorporate public art into projects, where applicable.

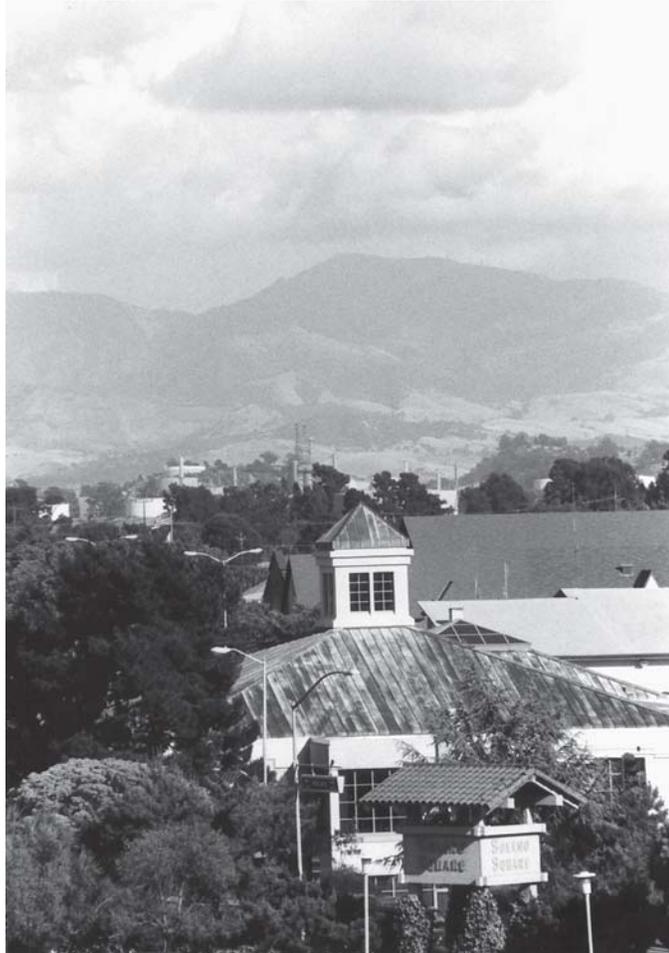


## C. VISUAL CHARACTER

### 1. WHAT IS VISUAL CHARACTER?

This section is concerned with the location, mass, and arrangement of the various components of development. Visual character combines elements of city planning, architecture, and landscape architecture, and attempts to give form, in terms of both beauty and function, to selected urban areas or to whole cities.

This section focuses on how Benicia looks and feels. It attempts to translate an intangible sense of place into tangible policies and programs that will keep Benicia a fine place to live, to work, and to raise a family.



### 2. THE LOOK AND FEEL OF BENICIA

#### NATURAL FEATURES

Benicia is a place of immense natural variety and beauty. The city is connected by salt water to the Golden Gate and the Pacific Ocean. Marshes along the Carquinez Strait cradle a rich variety of life. Rolling hills rise dramatically from the water's edge. The hills and the water inevitably become a component of the human landscape both visually and ecologically. They provide the natural qualities that contemporary development seeks.

#### THE HUMAN LANDSCAPE

The form that settlement in Benicia took over its 150 years is no less dramatic. The grid pattern of streets in the south portion of town reflects a mercantile orientation.

The rectangular blocks and lots were simple to lay out and easily accommodated a variety of uses. The scale reflected a time when commerce was conducted in smaller increments and manufacturing was primarily by hand. The mix of uses reflected the practical needs of daily life and the three miles per hour one could manage on foot. By contrast, the curvilinear and auto-oriented street patterns of Southampton would not have been possible without contemporary engineering capabilities.

Streets, plazas, squares, and formal open spaces such as City Park are the living rooms of the community. They are the places where random personal contacts can reinforce social, political, and commercial relationships.

The City's industrial park is largely separated from most of residential Benicia by intervening hills. Large expanses of paved areas surround buildings of a size and form vastly different from the residential districts. From an urban design perspective, what is most important about this industrial area is that it is relatively homogenous and completely separate from the rest of the community.

The Exxon Refinery is an exception. Because it is built among the hills, as opposed to most of the industrial area, individual structures are visible as one moves along the surrounding roads and from some residential areas and the Downtown. The color of the pipelines reinforces their connection to the refinery even as they move out beyond the complex and across the landscape.

### 3. SCENIC VIEWS, STREETS, AND GATEWAYS

#### **SCENIC VIEWS**

Benicia is rich with views and vistas; views of the water, of the hills, and of the community from within and from external locations define Benicia's community character. Figure 3-2 identifies the more important views and vistas.

In addition, there are a number of framed streetscape views, such as along First Street, that warrant preservation or enhancement. Such streetscape views are more urban, intimate, and enclosing as opposed to grand, sweeping views of the hills, water, and city.

#### **WATERFRONT**

The Carquinez Strait and Benicia's waterfront form the entire southern boundary of the City. The shoreline is a unifying visual element, continuous from bridge to bridge, that can be enjoyed from the many hillside and hilltop vantage points in town. The waterfront provides Benicia with a sense of identity and place, and it recalls the town's history as an early and important riverfront community. The views across the Strait to the undeveloped hills of Contra Costa County offer an invaluable reminder of what California once looked like. Benicia's waterfront is a natural and historic resource, and is an essential element of the community's identity.

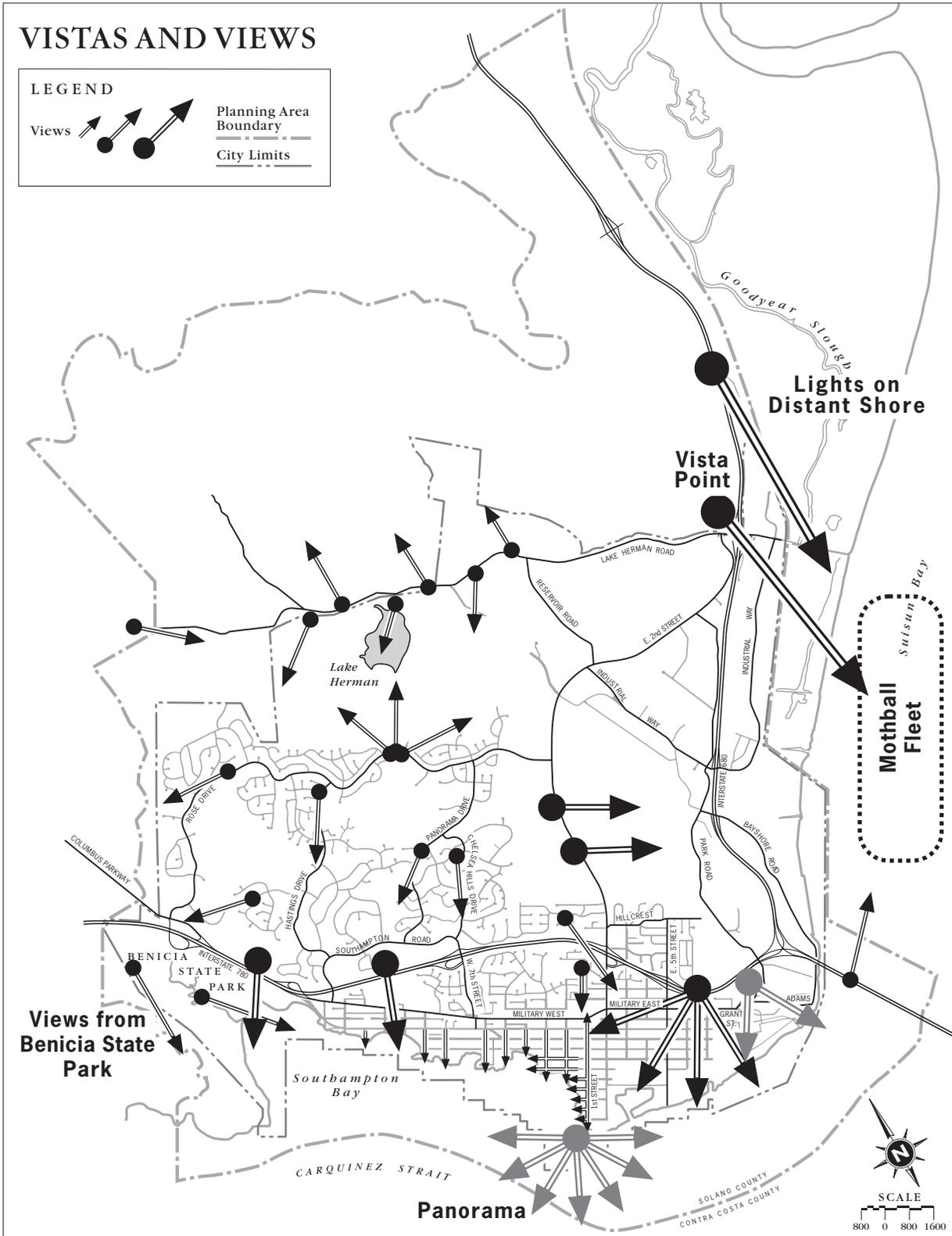


Figure 3-2. Vistas and Views

### **SCENIC STREETS AND GATEWAYS**

A variety of scenic resources can be viewed from three principal routes:

- I-780 between Glen Cove Road and the Benicia-Martinez Bridge;
- I-680 between Morrow Lane and the Benicia-Martinez Bridge; and
- Lake Herman Road.

Along these scenic routes are four natural gateways to the community. (A diagram of the gateways can be found on Figure 1-3.) The topography and road configuration leading to each gateway tend to block views into the community. After passing through the gateways, various parts of the community are revealed. Undeveloped hillsides and landscaped slopes leading up to the gateways add a rural feeling and help separate Benicia from neighboring communities. The features of each of the scenic roads and their gateways are discussed below.

#### **Interstate Freeway 780 between Glen Cove Road and Pine Lake**

**Gateway.** There is a southern gateway to Benicia where I-780 climbs from the I-680 intersection and crests in the vicinity of the basin of former Pine Lake. A magnificent view over the hilltops of Benicia to the distant Carquinez Bridge opens up as one moves west through this gateway.

The western gateway to Benicia on I-780 is formed by open, low hillsides, freeway landscaping, and the Southampton Marsh in the vicinity of the Columbus Parkway interchange. Views into the community open up as one moves east, past the Boundary Hills.

**Outward Views.** The experience of moving along I-780, where views alternate between broad vistas and close containment, is particularly exciting. Benicia's residential character is established by views along this route; and views to and across the Carquinez Strait to the steep, wooded slopes of northern Contra Costa County impart a rural image.

**Visual Corridor.** The experience of traveling from west to east along I-780 reveals the importance of the Boundary Hills which extend from Dillim Point on the Carquinez Strait to north of Lake Herman Road (refer to Figure 1-2.) The Boundary Hills, formed of a composite of close and distant hilltops and hillsides, visually separate Benicia from Vallejo. They first become apparent along I-780 at the Glen Cove interchange. The Boundary Hills also can be seen from various places along I-780 inside Benicia.

Between the former Pine Lake and East Second Street one can see vacant land and the edges of development. Between East Second Street and Southampton Road (West Seventh), views are generally contained by open, undeveloped hillsides. A notable wooded slope exists at the north side of the highway west of East Second Street. The overall impression of Benicia from the I-780 corridor is one of a relatively low density residential community.

**Interstate Freeway 680 between Morrow Lane and the Benicia-Martinez Bridge**

**Open Space Gateway.** The northern gateway to Benicia occurs on this route where the road passes under the Lake Herman Road overpass and around the point of land marking the interchange. The visual experience is enhanced by the open hillsides to the west which, as the gateway is passed, recede to reveal Benicia's major industrial area.

**Outward Views.** The views along this route establish an initial image of Benicia as a place where a high quality environment for manufacturing and import/export activities is provided. It becomes immediately clear that industrial activities are contained by natural topographic boundaries within the basin formed by the hills below Lake Herman Road on the north, the slopes above East Second Street to the west, the main ridgeline to the south, and Suisun Bay to the east. To the east, the "mothball fleet" can be seen in Suisun Bay.

**Visual Corridor.** When traveling from north to south, this route is marked by steep grassy slopes dotted with oaks and cattle on the west, and the expanse of Suisun Marsh on the east. Once the Benicia City Limits are reached, views briefly open up on both sides of the road; however, the focus is directly on several large storage tanks on the north side of the main ridge. When traveling from south to north, the focus is westward on the rolling hills above and below Lake Herman Road.

A viaduct carries the highway from its high point on the main ridge at the south to the lower grade below. Outward views are generally unobstructed along the viaduct. Between the industrial park interchange (north side of the viaduct) and Lake Herman Road, the visual corridor is contained on the east by the Union Pacific Railroad berm, and on the west by slopes between Park Road and the highway. Industrial Park landscaping has enhanced the corridor along part of this western edge.

**Lake Herman Road**

**Open Space Gateway.** The northwestern gateway to Benicia occurs on this route where the road passes through the Boundary Hills west of Lake Herman. Steep, high ridges rise at both sides along the road, near the 300 foot elevation, suddenly revealing a breathtaking view down and across Lake Herman to the Carquinez Strait beyond. An active quarry is located on the south facing slope of the hill along the north side of the road.

**Visual Corridor.** The Lake Herman Road corridor conveys a rural image for Benicia which is unusual so close to an urban area. The visual experience between the natural portals of the Boundary Hills and Lake Herman is enhanced by unique rocky ridges projecting upward from the grassy slopes south of the road and by riparian vegetation along the creek feeding into Lake Herman. Open hillsides within the City-owned property surrounding Lake Herman form a pleasant backdrop to the lake on the south. Lower, open slopes of the rolling hills north of Lake Herman Road complete the visual experience.

## **PLANNING IN SCENIC CORRIDORS**

### **Preservation**

“Preservation” means maintaining identified sight lines and minimizing visible development on any land that would block public views. Key visual features visible from the identified scenic highways are listed below.

- Carquinez Strait
- Suisun Marsh
- Boundary Hills
- Lower open slopes (along I-780)
- Former Pine Lake basin
- Reservoir Hill
- Arsenal Cemetery
- Significant rocky ridges
- Significant clusters of riparian trees
- Lake Herman
- Rolling hills (adjacent to I-680 north of Lake Herman Road)

## **4. ARCHITECTURAL AND LANDSCAPE FEATURES**

Buildings shape public spaces, and the details of their street faces have much to do with the success and viability of the streets and spaces they border.

In the last 30-40 years, while attention has been given to the visual character of buildings, emphasis has been on convenience for the automobile. An example is the preponderance of garage doors in the newer residential areas.

### **SOUTHAMPTON**

Southampton displays a typical late 20th century streetscape with curvilinear street patterns. Vehicles are parked at curbside much less frequently than occurs Downtown because of the lower density and greater number of available garage spaces and driveways. The building fronts are dominated by garage doors and large lawns.

### **INDUSTRIAL AREAS**

The older industrial areas developed in response to wartime activities. They are characterized by large scale, horizontal, boxy buildings, and roads built for temporary use. The pavement in some areas is random and chaotic, with little consideration for pedestrian safety or comfort. In addition, landscaping and screening of unattractive uses is inadequate, and overhead utilities are unattractive.

## **DOWNTOWN**

### **Landscape Features**

The block of West J Street between First and West Second Street has a splendid stand of vintage palm trees, which were often planted to give importance to major streets in 19th century California towns. This planting continues across First Street and along the East J Street frontage of St. Paul's Church grounds. Palm trees also distinguish the front yards of older residences such as the Riddell-Fish house. Other specimen, or non-native trees occur in older landscaped settings such as the grounds of the former State Capitol and the Fischer-Hanlon house next door.

### **Architectural Features**

Downtown Benicia has three broad categories of buildings: commercial, institutional (including civic and religious structures), and residential. The commercial buildings are clustered along First Street for the most part. Older institutional buildings are found generally on or within a block of First Street, while 20th century examples are more widely dispersed. Residential buildings are represented principally on the east-west streets, although some are located on First Street as well.

The old portion of Benicia is characteristic of 19th century and early 20th century American neighborhoods. The area is dominated by east/west streets that typically have vertical curbs, parallel on-street parking, and parkway planter strips with trees between the sidewalk and curb.

Building fronts are dominated by porches and a vertical massing of windows. Uses are mixed, with some streets having office, retail, and housing on the same block.

Commercial buildings in the 19th and early 20th centuries were often built with offices on the upper floors and additional space for storage. Another common commercial type was more residential in character and had apartments on the upper floor or floors. The strictly commercial buildings typically had a block-like form with raised parapets that concealed the actual roof, which was often pitched. The mixed residential and commercial buildings often revealed pitched or gable roofs. On First Street many residences were converted to commercial use but retained the outward characteristics of a residential building. Although ground floors were often remodeled, one typical 19th and early 20th century shopfront design that can still be found on First Street has recessed entrance doors flanked by polygonal show windows, so that much of the shopfront is glazed.

Institutional, civic, and religious buildings, because of their public nature, were generally larger and more monumental than residential buildings, but frequently similar in character and form. Whether used for government offices, museums, or organizations of a quasi-civic nature such as the I.D.E.S. or the I.O.O.F, they were built in the dominant styles of their period. Although churches, their associated parochial buildings, and their educational institutions also followed stylistic trends to a certain degree, their designs tended to fall within the general styles of Classical or Gothic Revival in the 19th and early 20th centuries.

Residential buildings Downtown exhibit the range of styles mentioned above as well as typical forms or plans. One house type that occurs very frequently Downtown is the pyramidal roofed, single-story cottage with a rectangular or square plan. This basic form was used for several styles including Classic Revival, Italianate, and Stick/Eastlake. Decorative detail, when present, was mainly confined to porches. Some of the cottages which now appear totally devoid of detail may always have been so.

## **ARSENAL DISTRICT**

### **Landscape Features**

The open space, landscape features, and urban design elements recognized as contributing to the Arsenal District include the former Barracks Parade Ground, the Military Cemetery, the rolling hills that form the setting for the Storehouses (Camel Barns), Ammunition Shops, and Magazines on the northern part of the district; and notable trees of great age or size such as the eucalyptus trees near the site of the former Benicia Barracks north of the old Post Hospital building. The specimen trees and ornamental landscaping surrounding the officers' quarters on the ridgetop have special significance, along with the mature street trees which line Jefferson Street and the ornamental specimen trees which mark the Military Cemetery. Additionally, the embankment above Adams and Washington Streets was historically planted with cork oak trees to form the original passage that provided a formal entrance to the Clocktower.

### **Architectural Features**

The Arsenal District has a more limited range of historical building types and architectural styles than does the Downtown, largely because the buildings were constructed by the federal government on a military reservation. However, this controlled situation did not mean that the buildings were not well designed or constructed. In fact, the Arsenal has some of the state's most architecturally distinguished buildings, notably the Storehouse and Ammunition Shop (Camel Barns), Clocktower, Powder Magazine, Shops, and the Officers' Residences.

The two broad categories of historic buildings in the Arsenal Historic District are the military/industrial buildings that comprise most of the district's historic structures and the residential buildings where military personnel were formerly quartered. The latter are concentrated in the middle zone of the district between the Jefferson Street embankment and the freeway. The military/industrial buildings are more scattered, but are principally in the areas south of Adams Street and north of the freeway.

## **VISUAL CHARACTER GOALS, POLICIES, AND PROGRAMS**

This section provides goals, policies, and programs that will maintain and reinforce Benicia's small-town character. In doing so, the goals, policies, and programs focus on preserving natural features and vistas, designating and maintaining scenic roads and highways, identifying and enhancing the gateways to the city, and improving the streetscape.

While this section focuses solely on visual character and community design, there are other sections in the General Plan where related goals, policies and programs appear. The most significant are listed below.

Growth Management	Goal 2.1 Policy 2.1.1 Program 2.1.A
Economic Development	Program 2.6.F Policy 2.11.3 Program 2.12.H Program 2.12.J Program 2.12.K Program 2.12.O
Circulation	Goal 2.14 Policy 2.20.3
Historic Resources	Goal 3.1 Policy 3.1.5



**GOAL 3.7: Maintain and reinforce Benicia’s small-town visual characteristics.**

**POLICY 3.7.1:** Ensure that new development is compatible with the surrounding architectural and neighborhood character.

**POLICY 3.7.2:** Encourage “place-making”—the arrangement of built elements to create indoor or outdoor spaces that are recognizable and suitable for a specific function or functions.

“Place making” and “place definition” are among the most important functions of urban design. “Place” can be manifested in many forms: a street closed off for a neighborhood or regional fair; a cafe on the sidewalk or in a courtyard adjacent to it; a front porch where neighbors gather; or a small intimate patio or porch on the private side of the building where one can take a respite from urban life.

*Program 3.7.A:* Develop design guidelines for public works and private development that encourage place-making.

*Program 3.7.B:* Prepare a citywide urban design plan that addresses landscaping, street trees, landmarks, gateway definitions, vista preservation/enhancement, and protection of shoreline and hillsides.

*Program 3.7.C:* Develop citywide requirements for screening service entrances and equipment.

*Program 3.7.D:* Develop a schedule and financing plan for undergrounding power and telephone lines.



**POLICY 3.7.3:** Encourage consistent street tree planting, other types of landscaping, and neighborhood gardens.

*Program 3.7.E:* Advertise the existence of guidelines for tree preservation, planting, and removal guidelines.

**POLICY 3.7.4:** Where feasible, install and maintain landscape (planter) strips that separate sidewalks from the streets.

*Program 3.7.F:* Establish an adequate minimum width for landscape strips so that plant materials (especially trees) do not damage the sidewalk, curb, or gutter.

*Program 3.7.G:* Modify the City's street improvement standards to accommodate landscape strips.

**POLICY 3.7.5:** Preserve the grid pattern of Benicia streets.

*Program 3.7.H:* Require that land use and circulation plans for property along arterials minimize the need for sound walls.



**GOAL 3.8:** **Preserve First Street as the community focal point of Benicia.**

**POLICY 3.8.1:** Design new and renovated buildings along First Street to accommodate ground level retail commercial.

*Program 3.8.A:* Develop urban design improvements to unify Solano Square with City Park and the Civic Center.

**POLICY 3.8.2:** In the transition areas east and west of First Street, encourage the adaptive re-use, rather than replacement, of existing residential structures.



**GOAL 3.9: Protect and enhance scenic roads and highways.**

**POLICY 3.9.1:** Preserve vistas along I-780 and I-680.

*Program 3.9.A:* Inventory scenic resources along I-780 and I-680.

*Program 3.9.B:* Investigate and apply for State Scenic highway designation of Interstate Highways I-780 and I-680.

*Program 3.9.C:* Develop a sign enforcement program along the freeways.

The State scenic highway law calls for careful coordination in planning, design, construction, and regulation of land use and development on the band of land “generally adjacent” to the freeway. The benefits of the designation to the community are that the State will officially refer to the freeways as scenic highways in its publications; the freeways will be eligible for “special scenic conservation treatment” and will receive special signage; and the law will prevent the placement of Caltrans facilities in the right-of-way without City approval.

**POLICY 3.9.2:** Work with the State to complete and maintain landscaping of I-680 and I-780.

First priority should be planting the various unfinished cut banks facing I-680 and I-780. Planting that blocks views from I-780 to the Carquinez Strait should be avoided. Ground cover and shrubs are appropriate for purposes of erosion control and appearance.

*Program 3.9.D:* Preserve the trees on the northern edge of former Pine Lake.

**POLICY 3.9.3:** Orient individual building/business signage toward city streets, not toward I-780.

**POLICY 3.9.4:** Develop the City’s five identified gateways to provide a sense of entry and exit.

*Program 3.9.E:* Prepare land use and design guidelines to direct the nature and character of development at the city’s five gateways.

**POLICY 3.9.5:** Establish definable neighborhoods in future development and revitalization projects.



**GOAL 3.10: Enhance the streetscape along Military East and West.**



*Program 3.10.A:* Develop a concept and streetscape plan for Military.

**GOAL 3.11: Enhance the East Side.**

**POLICY 3.11.1:** Focus public investment toward undergrounding utilities, completing sidewalks, adding walking paths, park amenities, landscaping, and street trees on the East Side.



**GOAL 3.12: Improve the appearance of the Industrial Park.**

**POLICY 3.12.1:** Encourage additional attractive, quality development in industrial areas.

*Program 3.12.A:* Continue to implement and revise as necessary the Industrial Design Guidelines.

*Program 3.12.B:* Adopt an ordinance establishing minimum standards for outdoor storage and yard maintenance within public view.



**GOAL 3.13: Improve urban design qualities of the waterfront and public access to the shoreline.**

**POLICY 3.13.1:** Enhance waterfront vistas.

*Program 3.13.A:* Incorporate public visual areas in new development.

**POLICY 3.13.2:** Improve pedestrian amenities along waterfront streets and walkways.

**POLICY 3.13.3:** Take advantage of water orientation for recreation and industrial uses.

*Program 3.13.B:* Develop a plan for public and pedestrian access to and along the waterfront and shoreline.

*Program 3.13.C:* Complete the pathway system from Point Benicia along the entire shoreline to the intersection of West Second and G Street.

*Program 3.13.D:* Use privately dedicated walkways to link to the waterfront.

## D. OPEN SPACE AND CONSERVATION OF RESOURCES

State planning law requires cities to plan for “open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety.” The General Plan Land Use Diagram (found in the back pocket of this Plan) recognizes three categories of open space to meet these requirements:

1. **Marsh.** Includes identified shoreline wetlands (but excludes freshwater wetlands and riparian corridors).
2. **General.** Includes publicly-owned open space, land dedicated for permanent open space in residential subdivisions, open space for public health and safety (such as hillsides with slopes over 30 percent), open space for managed production of resources (such as mineral resources), and open space for conservation of natural resources (such as the Lake Herman watershed). Refer to Policy 2.1.5 and page 209 – Urban Growth Boundary for further discussion of uses.
3. **Parks.** Includes publicly owned neighborhood, community, and regional parks, as well as public recreation facilities, and allows for more intensive recreational uses. They are discussed in the previous chapter under Parks and Recreation Chapter 2D: Community Services).



## 1. REGIONAL AND SUBREGIONAL OPEN SPACE AND TRAILS

### OPEN SPACE

(A Parks and Open Space diagram is provided in Chapter 2D under Parks and Recreation.)

#### Tri-City and County Open Space

Benicia is part of the Tri-City and County Cooperative Planning Area that encompasses 10,000 acres of open space in unincorporated Solano County between Benicia, Fairfield, and Vallejo. The *Tri-City and County Regional Park and Open Space Preservation Plan* (adopted 1993) is incorporated in the Benicia General Plan as a Special Area Plan. The Tri-City and County Plan reserves the Cooperative Planning Area for continuing agricultural and other open space uses and establishes a framework for regional park planning.

#### Southampton Open Space

The undeveloped open space areas within the Southampton subdivision offer physical separation between houses and visual relief from development. Portions of this open space have trails that are used for hiking, jogging, and walking.

Some parts of the Southampton Open Space are “residual” open space areas that were too steep for development or recreational use. Though many of these open space areas are not connected, there is habitat value to resident wildlife. Corridors could be established to permit wildlife access, and efforts could be made to restore native flora.

#### Benicia-Vallejo Open Space Buffer

The hills and ridges at the western edge of the Planning Area, also known as the “boundary hills,” are designated open space to maintain a permanent visual and physical separation from Vallejo. The boundary hills begin at Dillon Point on Southampton Bay Natural Preserve and extend north, incorporating Lake Herman Road. This area is protected through a 1979 Benicia/Vallejo “Memorandum of Understanding to Preserve the Buffer Zone.” The two cities agreed that the buffer zone should be inviolate, with no urban development.

#### Lake Herman Regional Park

Lake Herman Regional Park is an existing 577-acre lake and open space area located at the northernmost edge of the city. Allowed passive activities in the park include fishing, hiking, and picnicking. Boating is prohibited since the lake is a secondary water supply for the city. A trail system connects Lake Herman with nearby Benicia Community Park.

#### Northern Area

An area between Lake Herman and the Tri-City and County Open Space is currently designated as open space, but is largely privately held and has faced development pressure.

### **Benicia State Park**

Benicia State Recreation Area extends from the shoreline of Southampton Bay along the Planning Area boundary to the west and to Interstate I-780 on the north. It includes the tidal flats of Southampton Bay, as well as some trails and recreation areas.

### **Marsh and Shoreline**

Benicia has important marsh and shoreline open space resources all along Carquinez Strait and Suisun Bay. These resources include Southampton Bay Natural Preserve (formerly Southampton Marsh) in Benicia State Recreation Area, small parks and shoreline access points along the residentially developed areas west of Downtown, the Downtown waterfront and Marina, and marsh areas along the Industrial Park. The biotic values of these areas are described later in this chapter under the Water Environment and Biotic Resources. These areas are also important for the recreation opportunities they provide.



### **REGIONAL AND SUBREGIONAL TRAILS AND PATHS**

Benicia has a comprehensive system of bikeways and paved community trails. Bikeways are classified and identified in Chapter 2C: Circulation and a Bicycle and Multi-use Trails diagram is provided in the same chapter (Figure 2-4).

The Parks, Trails, and Open Space Master Plan (adopted in December 1997) proposes new trails to link the City's parks by foot, bicycle, horseback, and wheelchair. The Master Plan's proposed network of bikeways and trails is extensive and the Parks Master Plan serves as a guiding vision for General Plan bikeway and trail planning. (Refer to the Master Plan for a detailed description of city trails and paths.)

### **Interpretive Trails**

Interpretive Trails are paved and located where there are ecological or historical resources of educational value. Signs provide information about significant features. An interpretive trail is proposed as part of Lake Herman Regional Park.

### Bay and Ridge Trails

The San Francisco Bay Trail is a proposed 400-mile network that will circle San Francisco and San Pablo Bays, passing through all nine Bay Area counties. Benicia is one of the Bay Area cities along the pathway.

Benicia's Waterfront Trail is already signed as a part of the Bay Trail. It begins at the Benicia Marina and follows the commercial district on First Street, winds through the community and forks at Benicia State Recreation Area. The southern fork ends at Southampton Bay Natural Preserve where it connects with a trail to Glen Cove in Vallejo.

The proposed Bay Trail will enter Benicia from the south on the new Benicia-Martinez Bridge. As yet, there is no clear plan as to how bicyclists and pedestrians will connect to the Waterfront Trail from the bridge.

The Bay Area Ridge Trail is a second regional trail that will ultimately circle San Francisco and San Pablo Bays, following the hills and ridges that ring the Bay. In Benicia, this trail follows the same route as the Bay Trail along the Waterfront, and will require the same connection from the Benicia-Martinez Bridge.

### Staging Areas

The Parks Master Plan proposes staging areas to link the City's parks and open spaces. "Staging areas" are gathering points adjacent to major trails and accessible to major roads. Major staging areas are to provide a full range of facilities for the trail user including on-site parking and rest rooms. Minor staging areas are to serve short local trails and are located in neighborhood parks.

## 2. REGIONAL AND SUBREGIONAL OPEN SPACE AND TRAILS GOALS, POLICIES, AND PROGRAMS

The following goals, policies, and programs have a broad reach. They are designed to protect and provide access to open space and the waterfront and provide buffers between urban communities.



**GOAL 3.14: Provide a buffer between Benicia and adjacent communities.**

**POLICY 3.14.1:** Continue to implement the provisions of the Tri-City and County Cooperative Plan for Agriculture and Open Space Preservation and the 1979 Benicia/Vallejo Memorandum of Understanding to Preserve the Buffer (often referred to as the Benicia-Vallejo Open Space Buffer).

The Tri-City and County Cooperative Plan for Agriculture and Open Space Preservation has been adopted by the City and is incorporated in this General Plan by reference.



- GOAL 3.15:** **Provide buffers throughout the community.**
- POLICY 3.15.1:** Preserve and protect, through a variety of methods, a pattern of open space buffers and greenbelts throughout the Planning Area.
- Program 3.15.A:* Identify and evaluate open spaces (by function, location, size, connectivity, and views of open space).
- Program 3.15.B:* Adopt an open space preservation program aimed at acquiring or assisting in acquiring rights to open space within the Planning Area.
- Program 3.15.C:* Utilize existing land trusts.
- POLICY 3.15.2:** Preserve public views of public open space and maintain existing vistas (including the Northern Area vistas) wherever possible.
- Program 3.15.D:* Where applicable, require that new developments include view corridors that allow viewing open space from public roadways and public use areas.
- POLICY 3.15.3:** Avoid creating difficult-to-use residual open space in new development areas.
- Program 3.15.E:* Evaluate each proposed open space area to ensure it is large enough to meet its intended purpose.
- POLICY 3.15.4:** Use open space as a buffer against natural or man-made hazards.
- Program 3.15.F:* Require open space buffers around known hazardous areas, such as the Exxon Refinery and the IT site.
- POLICY 3.15.5:** Encourage the landscaping of existing open spaces, and landscape new open spaces with native plants.
- POLICY 3.15.6:** Restore and maintain natural landscapes in a natural manner.
- Program 3.15.G:* Develop a landscape master plan for open space areas.



- GOAL 3.16:** **Preserve key land forms which separate Benicia physically and visually from adjacent communities.**
- POLICY 3.16.1:** Maintain visual and physical separation from Vallejo and Fairfield.
- Program 3.16.A:* Use the westernmost parcels designated as open space to provide a buffer with Vallejo.

**POLICY 3.16.2:** Work with Vallejo to minimize visible development along the Boundary Hills.

**POLICY 3.16.3:** Allow no additional access roads between Columbus Parkway and Lake Herman Road.



**GOAL 3.17: Link regional and local open spaces.**

**POLICY 3.17.1:** Attempt to link existing regional and local open spaces using trails and open space corridors.

*Program 3.17.A:* Acquire open space corridors that link existing regional and local open spaces, where feasible.

“Acquire” may mean purchase, lease, or easement.

*Program 3.17.B:* Construct trails in open space corridors linking regional and local open spaces.



**GOAL 3.18: Protect agricultural use.**

**POLICY 3.18.1:** Preserve rangeland north of Lake Herman Road.

*Program 3.18.A:* Investigate land trusts and other mechanisms to ensure continuity of agricultural uses in the northern portion of the Planning Area.

### 3. BIOTIC RESOURCES

Biotic resources within the Benicia Planning Area include plant life, wildlife, special status species, and water bodies. Figure 3-3 shows the sensitive biological resources found in Benicia.

#### PLANT LIFE

Vegetation in the Planning Area is dominated by a cover of non-native grassland and suburban landscape, bordered by important marshlands at Southampton and Suisun Bays. Most of the rolling hills south of the Rose Drive area are developed with urban and suburban uses, interspersed with grassland covered slopes and a few undeveloped ravines. These large expanses of open space could be restored with native grasses, oaks and other flora. The lands east of East Second Street and north of I-780 have been highly disturbed by past military and existing industrial uses. Grasslands cover most of the rangeland to the north of East Second Street and the Lake Herman Road area throughout the northeastern hills. Major creeks, drainages, and the fringe of Lake Herman in the undeveloped Northern Area support freshwater marsh and riparian vegetation, which varies from cattail to willow forest and scrub. Scattered oaks occur in the northeastern hills, primarily on the north and east-facing slopes west



LEGEND		Special Status Species Occurrences	
Planning Area Boundary —————		▲	Callipe Silverspot Butterfly Sighting
City Limits -----		★	Golden Eagle Nest Location
<b>Sensitive Natural Communities/Unique Vegetation</b>		▨	General Occurrence Records in Suitable Habitat - Generalized areas where the indicated species have been recorded as occurring
	Marshland/Northern Coastal Salt Marsh/Coastal Brackish Marsh	SM	Salt Marsh Harvest Mouse
	Coast Live Oak Woodland	SS	Suisun Shrew
	Valley Needlegrass Grassland	SSS	Suisun Song Sparrow
	Riparian(Willow Riparian Forest/Willow Scrub)	CCR	California Clapper Rail
	Golden Violet Population (Callipe Silverspot Host Plant)	CBR	California Black Rail
	Eucalyptus Grove (Raptor Roosting & Nesting Substrate)	SMA	Suisun Marsh Aster
<b>Wetlands/Other Waters</b>		SBB	Soft Bird's-Beak
	Palustrine/Riverine (Streams, Channels, Ponds, Lakes)	DTP	Delta Tule Pea
	Estuarine (Tidal Marshland, Mudflats)	CT	Congdon's Tar Plant (Note: There is a strong likelihood that this area has been mapped by the CNDDDB in an inaccurate location.)

*Legend to Figure 3-3 on previous page*

of I-680. Small areas of northern coastal scrub, freshwater seeps, remnant native grasslands, and stands of eucalyptus also occur in the northern portion of the Planning Area.

The various vegetative communities in the Planning Area are summarized below. With the exception of the description of developed areas and eucalyptus stands, each of the descriptions conforms with the classification system developed by the California Department of Fish and Game (CDFG) (1986).

**Non-native Grassland**

Non-native grasslands occupy most of the Planning Area: introduced grasses and broadleaf weeds (e.g., fennel, artichoke, and star thistle) which quickly recolonize disturbed areas. Intensive grazing, dry land farming, and other disturbance have eliminated most of the historic range lands in the Planning Area.

**Developed Areas**

Ornamental landscaping has been planted throughout developed areas and around rural residences in the northern portion of the Planning Area. Weedy grassland occupies vacant lots and heavily disturbed areas, including much of the industrial area. Most species used in landscaping are non-native ornamentals—a wide variety of trees, shrubs, groundcover, and turf. Blue Gum Eucalyptus has been planted as windbreaks and forms woodlands in several locations.

**Northern Coastal Salt Marsh and Coastal Brackish Marsh**

Marshland natural communities occur along the Carquinez Strait and Suisun Bay where soils are subject to regular inundation by salt and brackish water. Species are segregated by elevation and degree of inundation. Populations of several special-status plants occur in the marshlands. This vegetation is generally absent along the developed shoreline of Carquinez Strait from the State Recreation Area at Southampton Bay

Natural Preserve to just east of the Benicia Bridge, although emergent marshland vegetation occurs near the entrance to the Benicia marina and forms a small stand just east of Tyler Street.

The Southampton Bay Natural Preserve, on the southwestern border of the city, and the Suisun Marsh northeast of the city are protected from encroachment by development. The Suisun Marsh is the largest remaining wetland around the San Francisco Bay and the largest brackish area in the United States. It comprises more than 10 percent of California's total wetland area. Both of these marshes provide wintering habitat for waterfowl on the Pacific Flyway and are vital to fish and wildlife production.

In 1977, the California Legislature passed the Suisun Marsh Preservation Act to preserve and enhance the quality and diversity of marsh habitats, and to assure retention of upland areas adjacent to the Suisun Marsh in uses compatible with its protection. This legislation protects the Marsh by implementing policies and programs set forth in the Suisun Marsh Protection Plan prepared by the San Francisco Bay Conservation and Development Commission. Development in these shoreline areas is prohibited, with the exception of minor fill to protect the shoreline, improve its appearance, or provide public access and recreation. A portion of the Secondary Management Area (SMA) of the Suisun Marsh is within the General Plan Planning Area. The SMA is included in the Suisun Marsh Preservation Act, but has less stringent development restrictions.

In addition to salt water and brackish water marshes, freshwater marshes, typically dominated by narrow-leaf cattail, occur at drainages and the fringe of freshwater bodies, including portions of Lake Herman and several stock ponds. Freshwater marsh species also dominate at numerous freshwater seeps in the Planning Area.

#### **Coastal Live Oak Woodland**

Over 120 acres of oak woodland—dominated by coast live oak—occurs in the northeastern portion of the Planning Area. This includes an extensive stand along the upstream half of Paddy Creek and adjacent slopes, scattered stands along a north-south ridgeline in the Paddy Creek watershed, and large continuous stands on the east and northeast-facing slope along the I-680 corridor north of the Lake Herman Road interchange. The understory is generally poorly developed or composed of non-native grassland.

#### **Willow Riparian Forest and Willow Scrub**

Riparian vegetation occurs along stream courses and the eastern fringe of Lake Herman, with trees and shrubs forming stands of riparian forest and willow scrub. Well-developed riparian corridors, primarily willows, occur along Sulphur Springs and Paddy Creeks. Intensive grazing and trampling by cattle has eliminated understory species and severely limits regeneration of natural forest and scrub.

### **Valley Needlegrass Grassland**

Remnant native grasslands are found in the Northern Area, forming valley needlegrass grassland communities which are interspersed with areas dominated by non-native species.

### **Northern Coastal Scrub**

A few stands of this natural community are scattered in grassland areas. Most consist of thickets of coyote brush.

## **WILDLIFE**

Although native vegetation within the Planning Area has been substantially altered, the marshlands and extensive tracts of undeveloped land contribute to a diverse assemblage of resident and migrant wildlife. Habitat types of particular importance to wildlife include the marshlands and open water Carquinez Strait and Suisun Bay, areas of well-developed riparian forest and scrub, and oak woodlands. In general, each habitat differs in its relative value to specific species, as summarized below.

### **Urbanized Habitat**

In general, urbanized areas have low to poor wildlife habitat value. The diversity of urban wildlife depends on the extent and type of landscaping, remaining open space and proximity to natural habitat. Trees and shrubs used for landscaping provide nest sites and cover for wildlife adapted to developed areas. Urban areas provide habitat for several species of native mammals (squirrel, raccoon, and skunk). Urbanization now separates most of the shoreline habitat along the southern and southeastern edge of the city from the undeveloped rolling hills in the Northern Area.

### **Tidal and Marshland Habitat**

Carquinez Strait and Suisun Bay are of regional importance to fish and wildlife, providing habitat for aquatic plants and animals, open water habitat for birds, and serving as the major movement corridor between San Pablo Bay and the Delta. Delta waters support game fish, such as largemouth bass, catfish, and sunfish, as well as non-game and forage fish.

The salt and brackish marshlands form the transition between open water and upland habitat. Special-status species known to be associated with marshland in the Planning Area include: salt marsh harvest mouse, Suisun shrew, California clapper rail, California black rail, Suisun song sparrow, and salt marsh yellowthroat. For many of these species, the upper limits of the marshland and the remaining adjacent upland habitat are essential retreats during extreme high tides. Protection of an adequate buffer to preserve sufficient retreat habitat is essential to maintaining the value of the marshlands. Much of this zone has been developed with industrial uses along the southern and eastern edge of Benicia. The importance of this buffer is recognized in the Suisun Marsh Protection Plan through establishment of a “secondary management area” for a portion of the Planning Area.

### **Grassland Habitat**

Native and nonnative grasslands support a variety of mammals, birds, and reptiles, and provide foraging for raptors. Many species use the grassland for only part of their habitat, foraging in the grassland and seeking protection in the limited tree and scrub cover. Grassland habitat in the northern portion of the Planning Area supports the callippe silverspot butterfly, a special-status insect.

### **Freshwater Marsh and Riparian Habitat**

Freshwater aquatic habitats and the associated riparian and marsh vegetation are of high value to wildlife, providing a source of drinking water, protective cover, and movement corridors. Riparian forest and scrub provides nesting and roosting for numerous resident birds, and stopovers for migrant songbirds. The streams, ponds, and Lake Herman provide aquatic habitat for amphibians. Dense riparian growth provides essential cover in the open grasslands for larger mammals, such as striped skunk, raccoon, opossum, and black-tailed deer.

### **Oak Woodland Habitat**

These provide important cover for a greater diversity of wildlife than found in the adjacent grasslands. The abundant seed crops (acorns and madrone, poison oak, and toyon berries) are an important food source for black-tailed deer, woodpeckers, and other wildlife.

### **Rock Outcrops**

Rock outcrops in the grassland and oak woodlands of the Northern Area provide a unique habitat for wildlife. Outcrops occur in the Paddy Creek watershed and the dense woodlands in the northeastern hills. The crest of Sulphur Springs Mountain forms an exposed bluff with cliffs and ledges just west of the Planning Area. These land forms provide perches for raptors and ledges for nests.

### **Eucalyptus Habitat**

Although native to Australia, this naturalized species provides important nesting habitat for raptors and other birds, and cover for larger mammals. Eucalyptus in the open grasslands—where protective cover and perching habitat is scarce—emphasizes the importance of the dense tree stands to birds and larger mammals.

## **SPECIAL STATUS SPECIES AND SENSITIVE NATURAL COMMUNITIES**

Special-status species<sup>1</sup> are plants and animals legally protected under State or federal Endangered Species Acts or other regulations, plus other species considered rare enough by the scientific community and trustee agencies to warrant special consider-

---

<sup>1</sup> Special-status species include: officially designated (rare, threatened, or endangered) and candidate species for listing by the CDFG; officially designated (threatened or endangered) and candidate species for listing by the US Fish and Wildlife Service (USFWS); species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines; and other species considered sensitive or of special concern due to limited distribution or lack of adequate information.

ation. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a “take”<sup>2</sup> of these species.

The primary information source on the distribution of special-status species in California is the California Natural Diversity Data Base (CNDDB) inventory, which is maintained by the Natural Heritage Division of CDFG. A record search indicates several plant and animal species with special-status in the Planning Area, mostly in the tidal marshland habitat.

#### 4. BIOTIC RESOURCES GOALS, POLICIES, AND PROGRAMS



**GOAL 3.19: Preserve and enhance habitat for special-status plants and animals.**

**POLICY 3.19.1:** Protect essential habitat of special-status plant and animal species.

*Program 3.19.A:* Require biological assessments in sensitive habitat areas as part of environmental review of proposed development.

*Program 3.19.B:* Require retention of essential habitat for special status species. If infeasible, require adequate mitigation for loss of special status species and/or habitat in compliance with State and federal regulations.



**GOAL 3.20: Protect and enhance native vegetation and habitats.**

**POLICY 3.20.1:** Protect native grasslands, oak woodlands, and riparian habitat.

**POLICY 3.20.2:** Restore native vegetation, such as birch grasses and oaks, wherever possible for open spaces of existing developed areas.

*Program 3.20.A:* Encourage community groups to carry out native plant restoration efforts.

*Program 3.20.B:* Limit the loss of native vegetation or require mitigation, or both.

*Program 3.20.C:* Require native and compatible non-native plant species, especially drought-resistant species, to the extent possible in landscaping new development and public areas.

<sup>2</sup> “Take” as defined by the Federal Endangered Species Act (FESA) means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” a threatened or endangered species.

**POLICY 3.20.3:** Encourage preservation of existing trees. Especially preserve and protect mature, healthy trees whenever practicable, particularly where such trees are of significant size or are of significant aesthetic value to the immediate vicinity or to the community as a whole.

*Program 3.20.D:* Strive to incorporate existing mature, healthy trees into proposed developments.

**POLICY 3.20.4:** Require protection of movement corridors.

*Program 3.20.E:* Require preservation of open space corridors between Lake Herman, Sulphur Springs Mountain, the Northern Area, the northeast hills, the Benicia State Recreation Area, and the marshlands east of I-680.



**GOAL 3.21: Permanently protect and enhance wetlands so that there is no net loss of wetlands within the Benicia Planning Area.**

**POLICY 3.21.1:** Encourage avoidance and enhancement of sensitive wetlands as part of future development.

*Program 3.21.A:* Continue to require wetland delineation and mitigation as part of environmental review of proposed development.

**POLICY 3.21.2:** Require replacement for wetlands eliminated as a result of development at a higher wetlands value and acreage than the area eliminated.

Replacement ratios are initially determined by State and federal agencies. The City desires to take an aggressive approach in promoting wetland enhancement. If the City desires a higher ratio, a nexus must be established between the loss and the desired replacement ratio.

*Program 3.21.B:* Continue to coordinate with the California Department of Fish and Game, United States Fish and Wildlife Service, and the United States Army Corps of Engineers in reviewing proposed wetland modifications.

**POLICY 3.21.3:** Encourage development of a Suisun Marsh interpretive center near the I-680/Lake Herman Road interchange.

*Program 3.21.C:* Work with responsible agencies to develop the Suisun Marsh interpretive center near Lake Herman Road and I-680.

**POLICY 3.21.4:** Restore and increase marshland areas.

*Program 3.21.D:* Prepare a Local Protection Program (LPP) for the portion of the Suisun Marsh Secondary Management Area within the Benicia General Plan Planning Area.

*Program 3.21.E:* Identify small wetlands and require their protection, restoration, and enhancement as part of open space dedication in proposed development and in citywide open space improvements.



## 5. WATER RESOURCES

### **Carquinez Strait**

Benicia has joined the cities of Vallejo, Martinez, and Hercules, the State Lands Commission, Solano and Contra Costa counties, the East Bay Regional Park District, and the Greater Vallejo Recreation District to protect and enhance the resources of the Carquinez Strait. Funding for this planning project was provided as part of a 1993 State Lands Commission agreement with the Crockett Cogeneration Project. The plan calls for the protection, restoration, and enhancement of resources, balanced with other public trust uses (recreation, public access, commerce, navigation, and shipping) which will contribute to the long-term economic vitality of the Strait.

### **Ravines and Streambeds**

The ravine northeast of Columbus Parkway, the ravines oriented east from the “view hill” in Southampt on, and the streambeds associated with the former Paddy Lake and Lake Herman are important water resources and are protected from development by this Plan. By reducing overland runoff and filtering water-borne pollutants, these naturally occurring watercourses aid in flood prevention and water quality preservation.

### **Marshes**

The Southampt on Bay Natural Preserve (formerly called Southampt on Marsh), on the southwestern border of the City, and the Suisun Marsh northeast of the City are protected from encroachment by development. The Suisun Marsh is the largest remaining wetland around the San Francisco Bay and the largest brackish area in the United States. It comprises more than 10 percent of California’s total wetland area.

Both of these marshes provide wintering habitat for waterfowl on the Pacific Flyway and are vital to fish and wildlife production. They are protected by this Plan.

In 1977, the California Legislature passed the Suisun Marsh Preservation Act to preserve and enhance the quality and diversity of marsh habitats, and to assure retention of upland areas adjacent to the Suisun Marsh in uses compatible with its protection. This legislation protects the Marsh by implementing policies and programs set forth in the Suisun Marsh Protection Plan prepared by the San Francisco Bay Conservation and Development Commission. Development in these shoreline areas is prohibited, with the exception of minor fill to protect the shoreline, improve its appearance, or provide public access and recreation. A portion of the Secondary Management Area (SMA) of the Suisun Marsh is within the General Plan Planning Area. The SMA is included in the Suisun Marsh Preservation Act, but has less stringent development restrictions.

## 6. WATER RESOURCES GOALS, POLICIES, AND PROGRAMS

(Goals, policies, programs for marshes are found in the prior section: Biotic Resources.)



### **GOAL 3.22: Preserve water bodies.**

**POLICY 3.22.1:** Avoid development that will degrade existing lakes and streams.

*Program 3.22.A:* Require that all development in watersheds flowing into lakes and unchannelized streams include features to preserve run-off water quality.

*Program 3.22.B:* Require a minimum setback of 25 feet from the top of bank of streams and ravines. Do not allow development within the setback.



### **GOAL 3.23: Preserve Lake Herman as a municipal water resource.**

**POLICY 3.23.1:** Ensure the biological, chemical, and physical integrity of Lake Herman.

*Program 3.23.A:* Continue to monitor water quality in Lake Herman and at upstream sources of potential pollution.

**POLICY 3.23.2:** Prohibit uses that would adversely affect water quality (such as motorized boats or swimming).



### **GOAL 3.24: Protect watersheds.**

**POLICY 3.24.1:** Identify the Benicia watersheds to preserve.

## 7. MINERAL RESOURCES

Mineral resources consist of surface soils for agricultural uses or domestic gardens and subsurface materials such as mined rock or minerals. State planning law requires the general plan to identify mineral resources and provide for their continued availability. The one mineral resource area in the Planning Area which is required to be protected and preserved for extraction is shown on Figure 3-4.

### SOILS

The Department of Agriculture's Soil Survey of Solano County identifies the predominant soil in the Planning Area as the Dibble and Altamont Series of expansive clay formations. These soils have the greatest limitations for the types of plants which can be grown without special soil treatment and are best suited to open rangeland or recreational purposes if left undeveloped. The amount of rainfall and low permeability of the soils contribute to the limited variety of natural vegetation supported. Past use of the unurbanized land in the Planning Area has been for grazing.

The Northern Area, particularly along Paddy Creek, is comprised of the richer, Rincon Series of clay loams which is capable of more intensive agriculture. These are alluvial soils formed from erosion of the sedimentary rocks of surrounding slopes. According to the Soil Survey, the predominant soil types are suitable for management of small birds such as quail and doves and for impounding water for waterfowl habitat or fish.

### SUBSURFACE RESOURCES

The only regionally significant mineral resource in the Planning Area is a deposit of igneous rock from which aggregate is produced. The aggregate is used in the manufacture of asphaltic concrete, Portland cement concrete, rip-rap, drain rock and road base.

The Sulphur Springs Mountain Deposit was designated by the State of California as a Mineral Resource of Regional Significance pursuant to the Surface Mining and Reclamation Act (SMARA). An active quarry within the deposit exists along Lake Herman Road west of Lake Herman in the boundary hills between Benicia and Vallejo, outside of the Planning Area. Quarrying there has resulted in a cut face, which is visible from the Lake Herman area. To the extent possible given the requirements of the Surface Mining and Reclamation Act (SMARA), City policy discourages further expansion of the visible cut in an eastern direction.

Several abandoned mercury mines exist in the Sulphur Springs Mountain area. These mines have not been in production since the mid 1940s.

## 8. MINERAL RESOURCE GOALS, POLICIES, AND PROGRAMS



**GOAL 3.25:** Conserve and, where appropriate, develop the mineral resources of regional significance within the Planning Area.

**POLICY 3.25.1:** Maintain in open space the mineral resource area of regional significance designated on Sulphur Springs Mountain until a mineral resource extraction and reclamation plan that addresses all potentially significant impacts of extraction has been approved by the responsible agencies.



**GOAL 3.26:** Minimize environmental impacts of mineral production.

**POLICY 3.26.1:** Minimize exposure of the quarry face from residential areas.

**POLICY 3.26.2:** Allow extraction of mineral resources within the Planning Area but beyond the currently permitted quarry area on Sulphur Springs Mountain, only upon approval by the appropriate agencies.

**POLICY 3.26.3:** Maintain a variable ridgeline and natural landform representative of the scenic character of the Planning Area.

*Program 3.26.A:* Work with adjacent jurisdictions to establish mineral resource management measures.

**POLICY 3.26.4:** Prohibit extraction of mineral resources outside the State-designated mineral resource area, and permit extraction of mineral resources inside the State-designated mineral resource area only if applicable policies, mitigation measures, performance standards, rules, and regulations are met.

**POLICY 3.26.5:** Require mitigations, setbacks, buffers, and screening.

**POLICY 3.26.6:** Require that residential buildings to be constructed within 2,000 feet of the ultimate mineral extraction boundary be analyzed by a qualified engineer to ensure economically feasible measures that minimize the amplification of ground vibration.

## 9. ENERGY CONSERVATION GOALS, POLICIES, AND PROGRAMS

Developing and maintaining urban areas, including the open space within developed areas, utilizes energy in various forms. For development projects, there are “indirect” energy costs involved in the manufacture of building materials, and there are “direct”

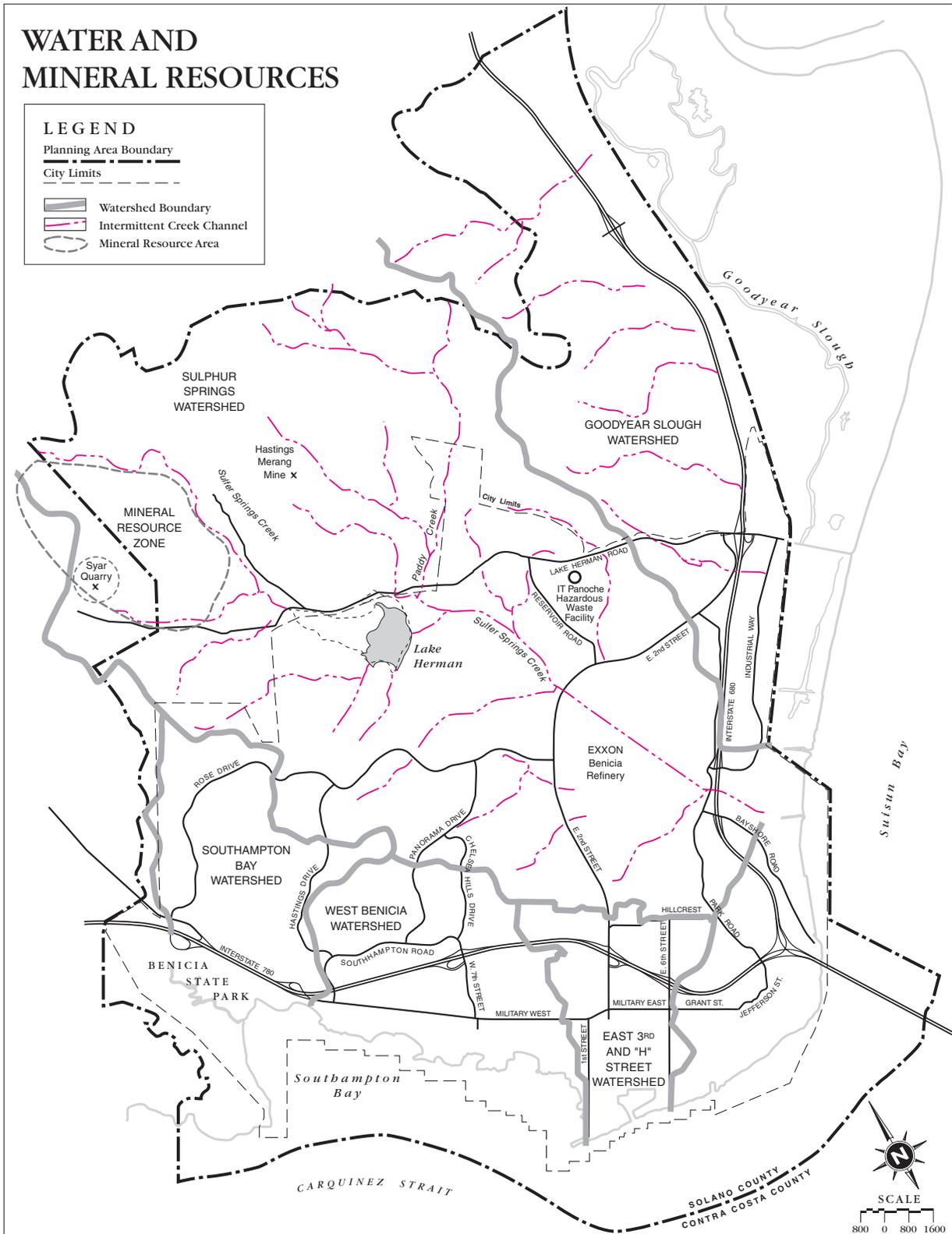


Figure 3-4. Hydrology and Mineral Resources

costs involved in the ongoing operation (heating, lighting, *etc.*) of the project. The State has adopted comprehensive energy conservation standards (“Title 24”) which must be incorporated into all new development projects, including remodelings. Those standards are implemented in Benicia through the building permit review process. The State conducts periodic audits of local building departments to ensure that energy standards are being properly administered.



**GOAL 3.27: Improve energy efficiency.**

**POLICY 3.27.1:** Promote energy conservation in all new development and during rehabilitation of existing homes.

*Program 3.27.A:* Distribute information on weatherization and energy conservation.

*Program 3.27.B:* Implement State energy conservation requirements in new housing.

# 4. COMMUNITY HEALTH AND SAFETY

## A. HEALTHY COMMUNITY

### 1. DIMENSIONS OF OPTIMAL HEALTH

A comprehensive definition of a healthy community is described by the following categories:

**Physical Environment.** This category focuses on a clean environment, fitness, nutrition, safety, and medical care. Specific issues include affordable and safe housing, parks and open space, streets, and sanitation.

**Social Environment.** Friends, families, and communities fall under this category. Specific issues include hunger, food bank utilization, school lunches, homelessness, substance abuse, cost of living, earned wages, percent of the population in poverty, and broader issues of social justice.



**Emotional Health.** Stress management and care during individual emotional crises affect the community's overall emotional health as do community balance (racial, economic, age), resource distribution, and participation in decision-making.

**Intellectual Environment.** Education, career development, and personal achievement fall under this category. Education issues include drop-out rates, graduation rates, continuing education programs, and other educational opportunities. Career development deals with issues such as unemployment rates, job types and availability, commute distance, and economic development.

**Spiritual.** This category deals with sense of purpose, love, hope, and charity.

The comprehensiveness of the above factors requires that broad segments of the community participate in addressing health issues and finding and implementing solutions to improve local health care.

## 2. HEALTHY COMMUNITY GOALS, POLICIES, AND PROGRAMS



**GOAL 4.1:**            **Make community health and safety a high priority for Benicia.**

**POLICY 4.1.1:**        Strive to protect and enhance the safety and health of Benicians when making planning and policy decisions.

**POLICY 4.1.2:**        Promote a wide range of health-related services.

Such services will address the physical environment and social climate.

*Program 4.1.A:*        Develop a citizen input planning process with the Human Services Fund Board to address locally identified community health and health-related concerns.

**POLICY 4.1.3:**        All City departments should attempt to address the underlying causes of health, social, and safety issues.

*Program 4.1.B:*        Promote measurable health goals and work with health-related agencies to monitor their implementation.

For example, work with "California Healthy Cities" on a project to reduce measurably the sale of cigarettes to children.

**POLICY 4.1.4:**        Compile available information pertinent to the health and safety of Benicians.

*Program 4.1.C:*        Require the Human Services Fund Board to report annually to the City Council and public on the health, well-being, and safety of the community, along with recommendations for improvements.

**POLICY 4.1.5:**        Clarify City role in providing health services.

*Program 4.1.D:* Inventory health needs, identify holes in the network, and focus on those issues not being addressed.

*Program 4.1.E:* Delegate a formal group (e.g., Human Services Fund Board) to be responsible for community health promotion, and require the group to coordinate with a broad range of community representatives.

*Program 4.1.F:* Expand the role of the City staff person liaison to the Human Services Fund Board, as needed to support additional tasks assigned to the Board.



**GOAL 4.2: Improve access to medical, mental health, and social services for all Benicians, including the elderly and low-income.**

**POLICY 4.2.1:** Fully utilize and coordinate available resources and efforts through the City’s Human Services Fund Board and other governmental and non-governmental agencies.

*Program 4.2.A:* Work with existing health care providers, neighboring cities, and the county, State and federal governments.

*Program 4.2.B:* Provide and maintain affordable transportation services to and from health facilities (in and out of town), especially for the elderly and disabled.



**GOAL 4.3: Attract additional health services to Benicia.**

**POLICY 4.3.1:** Promote preventive health care in line with the Child and Adult Preventive Care Guidelines published by the US Public Health Service (1994).

The guidelines recommend tests, examinations, immunizations, and other preventive measures for all ages.

*Program 4.3.A:* Support the development of a “Center for Human Services”.

**POLICY 4.3.2:** Evaluate the need for and feasibility of new medical facilities in Benicia including a branch of the County Health and Social Services Department.

*Program 4.3.B:* Promote prenatal care, health care for children, teen activities, education and counseling, and intergenerational activities.

*Program 4.3.C:* Investigate the feasibility of utilizing existing City buildings to deliver health-related services, and expand the scope of the buildings’ uses in conjunction with established neighborhood groups.

**POLICY 4.3.3:** Promote establishment of demonstration gardens at schools, churches, fire stations, and other sites.

*Program 4.3.D:* Consider utilizing vacant City property for gardening of fruits and vegetables.



**GOAL 4.4:** **Reduce the incidence of substance abuse and strive for a drug-free community.**

**POLICY 4.4.1:** Support the development of the education of all age groups in the prevention of substance abuse.

*Program 4.4.A:* Include law enforcement, the School District, and proprietors of nicotine, alcohol, and prescription drugs in planning and operating substance abuse prevention programs.

*Program 4.4.B:* Identify at-risk populations and work to develop programs and services to address their needs.

**POLICY 4.4.2:** Promote safe driving by youth.



**GOAL 4.5:** **Establish after-school programs and other constructive activities for youth.**

*Program 4.5.A:* Work with the School District on appropriate after-school youth activities.



**GOAL 4.6:** **Prevent and reduce crime in the community.**

**POLICY 4.6.1:** Encourage building designs that help to reduce crime.

*Program 4.6.A:* Review the design of new and rehabilitated buildings for ways to increase resident safety.

**POLICY 4.6.2:** Develop a corrective action plan to deal with high crime areas.

*Program 4.6.B:* Strengthen and expand neighborhood watch programs. Include businesses.

*Program 4.6.C:* Promote the education of citizens on how not to be a victim.

**POLICY 4.6.3:** Maintain an adequate officer-to population ratio in all areas, as approved by the City Council.

## B. HAZARDS TO THE COMMUNITY

### 1. GEOLOGIC

Within Benicia, the most significant geologic hazards are those associated with landslides, debris flows, and ground shaking during earthquakes. Other significant geologic hazards include the potential for settlement of structures constructed on filled bay land, expansive soils, cut and fill slopes, and flooding. These and other possible hazards are discussed below. A list of geological web site internet addresses is provided in Appendix H.

#### SEISMIC HAZARDS

##### Earthquakes

Benicia lies within a seismically active region. The principal faults in the area are capable of generating large earthquakes that could produce strong to violent ground shaking in Benicia.

In the event of an earthquake, seismic risk to a structure will depend on the characteristics of the earthquake, the distance to the earthquake epicenter, the subsurface conditions underlying the structure and its immediate vicinity, and the characteristics of the structure. It is impossible to predict precisely when, where, or exactly what kind and amount of movement will occur on local faults. However, the intensity of ground shaking can be amplified by local geologic conditions. Areas most susceptible to a significant amplification of ground shaking are underlain by soft sediments such as Bay Mud. In several areas along the Benicia waterfront, fill and buildings have been placed over Bay Mud. These areas are likely to experience substantially stronger ground shaking than areas underlain by bedrock. Figure 4-1 shows ground shaking amplification in the Planning Area.

##### Unreinforced Masonry Buildings

Most susceptible to earthquake damage are older structures (those constructed before 1950) and unreinforced masonry buildings (URMS). Structural damage occurs in older wood frame structures as a result of poorly designed foundations or a lack of structural bonding between the foundation and the building. The risk of structural damage can often be significantly reduced by securely attaching the structure to the foundation. Shear walls and other structural reinforcements are useful in improving resistance to earthquakes.

URMS—buildings constructed with brick, cinder block, or stone without steel reinforcement—were common in California in the early part of the 20th century. URMS are prone to collapse during large earthquakes, but can often be brought up to acceptable earthquake design standards by adding structural reinforcement.

The risk associated with URMS is addressed in Benicia's Seismic Hazards Identification Program (Chapter 15.60, Benicia Municipal Code). The program requires that the City

notify owners and tenants of URMS of the hazards. The notification by the City was completed in 1990.

### **Liquefaction**

Liquefaction occurs in granular materials as a result of ground shaking, and is often followed by sudden local settling or slope failure. The potential for liquefaction is considered to be highest in areas underlain by saturated, unconsolidated, granular sediments. Within Benicia, the areas most at risk from liquefaction are along the Bay margin and in the flat-lying valley bottoms, in areas underlain by Bay Mud or Alluvium. Figure 4-2 shows areas with potential liquefaction hazard.

Although liquefaction often causes severe damage to structures, structural collapse is uncommon. The risk to public safety from liquefaction, therefore, is relatively low. Structures can be protected from liquefaction through the use of special foundations.

### **Earthquake-related Ground Failure**

Various forms of ground failure occur during or immediately following an earthquake, as a result of ground shaking. The nature and severity of these effects are determined by the magnitude and duration of shaking and the local geologic and groundwater conditions. Earthquake-related ground failures include lateral spreading, lurch cracking, and landsliding.

### **Fault Rupture**

The Green Valley fault is the only active fault known in the Planning Area. Fault rupture is likely to occur along the Green Valley fault as a result of an earthquake there. The risk of fault rupture elsewhere in the Planning Area is very low.

## **SLOPE STABILITY HAZARDS**

### **Landslides**

Landslides are significant geologic hazards in the Planning Area. Since the 1906 earthquake, damage from landslides has far exceeded that from earthquakes. Landslides are relatively rare in the developed portions of Benicia, but are numerous in the hilly, undeveloped areas. A map of the landslides in the Planning Area is shown on the Landslide Map, Plate 2 of the Public Safety Background Report, February 28, 1996. Another reference is the Department of Mines and Geology Open File Report 86-17 "Landslide Hazards in the Benicia Valley Area." Figure 4-2 shows areas with potential landslide hazard.

Landslides can cause extensive damage to buildings, roadways, or other facilities located on the landslide, and often result in large property losses. Because landslides are slow moving, people are rarely injured or killed. Landslides often result from poorly placed or poorly drained fill.

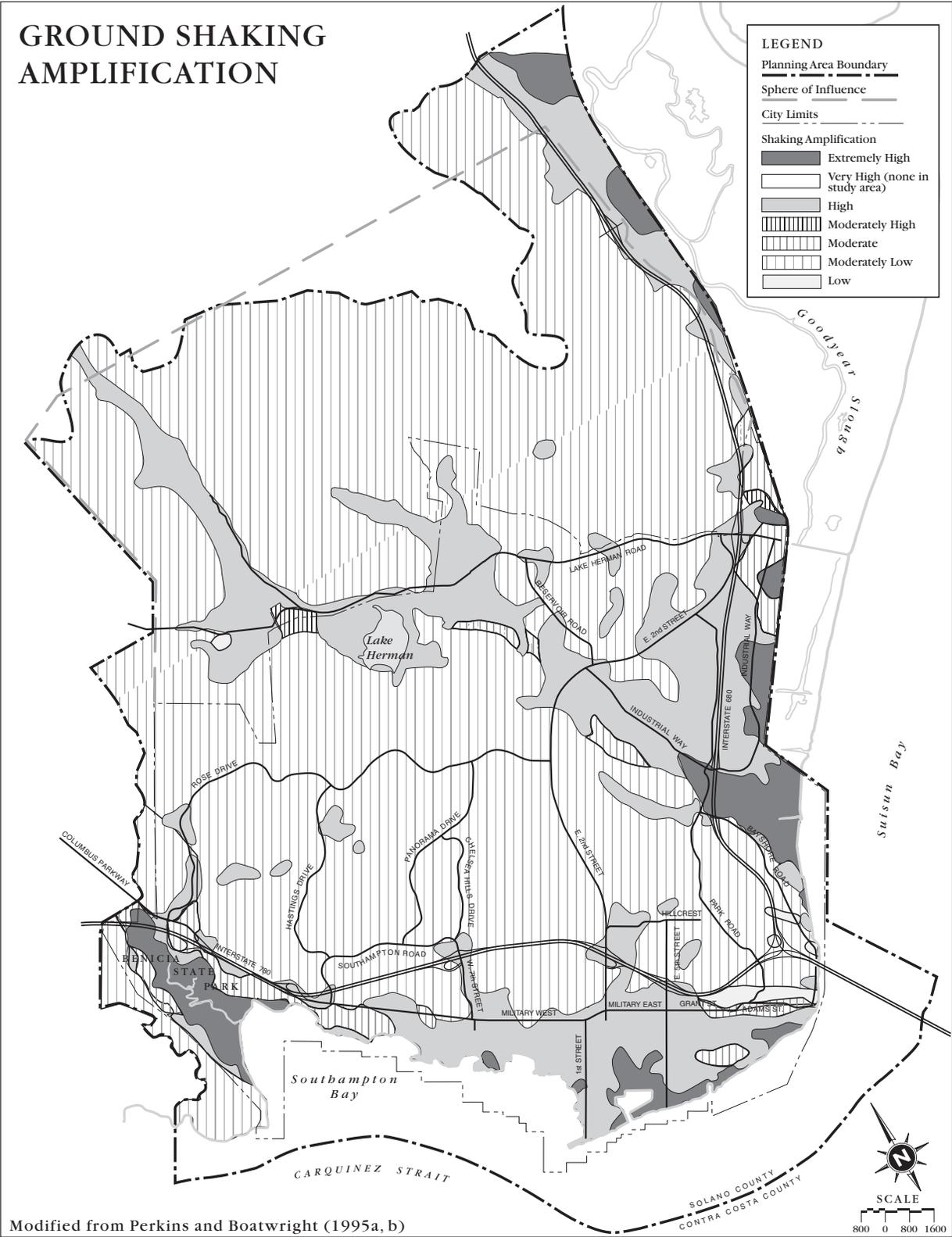


Figure 4-1. Ground Shaking Amplification

### **Debris Flows**

Debris flows are fast moving, highly fluid landslides. Debris flows originate where hillside swales filled with unstable colluvium on steep slopes become saturated during a period of very heavy rainfall. Once the colluvium slides a short distance, the soil loses its structure, liquefies, and moves rapidly down the swale or ravine, coming to rest in the near-level valley bottom.

A large number of debris flows were mapped in the Planning Area, mostly in the hilly region northeast of Lake Herman Road.

The risk of loss of property or life as a result of debris flows can be reduced. The most effective strategy is to avoid placing structures or facilities in debris flow paths. Where structures exist within areas at risk of debris flows, measures can be taken to stabilize the debris flow source areas through retaining walls, regrading, or subdrainage, constructing basins to retain debris, or diverting debris away from structures.

## **2. FLOOD HAZARDS**

Flooding that causes damage to lands and property within the Planning Area occurs primarily in response to severe rainstorms coincident with near-saturated soil conditions or high tides, or both. The most recent severe flooding occurred in February 1986 when the area received 7.66 inches of nearly continuous rainfall in nine days.

### **FEMA FLOOD MAPS**

Based on the results of a revised hydrologic study commissioned by the City in 1987, The Federal Emergency Management Agency (FEMA), prepared a revised Flood Insurance Study and Flood Insurance Rate Map (FIRM) in 1989. Flood hazard zones delineated for Benicia and adjacent portions of Solano County within the Planning Area are shown in Figure 4-3.

The figure shows low-lying areas subject to flooding during a 100-year storm: (1) the lower reaches of the Sulphur Springs Creek Watershed downstream of Lake Herman; (2) the lands flanking the Benicia shoreline east of East 3rd Street; and (3) the wetlands associated with Benicia State Park on Southampton Bay. A "100-year storm" means that in any year there is one chance out of 100 for a serious flood to occur.

### **STORMWATER MASTER PLAN/FLOOD CONTROL IMPROVEMENTS**

Since adoption of the 1982 and 1989 Stormwater Master Plans, the City has completed over 40 storm drainage improvement projects (see Appendix A of the Public Safety Background Report, February 28, 1996). These improvements have significantly reduced the spot flooding which formerly occurred in Benicia. Two large stormwater detention basins were constructed as part of the Southampton D-Unit subdivisions which have helped to minimize flooding problems Downtown.



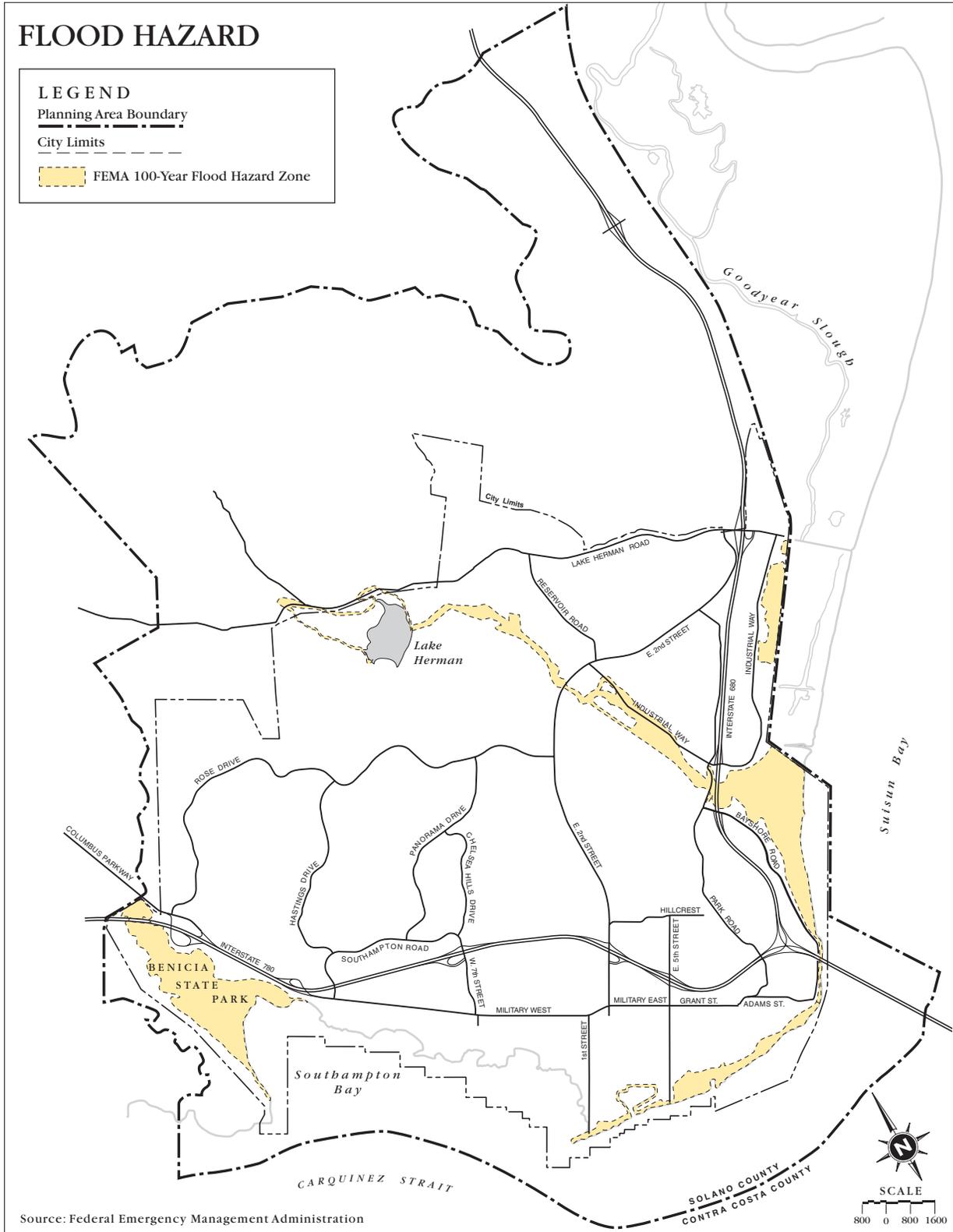


Figure 4-3. Flood Hazards

### SEA LEVEL RISE

BCDC's 1988 study of sea level rise and its impacts on San Francisco Bay predicts a rate of sea level rise of between 0.005 and 0.05 feet per year over the coming tidal epoch. While rising sea level will not be enough to endanger existing developed areas of Benicia, it may mean that flooding could be exacerbated in low lying areas at high tide. The height of wave run-up and related shoreline erosion during storms may also increase. As a result, existing sea walls and levees may have to be raised, and the maintenance and design of shoreline stabilization works will also be affected.

### 3. FIRE HAZARDS

The City's jurisdiction includes extensive open space (primarily grassland). Residential and industrial uses occur in proximity to these open space areas, posing potential fire safety problems. Figure 4-4 shows that most of the Planning Area is a potential fire hazard. To address fire prevention in open space areas, the Fire Department administers a vegetation control program.



### 4. HAZARDOUS MATERIALS AND WASTE

Improper handling of hazardous substances can result in public health hazards through contamination of soils or groundwater or through airborne releases in vapors, fumes, or dust. Particularly susceptible populations that may be exposed, such as children, pregnant or lactating women, people with immune deficiencies, and seniors are called "sensitive receptors". The presence or proximity of hazardous substances could pose restrictions on the types of land use that would be appropriate for future development. Even if handled correctly and in accordance with applicable regulations, hazardous substances could present a potential health risk to the surrounding population if released during an accident or an emergency.

#### HAZARDOUS SITES

Regulatory agencies involved in sites that have been investigated may have decided—based on federal and State regulatory guidelines—to allow residual contamination to be left in place or to take other remedial actions. This is because hazardous waste that is below the ground at an undeveloped or existing residential or commercial site can pose a health threat if the contaminated soil is disturbed by construction, landscaping, or similar activities.

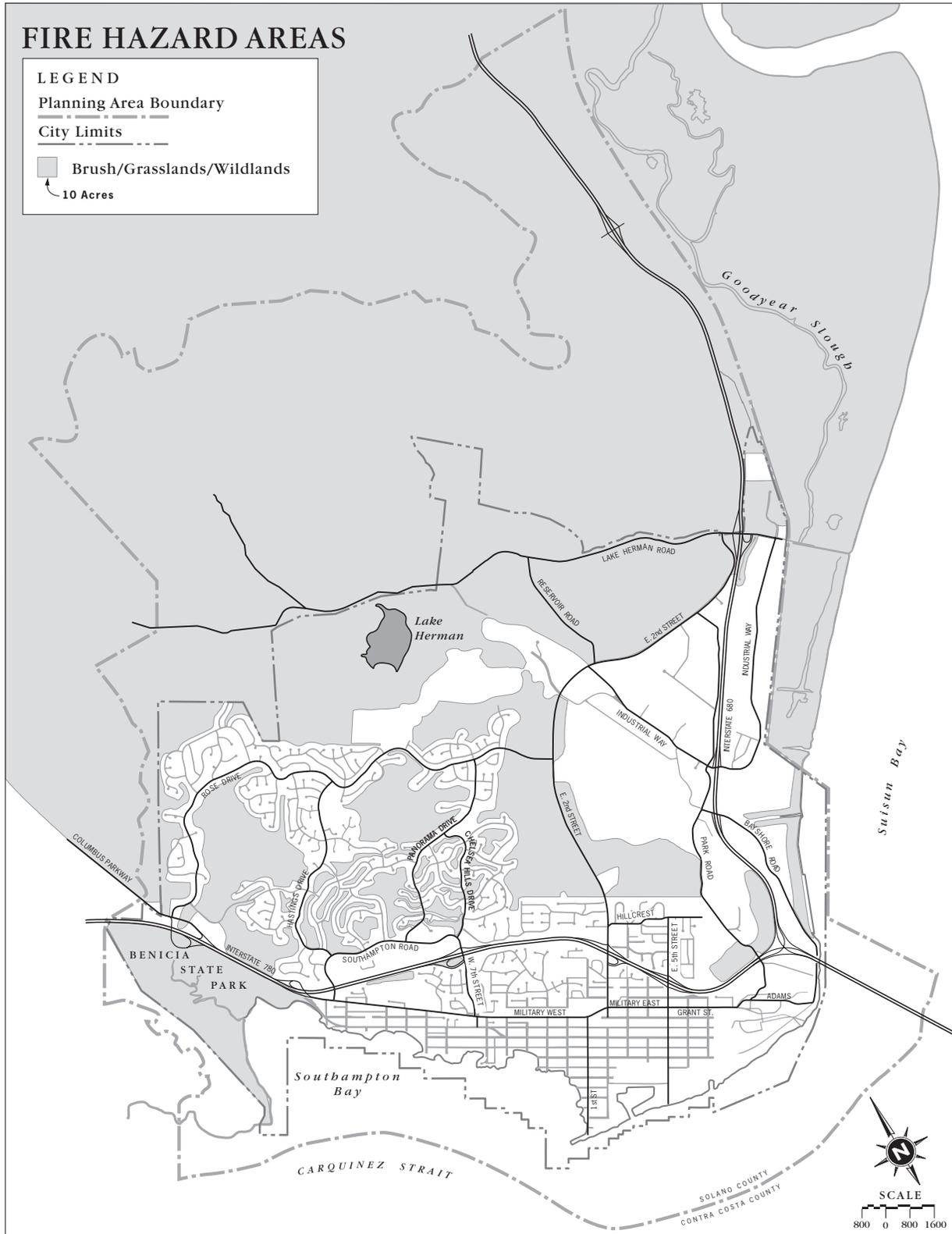


Figure 4-4. Fire Hazards

General locations of identified known or suspected hazardous substances and waste sites in Benicia are shown in Appendix G. There are 57 identified hazardous waste sites in the Planning Area. With four exceptions—the IT Panoche Hazardous Waste Disposal Facility (Site 1), the Braito Landfill (Site 2), the landfill at the Benicia State Park site (Site 54), and the leaking underground storage tank at 510 West J Street (Site 36)—all of the sites are located within Downtown or in industrial areas of Benicia.

#### **HAZARDOUS MATERIAL AND WASTE HANDLERS**

Hazardous substances are commonly used and handled within Benicia under a wide variety of permitted activities and land uses. The potential for contamination at a site which handles hazardous substances depends on the type of business, types and quantities of hazardous substances, handling and management practices, control and spill containment systems, adequacy of accident prevention and safety programs, training programs and emergency response plans, and adjacent land uses. When handled properly and when used in compliance with permitting and other regulatory requirements, hazardous substances do not necessarily pose a human health concern or a threat to the environment. Nevertheless, the nature of hazardous materials implies an inherent risk to human health and the environment.

Benicia has a wide range of industries. Toxic hazards from any industry typically include hazards to employees relating to chemical use during the manufacturing processes, or inadvertent or accidental spillage during transport and handling, which could also potentially release toxic chemicals to the soil or groundwater. Other toxic hazards include inadvertent releases of airborne substances, including toxic gases, fumes, or dust, which could expose workers or the community to health hazards. In addition to toxic hazards, public health and safety concerns relate to the potential for fire and explosive hazards and transportation-related accidents.

#### **TOXIC AIR CONTAMINANT SOURCES**

As of April 1996, there were 38 inventoried sources of known Toxic Air Contaminants (TACs) in Benicia. They ranged from small dry cleaning operations to major refineries. The names and addresses of TAC sources in Benicia as well as a listing of the BAAQMD TAC inventory for sources within Benicia can be found in Table 8 and Appendix D of the Public Safety Background Report.

#### **HAZARDOUS BUILDING MATERIALS**

Some building materials commonly used in older buildings could present a public health risk if disturbed during an accident or during demolition of an existing building. These materials include asbestos, electrical equipment such as transformers and fluorescent light ballasts that contain polychlorinated biphenyls (PCBs), fluorescent lights containing mercury vapors, and lead based paints. If they are in a deteriorated condition, asbestos and lead based paint present a health risk to building occupants. If removed during demolition, these materials require special disposal procedures.

## 5. UTILITY HAZARDS

Utility networks provide water, energy, and information. These networks are widely distributed geographically, so access to all components of a network in an emergency may be difficult. The sections below discuss the transmission networks in place within the Planning Area and evaluate expected performance in emergencies. Figure 4-5 shows the location of these transmission lines and critical facilities in the Planning Area.

### **ELECTRIC POWER**

Pacific Gas & Electric Company (PG&E) supplies electric power to the Planning Area. A 230 kilovolt transmission line enters the Planning Area from the west, roughly paralleling Lake Herman Road, and terminates at the Bahia substation near East Second Street and Industrial Way. This substation provides power to most of Benicia. A 115 kilovolt transmission line roughly parallels the western edge of the Planning Area. A substation located near Glen Cove, outside the Planning Area, provides power to a portion of western Benicia.

Failure of electrical power systems during or after an emergency may result from a temporary imbalance within the system or damage to its components. The systems have a high degree of redundancy, allowing for restoration of power before complete repairs are made. The most vulnerable component appears to be high voltage transmission substations. Steel lattice high voltage transmission towers generally perform well in response to ground shaking. However, tower failure may occur as a result of ground displacement of the tower foundations from earthquake-induced landsliding or liquefaction. Towers and lines could also be damaged in a fire.

### **NATURAL GAS**

PG&E also supplies natural gas to the Planning Area. A major transmission pipeline traverses the northwestern corner of the Planning Area, with a pipeline branching off and paralleling Lake Herman Road, terminating in the vicinity of Industrial Way.

Another pipeline enters the Planning Area from the west via I-780, continues along Military West Street to terminate at First Street, with short branches on K Street to West Thirteenth Street, and West Seventh Street to Southampton Road. Smaller diameter distribution lines run throughout the developed portion of the Planning Area.

Disruption to natural gas service may result from severe ground shaking and permanent ground deformation in areas of unconsolidated sediments and fill. Although some damage to transmission lines may result from landslides or liquefaction, the majority of the damage is expected within the distribution system. Areas along the Bay margin, underlain by Bay mud, alluvium, and old fill, are particularly susceptible to damage.

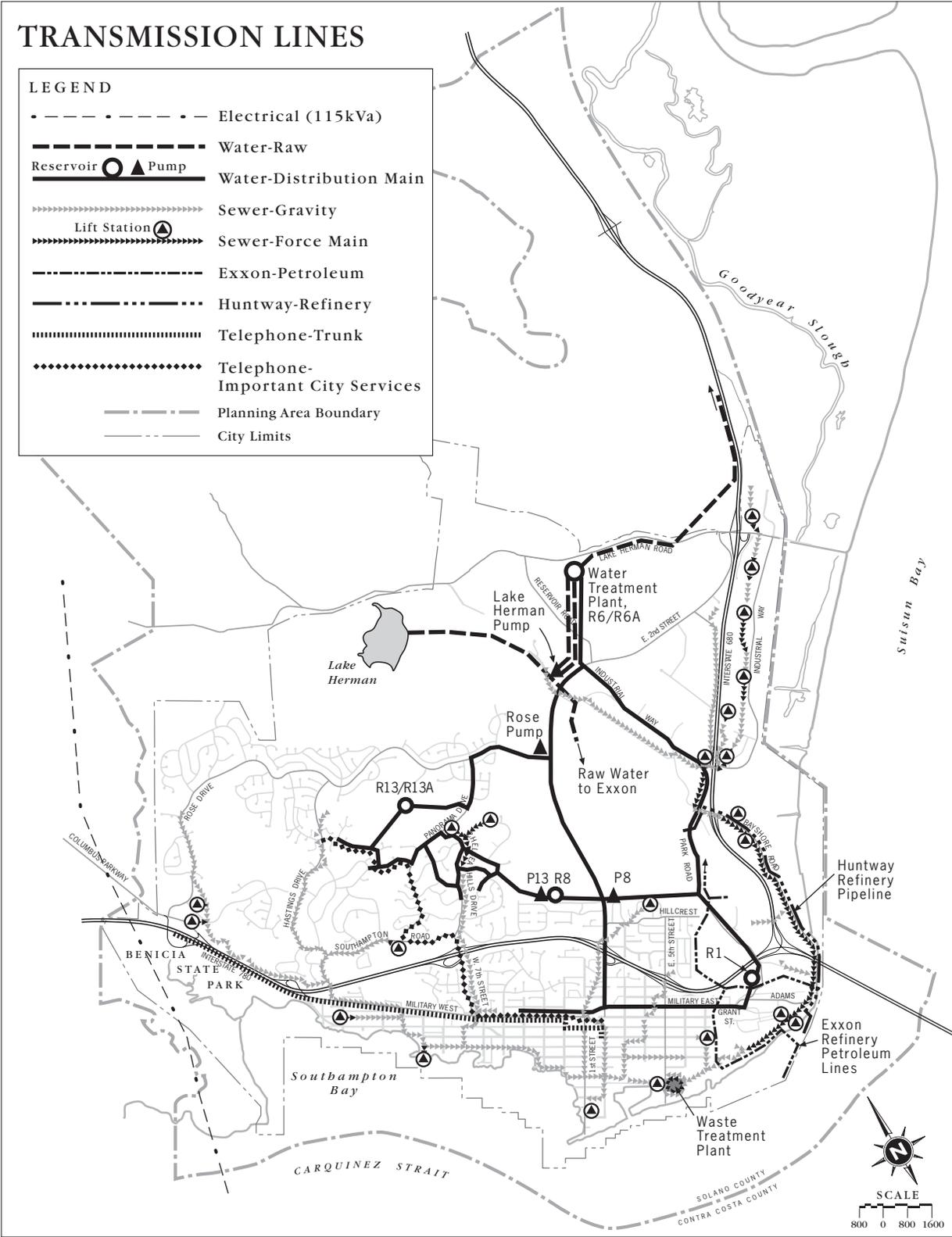


Figure 4-5. Transmission Lines and Critical Facilities

### **WATER SUPPLY**

The water treatment plant located near Lake Herman Road produces drinking water for areas within the City limits. Water is supplied to the treatment plant through the Cordelia Transmission Main that runs along I-680 from Cordelia to Lake Herman Road, and from there to the treatment plant.

Disruption to the water supply may result from damage to pipelines, water treatment plants, storage tanks, reservoirs, or the distribution network. Damage to supply and distribution pipelines typically results from earthquake-related ground deformation such as landsliding, lurching, or liquefaction. Damage to storage tanks and reservoirs may result from severe ground shaking, resulting in deformation of the tank or connections, and possible loss of the contents. Damage to reservoirs may result from permanent ground deformation within or adjacent to the dam or shoreline. An adequate water supply needs to be available through normal means for firefighting. Water treatment plants have generally performed well in past disasters.

### **WASTE WATER**

Damage to waste water collection and treatment systems may result from damage to the collection network and treatment facilities. The risks that face the waste water collection system also apply to the underground natural gas and potable water networks. In general, damage to pipes is related to the amount of permanent ground deformation.

The Benicia Waste Water Treatment Plant is located within an area of alluvium near the waterfront, and ground shaking during a large, local earthquake may result in some damage. The collection network may suffer damage in areas subject to soft sediment deformation, such as parts of Downtown and along the waterfront, or areas subject to landsliding or fill settlement, such as in the hilly areas.

## **6. AIR QUALITY/CONTAMINATION**

### **Air Quality in Benicia**

Benicia is within the Bay Area Air Quality Management District (BAAQMD). The District operates a network of monitoring sites throughout the Bay Area. The BAAQMD maintains a site in Benicia to monitor sulfur dioxide. From 1990 to 1994, the Benicia monitoring site did not record any violations of the State or federal standards for sulfur dioxide.

The closest multi-pollutant monitoring site is in Vallejo. From 1990 to 1994, the State and federal standards for carbon monoxide, nitrogen dioxide, and sulfur dioxide were met every day at the Vallejo monitoring site. The federal standard for ozone was also met, although the more stringent State standard for ozone was exceeded from one to three days per year.

Because of the relatively strong winds and the movement of air between the Bay Area and the Central Valley through the Carquinez Strait, Benicia does not experience air pollution problems as severe as those found in other more confined parts of the Bay Area.

Air quality forecasts are expected to continue to improve through 2000. The longest forecasts available, however, do not demonstrate attainment of all state and federal air quality standards.

**Standards**

Both the US Environmental Protection Agency (EPA) and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards establish levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The federal and State ambient standards were developed independently with differing purposes and methods, although both processes attempt to avoid health-related effects. In general, the California state standards are more stringent.

Another group of substances known as Toxic Air Contaminants (TACS), are injurious in small quantities and are regulated despite the absence of criteria documents. No safe ambient levels have been established for TACS. The identification, regulation and monitoring of TACS is relatively recent compared to that for criteria pollutants.

## C. RESPONSES TO HAZARDS

### 1. COMMUNITY RIGHT-TO-KNOW

California first adopted its “Community Right-to-know” program in 1985 to oversee the handling of hazardous materials by local regulatory agencies; a succession of State statutes amended the program in 1986 and 1989. In 1986, Congress enacted the *Superfund Amendments and Reauthorization Act, Title III: The Emergency Planning and Community Right-to-Know Act* (EPCRA). Together, these statutes establish requirements relating to emergency responses to hazardous materials releases or threatened releases, and to avoidance of accidents involving certain hazardous materials. The basic requirements of Community Right-to-know include:

- Immediate reporting of releases of hazardous materials.
- Submission and update of a Hazardous Materials Business Plan and inventory as required by the local administering agency.
- Notification to the local administering agency of the handling of specified quantities of hazardous material and submission of a Risk Management Prevention Program on request.
- Annual submission by manufacturing facilities of a Toxic Chemical Release Report (Form R) if threshold amounts of certain toxic chemicals are made, processed, or used.
- Requirements for hazardous materials storage imposed by local administering agencies and Cal-OSHA standards.

### 2. EMERGENCY RESPONSE PLANS AND PROCEDURES

Recent disasters in California have tested communities’ emergency preparedness. The 1989 Loma Prieta Earthquake, the 1991 Oakland Hills Fire, the 1993 chemical release at a Richmond refinery, and the 1994 Northridge earthquake all demonstrated the need for preparedness in government operations, transportation and evacuation routes, utility lifelines, and emergency alert and notification.

#### **EMERGENCY OPERATIONS PLAN**

The City of Benicia maintains an Emergency Operations Plan (EOP) adopted by the City Council in 1989. It is a “multi-hazard” plan that identifies procedures for various types of emergencies. It is intended to ensure that City government can continue to function in the event of a disaster. The EOP provides guidance for the community’s response to extraordinary situations and disasters. It provides an overview of operational concepts, identifies components of the City Emergency Management Organization, and describes the overall responsibilities of federal, State, County and City officials in an emergency. The plan is periodically updated, and drills evaluating the effectiveness of the plan are conducted from time to time. The EOP designates the City

Manager as the Director of Emergency Services, responsible for overall emergency management in the City. The Fire Chief is designated as the Assistant Director of Emergency Services, responsible for maintaining the Plan and for the operation of the City Emergency Operations Center (EOC).

#### **EVACUATION ROUTES**

In an emergency, the major arterials identified in Chapter 2C, Circulation, would serve as the principal routes for evacuating people to undeveloped areas north of the City. These arterials would also serve as the principal routes for moving emergency equipment and supplies. Of particular importance are those routes which parallel I-780 in the event the freeway overpasses collapse or are blocked. Evacuation routes relating to site-specific plans are contained in Appendix H of the EOP.

### **3. PUBLIC SAFETY SERVICES**

#### **CRIME**

Benicia has a relatively low crime rate. Benicia's crime rate appears to have generally held steady since the mid-1980s, although there have been annual fluctuations.

#### **POLICE SERVICES**

The City of Benicia Police Department provides police services to City residents. In addition to its responsibilities within the City Limits, the Department provides first response service to areas within the City's Sphere of Influence. The Department shares responsibility for policing the Benicia Industrial Park with private guards employed by individual industries in the park. The Department operates out of a single station in the civic complex.

#### **FIRE SERVICES**

##### **City Fire Protection Standards**

Each fire jurisdiction has independent authority to adopt and administer its own fire code (Health & Safety Code §13869). Most do so by adopting all or portions of the Uniform Fire Code (UFC), with additions or deletions appropriate to the jurisdiction.

The City's Fire Department has adopted the standards defined in the latest edition of the California Uniform Fire Code, with a few local amendments to these standards.

##### **Fire Department Services**

The Benicia Fire Department provides fire suppression, fire prevention, basic and advanced life support (ALS) medical services, technical rescue services, disaster preparedness, and weed abatement services for all areas within the City Limits and some nearby areas outside the city. The Department has two fire stations, with a total of two engines and one rescue squad staffed 24 hours per day. Future growth may require additional fire stations.

The City maintains mutual aid agreements with several agencies. An interagency agreement encompasses mutual responses with all other fire departments in Solano County. The City also has a contract with the State Office of Emergency Services (OES); the City has agreed to staff a State-owned engine at Station Two in exchange for an OES commitment to respond as needed. In addition to these contracts, the City has specific agreements for special hazards with the Cordelia Fire Protection District, the Contra Costa Fire Protection District for emergency responses on the Benicia - Martinez Bridge, and the Napa County Hazardous Materials Team.

In addition to fire protection services, the Fire Department responds to certain emergency incidents such as rail accidents, spills of hazardous materials, or similar accidents. The Benicia Fire Department and Exxon have joint responsibility for fire protection at the Exxon refinery. Primary fire protection at the refinery is provided by the refinery fire brigade, which is composed of firefighters and trained Emergency Medical Technicians (EMTs). All technicians and operating team supervisors at the refinery are trained in industrial fire fighting.

In order to ensure an effective response to hazardous materials incidents, industrial businesses using hazardous materials are required to prepare a business plan which identifies hazardous materials used in the operation of the business and the means for addressing potentially hazardous situations. In addition to detailed descriptions of materials used on a business site, the business plan must contain a description of how and where the hazardous materials are handled, sufficient for fire, safety, health and other appropriate agencies to prepare for emergency response (Health & Safety Code §25501[e]). These plans are discussed in Chapter 5 of the Public Safety Background Report.

#### 4. MEDICAL SERVICES

There are no hospitals located in the city. Residents most commonly use Sutter Solano Medical Center and Kaiser Permanente, both in Vallejo. Nearby hospitals include Kaiser-Martinez, Mt. Diablo Hospital, and Contra Costa Regional Medical Center in Contra Costa County. Benicia does have a number of medical offices and clinics within the City limits.

#### 5. COMMUNITY HAZARDS GOALS, POLICIES, AND PROGRAMS



**GOAL 4.7:**                    **Ensure that existing and future neighborhoods are safe from risks to public health that could result from exposure to hazardous materials.**

**POLICY 4.7.1:**                Actively recruit industries and businesses that sustain environmental quality and have sound, responsible environmental practices and policies, such as “best available control technol-

ogy” (BACT), source reduction, reduced use of hazardous materials in production, and reduced waste.

**POLICY 4.7.2:** Establish a “Community Right-to-know” program to promote general public understanding of Benicia’s toxics problems as they affect current and future generations.

The Federal Environmental Protection Agency, under the Emergency Planning Community Right to Know Act (EPCRA) and the Superfund Amendments Reauthorization Act (SARA) Title 3, 1986, mandated the right of the public to information which would affect emergency response and preparedness for “credible worst case scenarios” from potential industrial hazards. (Superfund Amendments Reauthorization Act, Title 3: The Emergency Planning and Community Right-to-Know Act, enacted by Congress in 1986).

*Program 4.7.A:* Using documents that are already publicly available, make available in the Library a list of all known contaminated sites in Benicia, their chemical contents and conditions, and how contamination occurred.

*Program 4.7.B:* Provide readers with easy directions on how to access information about contaminated sites in Benicia.

*Program 4.7.C:* Consider establishing an ad hoc environmental task force to collect and disseminate information on environmentally sensitive sites in Benicia.

The task force would help to gather information on community toxic problems to inform and safeguard public health and safety.

*Program 4.7.D:* Identify, inventory, and then update sources of hazards in Benicia.

*Program 4.7.E:* Assess and evaluate Benicia’s preparedness to respond to hazard emergencies.

This program should be a part of the “Community Right-to-know” program and conform with the Emergency Planning Community Right-to-know Act (EPCRA).

**POLICY 4.7.3:** Protect existing and future development from contaminated sites, hazardous landfill waste and debris, chemical spills, and other hazards including unexploded ordnance and explosive waste.

Information on unexploded ordnance on Arsenal properties can be found in the Army Archives Search Report for the Benicia Arsenal and other federal documents.

*Program 4.7.F:* Work with state and federal agencies to require that unauthorized hazardous substances be removed from neighborhoods or that other appropriate measures are taken to ensure that

such substances do not present health risks to the neighborhood.

**POLICY 4.7.4:** Promote enforcement of regulatory requirements over the entire term of monitoring of identified hazardous sites within the City Limits, especially sites located in residential neighborhoods and near school playing fields and parks.

**POLICY 4.7.5:** Require that all sites known or suspected to have unexploded ordnance and/or a toxic history be tested and remediated before any development can occur.

**POLICY 4.7.6:** Prohibit residential development on any land formerly operated as landfill or dump, including land formerly owned or used by the military for military wastes, until the waste and contamination is removed with proper agency oversight, or remediated as required by the appropriate regulatory agencies.

**POLICY 4.7.7** Where environmental testing has been required by State regulatory agencies but is not yet completed withhold City approvals for site grading and other construction activities until a site evaluation is available that provides a reasonable basis for determining that it is safe to commence such activities.



**GOAL 4.8: Protect sensitive receptors from hazards.**

*Program 4.8.A:* Identify sensitive receptors in the community and develop methods of protection.

*Program 4.8.B:* Establish guidelines to separate sensitive receptors from those who carry, use, process, store or generate hazardous material, including ordnance.

**POLICY 4.8.1:** Evaluate potential hazards and environmental risks to sensitive receptors before approving development.



**GOAL 4.9: Ensure clean air for Benicia residents.**

**POLICY 4.9.1:** Establish whether a significant air pollution problem exists in Benicia and the City's role in resolving it.

*Program 4.9.A:* Prepare a review of existing air quality information and data sources, the quality and extent of this data, and existing regulatory requirements.

*Program 4.9.B:* Consult with the staff of the BAAQMD and prepare recommendations for actions that the City will take to reduce identified air quality problems toward meeting ambient air quality standards.



**GOAL 4.10: Support improved regional air quality.**

**POLICY 4.10.1:** Support implementation of Bay Area Clean Air Plan.

The Bay Area Clean Air Plan provides a strategy for attaining all the air quality standards in the nine-county Bay Area Air Quality Management District. Benicia would demonstrate consistency with the Bay Area Clean Air Plan by implementing Transportation Control Measures (TCMs) including expanding employer assistance programs, improving bicycle access and facilities, improving arterial traffic management, establishing transit use incentives, and adopting a local clean air plan, policies, and programs.

*Program 4.10.A:* Coordinate air quality planning efforts with other local, regional, and State agencies.

*Program 4.10.B:* Require that projects with identified significant air quality impacts include all feasible mitigation measures needed to reduce impacts to less than significant levels.

**POLICY 4.10.2:** Encourage designs and land use strategies that reduce automobile use and promote mixed use, jobs/housing balance, telecommuting, bicycle, and pedestrian facilities, and transit.



**GOAL 4.11: Minimize harm from geologic hazards.**

*Program 4.11.A:* Require geotechnical engineering reports to address site stability and building foundation integrity for projects involving substantial grading.

*Program 4.11.B:* Develop guidelines for site-specific geologic and geotechnical reports.

*Program 4.11.C:* Require peer review of geotechnical engineering reports if it is determined that City staff does not have the technical expertise to review such reports.

*Program 4.11.D:* Prepare a planning-level geologic hazards map of the Planning Area as needed.

*Program 4.11.E:* Update the geologic hazards map as new information becomes available.

*Program 4.11.F:* Develop a Planning Area data base of geologic information for use when making planning decisions and as a resource for the community.

*Program 4.11.G:* Continue and expand the Unreinforced Masonry building program (URM).

*Program 4.11.H:* Consider financial assistance for retrofitting of unreinforced masonry buildings.

**POLICY 4.11.1:** Promote public awareness of earthquake-related hazards and safety that includes training the populace to provide stop-gap emergency services following earthquakes.

*Program 4.11.I:* Consider implementing a citizen earthquake response system based on the San Francisco model.

The San Francisco model involves hands-on training and practice by all citizens on how to respond during an earthquake. Funding may come from private contributions.



**GOAL 4.12: Accommodate runoff from existing and future development.**

Flooding problems exist along Sulphur Springs Creek in the Industrial Park. Future upstream development in the Paddy Creek watershed could exacerbate existing flooding. There are many localized flooding problems within the City south of I-780. A new citywide storm drain master plan is needed, and funding will have to be identified before improvements can be implemented.

**POLICY 4.12.1:** Regulate runoff from new development so that post-development site peak flow rates are no greater than pre-development levels.

**POLICY 4.12.2:** Upgrade existing drainage facilities as necessary to correct localized drainage problems.

**POLICY 4.12.3:** Ensure that new development pays its fair share cost of drainage system improvements.

*Program 4.12.A:* Prepare a new citywide storm drain master plan.

*Program 4.12.B:* Adopt a combination of drainage improvement fees and other mechanisms to fund drainage improvements.

*Program 4.12.C:* Accelerate implementation of the existing Storm Drain Master Plan.

**POLICY 4.12.4:** Where practicable, discourage the use of storm drain systems, and promote stormwater management strategies which maximize opportunities for absorption of rainfall, overland conveyance of runoff, non-reservoir surface storage, and other measures that reduce development-induced impacts on peak flow rates.



**GOAL 4.13: Prevent property damage caused by flooding.**

**POLICY 4.13.1:** Continue to implement the floodplain management policy currently followed by the City.

*Program 4.13.A:* Require all potential developers in the Sulphur Springs Creek

floodplain to provide flood hazard mitigation measures that ensure the subject properties are not at risk of flooding during the FEMA-designated 100-year base flood.

**POLICY 4.13.2:** Promote non-structural solutions to flood problems, where feasible.

*Program 4.13.B:* Where appropriate, promote the use of stormwater retention basins rather than standard engineering modifications to natural channels.

*Program 4.13.C:* Encourage use of meandering drainage channels in all new developments and wherever channels are replaced.



**GOAL 4.14: Prevent ground and surface water contamination.**

*Program 4.14.A:* Inform businesses and the public of current technology and standards for preventing ground and surface water contamination, and regulations governing hazardous material use, storage, and disposal, plus agency reporting requirements.

*Program 4.14.B:* Continue to communicate with State, regional, and local agencies and legislatures to relay information on Benicia’s current and potential water quality contamination concerns, particularly regarding hazardous waste sites, existing and closed landfills, new and existing waste-generating industries and commercial operations, and City waste disposal and water/ sewage treatment facilities.

**POLICY 4.14.1:** Implement non-point source pollution strategies.

*Program 4.14.C:* Provide information to the public on provisions of the City’s Stormwater Pollution Prevention Plan (SWPPP) program and preparation of SWPPPs for all construction projects of five acres or more. Implement Best Management Practices (BMPS) for stormwater runoff and erosion controls for all development.

*Program 4.14.D:* Conduct an outreach program to industry and residents on how to reduce storm water-related pollution.



**GOAL 4.15: Reduce fire hazards.**

**POLICY 4.15.1:** Promote the creation and maintenance of natural and artificially constructed firebreaks between development and open space areas through the use of fire resistive landscaping, weed abatement, discing, and other methods.

*Program 4.15.A:* Develop a Fire Hazards Response Plan for the urban wild land interface area.

- Program 4.15.B:* Conduct a fire-hazard outreach program to neighborhood groups, the elderly, and the handicapped.
- Program 4.15.C:* Continue and expand routine fire inspections for businesses for compliance with the Uniform Fire Code and the California Fire Code.
- Program 4.15.D:* Continue the yearly weed abatement program.
- POLICY 4.15.2:** Promote the use of fire-resistant landscaping in public and private developments.



**GOAL 4.16: Require hazardous materials and hazardous waste management handling and disposal procedures that are protective of human health and the environment.**

- POLICY 4.16.1:** Support the Solano County Hazardous Waste Management Plan and its goals, policies, and implementation guidelines for hazardous waste reduction, hazardous waste facility siting, hazardous waste handling and disposal, public education and involvement, and program coordination with regulatory requirements.
- Program 4.16.A:* As part of the permitting process, ensure that the County reviews the design and operating plans for handling and disposal of hazardous wastes for existing and proposed new businesses.
- Program 4.16.B:* Contact the Solano County Environmental Management Department annually to confirm that hazardous waste generators in Benicia have been granted permits for handling hazardous substances in compliance with federal and State laws, that they dispose of their wastes in accordance with applicable laws, and that they have filed Hazardous Materials Management Plans and Risk Management and Prevention Plans.
- Program 4.16.C:* Continue reviewing monitoring records for new and existing hazardous waste storage areas for compliance with federal and State law.
- POLICY 4.16.2:** Continue, promote, and expand the City's Household Hazardous Waste Program.
- Program 4.16.D:* Promote use of Benicia's and Pacheco's "drop-off" facilities.
- POLICY 4.16.3:** Control water runoff that comes from hazardous substance handling or that enters hazardous substance handling areas.

*Program 4.16.E:* Investigate the potential for the collection and testing of industrial area surface runoff prior to discharge to prevent discharge of hazardous substances into the environment.



**GOAL 4.17: Minimize hazardous waste generation.**

**POLICY 4.17.1:** Ensure enforcement of Title 22, §67100 of the California Code of Regulations regarding preparation and implementation of source reduction plans by hazardous waste generators.

*Program 4.17.A:* Contact the Solano County Environmental Management Department each September to confirm that new businesses have filed their source reduction plans, if applicable.

*Program 4.17.B:* Situate all new hazardous material storage and handling areas to minimize the possibility of environmental contamination in the event of an accidental spill.

*Program 4.17.C:* Enclose areas where hazardous liquids are handled to minimize any rain or moisture coming into contact with hazardous substances.



**GOAL 4.18: Ensure the proper and thorough clean-up of hazardous waste sites including the Rose Drive/Braitto landfill area.**

**POLICY 4.18.1:** Monitor and participate in the remedial planning process for major hazardous waste sites within the City and monitor implementation of any selected remedial actions to ensure that human health and the environment are protected over the long term.

*Program 4.18.A:* Continue to work with the California Department of Toxic Substances Control (DTSC) to expedite the proper and thorough clean-up of waste in the Rose Drive area.



**GOAL 4.19: Ensure the best possible closure of IT, considering the long-term health effects upon sensitive receptors in the community.**

*Program 4.19.A:* For the IT site, continue to communicate Benicia's position that the only acceptable closure plan is a groundwater-divide-based alternative (i.e., a closure plan based on removing waste and contamination that lie outside the main site drainage).



**GOAL 4.20:**            **Reduce health and safety hazards associated with hazardous materials users, hazardous waste generators, and hazardous waste disposal sites and toxic air contaminants.**

**POLICY 4.20.1:**        Establish buffer zones between sensitive land uses and those land uses which involve the significant use, storage, or disposal of hazardous materials, hazardous waste, or toxic air contaminants.

*Program 4.20.A:*        Maintain and designate land along East Second Street for non-residential purposes.

*Program 4.20.B:*        Follow siting criteria for Treatment, Storage, and Disposal (TSD) facilities contained in the Solano County Hazardous Waste Management Plan. (22 California Code of Regulations (CCR) §66260-18; State Health and Safety Code §25201.)

*Program 4.20.C:*        Evaluate the potential for requiring risk assessment for any new TSD facility, and if indicated by the risk assessment, require a larger buffer zone that will be protective of human health.

*Program 4.20.D:*        Review building applications for any proposed TSD facilities to ensure that the requirements of the Solano County Hazardous Waste Management Plan are met.

*Program 4.20.E:*        Coordinate with Solano County Environmental Management Department to ensure enforcement of community Right-to-know laws (Chapter 6.95 of the Health and Safety Code, §25500, et seq.).

*Program 4.20.F:*        Enforce the Hazardous Waste Property and Border Zone Property Law (Health and Safety Code, Article 11, §2520 through §25241).



**GOAL 4.21:**            **Reduce significant hazards associated with pipelines, and high voltage transmission lines.**

*Program 4.21.A:*        Continue to implement existing adopted policies governing development near pipelines.

*Program 4.21.B:*        Set back all residential uses, schools, and public buildings at least 150 feet from the edge of 230 kilovolt electric transmission line easements.



**GOAL 4.22:**            **Update and maintain the City's Emergency Response Plan.**

- POLICY 4.22.1:** Provide an early community alert and notification system and safe evacuation plan for emergency incidents.
- Program 4.22.A:* Provide the public with information and training on what to do until help arrives in emergency situations.
- Program 4.22.B:* Develop a siren system to alert and notify the community in an emergency.
- Program 4.22.C:* Request voluntary donations from identified sources of hazards to implement the Emergency Response Plan.
- Program 4.22.D:* Consider a City radio station to inform residents in the event of an emergency.
- POLICY 4.22.2:** Develop at least two exit routes, where feasible, for new developments. One of the exits could be a pedestrian route.
- POLICY 4.22.3:** Provide the public with information on specified emergency evacuation routes.
- Program 4.22.E:* Provide an evacuation route from the Arsenal in addition to Military East.

## D. NOISE

The principal noise generator in Benicia is vehicular traffic. People are most sensitive to noise levels which disturb their comfort at home.

The Noise section describes the existing and projected future noise environments in Benicia so that harmful and annoying sound levels can be avoided or minimized. Major noise sources are identified, estimated noise levels throughout the community are reported, the effects of noise on the community are discussed, and ways to minimize unwanted noise are outlined.

### 1. HUMAN REACTION TO NOISE

Three qualities characterize the subjective effect of noise on the listener: (1) the frequency of the noise, (2) the intensity of the noise, and (3) the time-varying character of the noise.

Researchers have grappled with how to translate objective measurements of sound into directly correlated measures of public reaction to noise. The descriptors of community noise in current use are the results of these efforts and represent simplified, practical measurement tools to gauge community response.

Table 4-1 shows the decibel levels of common noises.

**Table 4-1. Decibel Levels of Common Noises**

20	Soft whisper
40	Quiet office, living room, bedroom—away from traffic.
50	Light traffic at a distance, refrigerator, gentle breeze.
60	Average conversation, air conditioner at 20 feet, sewing machine.
65	Quiet typewriter.
70	Busy traffic, office tabulator, noisy restaurant. (This level may begin to affect hearing if one is constantly exposed.)
75	Vacuum cleaner.
80	Subway, heavy city traffic, ringing alarm clock at two feet, average factory noise. (Dangerous if exposure continues for more than eight hours.)
85	Truck traffic, noisy home appliances (washing machine, blender, food processor), power lawn mower. (Dangerous, even if exposure is less than eight hours.)
95	Noisy factory, shop tools.
100	Elevated train, chain saw, pneumatic drill. (Dangerous, even if exposure is less than two hours.)
120	Rock concert in front of speakers, sandblasting, thunderclap. (Danger is immediate.)
140	Jet airplane at 200 feet, gunshot blast. (Any length of exposure is extremely dangerous.)

The known effects of noise on people include hearing loss (not generally a factor with community noise), communication interference, sleep interference, physiological responses, and annoyance. Although the wide range of individual reactions to noise makes it extremely difficult to measure how noise affects individual health, medical studies suggest a correlation between noise and mental stress.

A *decibel* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

#### **COMMUNICATION INTERFERENCE**

Communication interference is one of the primary environmental noise problems, and includes speech interference and interference of activities such as watching television. Normal conversational speech is in the range of 60 to 65 dB, and any noise in this range or louder may interfere with speech.

#### **SLEEP INTERFERENCE**

Sleep interference is a major noise concern. Noise can make it difficult to fall asleep, can create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and can cause awakening.

Extensive research has been conducted on the effect of noise on sleep disturbance. Recommended values for desired sound levels in residential bedroom space range from 25 to 45 dB with 35 to 40 dB being the norm. The National Association of Noise Control Officials published data on the probability of sleep disturbance with various single event noise levels. Based on experimental sleep data related to noise exposure, a 75 dB interior noise level event will cause noise-induced awakening in 30 percent of all cases.

#### **PHYSIOLOGICAL RESPONSES**

Physiological responses are those measurable effects of noise on people which are realized as changes in pulse rate, blood pressure, *etc.* While such effects can be induced and observed, it is not known to what extent these physiological responses cause harm. Generally, physiological responses are a reaction to a loud, short-term noise such as a rifle shot or a very loud jet overflight.

#### **ANNOYANCE**

Annoyance is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another. The level of annoyance

depends on the characteristics of the noise (*i.e.*, loudness, frequency, time, and duration), and how much activity interference (*e.g.*, speech interference and sleep interference) results from the noise. However, the level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to noise not of their own making, while approximately 20 percent are unaffected by noise. Attitudes are affected by the relationship between the person and the noise source. (Is it our dog or the neighbor's?) Whether we believe that someone is trying to abate the noise will also affect our level of annoyance.

The following conclusions have been established through extensive study:

1. Except in carefully controlled laboratory experiments, an increase of only one dBA cannot be perceived by humans.
2. Outside of the laboratory, a three dBA increase is considered to be just noticeable.
3. A change of five dBA is required before any noticeable change in community reaction would be expected.
4. A 10 dBA increase is subjectively heard as a doubling of loudness and would most certainly cause community response.

## 2. NOISE IN THE COMMUNITY

### EXISTING NOISE LEVELS

Once noise levels are computed or measured, they can be mapped. Noise levels are mapped as contours. Each contour line indicates an area on the inside of the line which has a higher noise level than the contour's value; the area on the outside of the line has a lower noise level than the contour's value. Because local topography, vegetation, or intervening structures may significantly affect noise exposure at a particular location, the noise contours should not be considered site-specific. Figure 4-6 shows existing noise contours in Benicia.

These noise contours were formulated based on a community noise survey conducted in October and November 1995. The results indicated that typical exterior noise levels in noise sensitive areas (*i.e.*, nursing homes, churches, theaters, residential uses, parks, libraries, and schools) are in the range of 51 dB to 63 dB L<sub>dn</sub>. Traffic on local roadways and I-680 and I-780, industrial activities, and neighborhood activities are the contributing factors for background noise levels in the majority of the study area. Table 4-2 is a summary of the survey.

### PROJECTED NOISE LEVELS

Traffic on I-680 and I-780 is expected to increase through the year 2015. The hourly traffic flow and mix of trucks and private automobiles during a typical 24-hour period is not expected to change. No major increase in railroad operation is expected to occur in the near future. Figure 4-7 indicates future noise contours.

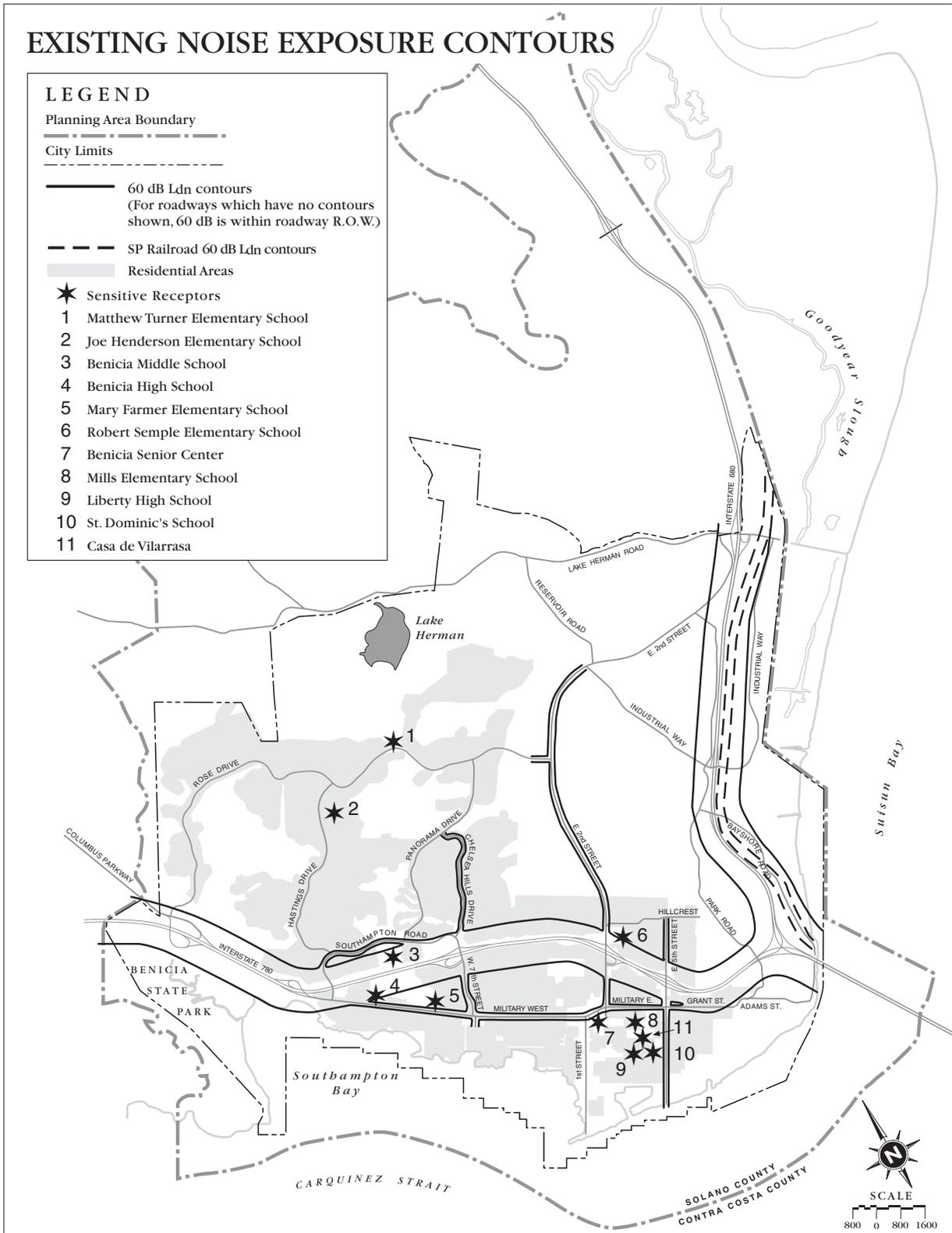


Figure 4-6. Existing Noise Contours

**Table 4-2. Summary of Measured Exterior Noise Levels and Estimated Day-Night Average Levels ( $L_{dn}$ ) in Areas Containing Noise-Sensitive Land Uses**

Site	Location	Time/Period	Sound Level, dB				Estimated $L_{dn}$
			$L_{eq}$	$L_{50}$	$L_{90}$	$L_{max}$	
1*	329 Columbia Circle	—	—	—	—	—	54.2
2*	507 Bristol Court	—	—	—	—	—	54.0
3*	803 Elaine	—	—	—	—	—	50.8
4*	1781 Lindo Street	—	—	—	—	—	63.2
5	Corner of Reservoir Road and Lake Herman Road	Ld(1)	51.5	39	32	66.0	53.1
		Ld(2)	55.5	48	37	70.5	
		Ln	41.0	35	30	60.0	
6	Benicia Community Park	Ld(1)	46.0	45	40	57.0	52.0
		Ld(2)	46.0	44	40	62.5	
		Ln	45.5	37	32	60.0	
7	Southampton Park	Ld(1)	56.5	53	46	72.0	56.0
		Ld(2)	53.5	47	39	68.5	
		Ln	47.0	40	36	59.0	
8	Turnbull Park	Ld(1)	48.5	45	43	63.0	52.2
		Ld(2)	53.5	48	44	70.5	
		Ln	43.0	39	37	57.5	
9	City Park (Second St. & West K Street)	Ld(1)	57.0	57	55	64.9	60.7
		Ld(2)	57.6	56	53	67.2	
		Ln	53.5	51	48	65.0	
10	Bridgeview Park	Ld(1)	51.9	45	41	67.8	51.6
		Ld(2)	49.8	45	43	60.7	
		Ln	42.8	40	38	58.0	
11	Benicia Middle School Athletic Fields/ Bay View Villas	Ld(1)	54.5	54	52	61.6	58.0
		Ld(2)	53.1	53	50	58.2	
		Ln	51.0	49	47	56.0	
12	Matthew Turner Shipyards Park	Ld(1)	58.4	58	54	63.1	56.8
		Ld(2)	53.1	51	48	63.1	
		Ln	47.3	45	42	58.0	

\* Continuous Monitoring Site

Ld = Measured noise level during daytime hours (7:00 am - 10:00 pm)

Ln = Measured noise level during nighttime hours (10:00 pm - 7:00 am)

$L_{eq}$  = The average noise level during a given time period

$L_{50,90}$  = The average noise level experienced 50 and 90 percent of a given time period

$L_{max}$  = The maximum sound level recorded during a noise event

$L_{dn}$  = The average noise level during a 24-hour day after 10 decibels has been added to the levels between 10 pm and 7 am.

# FUTURE NOISE EXPOSURE CONTOURS

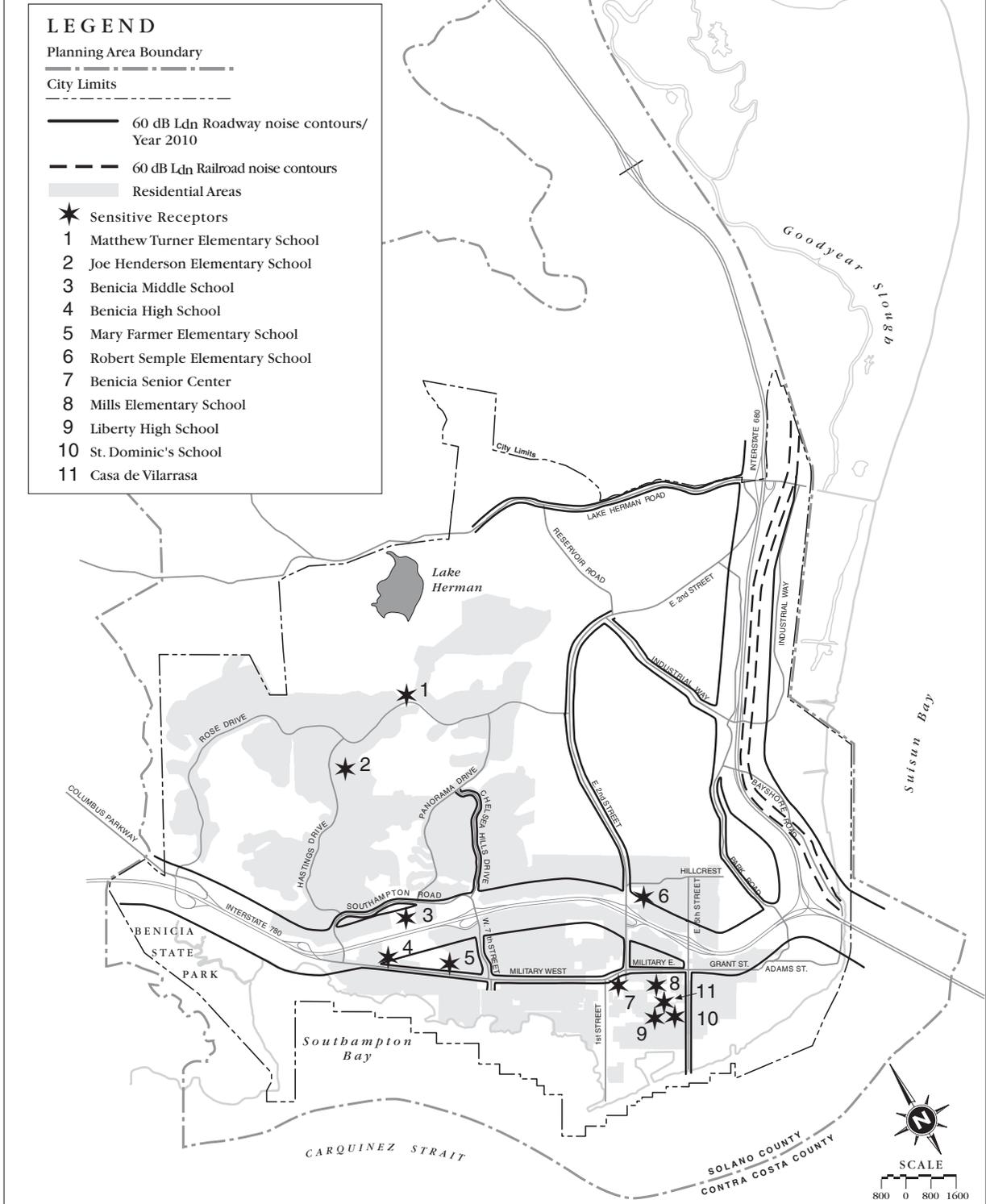


Figure 4-7. Future Noise Contours

### 3. PERFORMANCE STANDARDS FOR NOISE SENSITIVE USES

#### TRANSPORTATION NOISE SOURCES

Table 4-3 provides specific standards for determining the compatibility of proposed noise-sensitive land uses with transportation noise sources (refer to glossary for definition). Where noise-sensitive projects are proposed within areas which exceed the standards contained in Table 4-3, it is necessary to prepare a report that (a) performs an analysis of noise impacts, and (b) recommends mitigation measures to reduce noise levels on the site to comply with the standards in Table 4-3. This table is only to be used with proposed projects; the City’s noise ordinance governs noise associated with existing uses.

**Table 4-3. Maximum Allowable Noise Exposure for New Noise-Sensitive Uses From Transportation Noise Sources**

Land Use	Outdoor Activity Areas <sup>1</sup>	Interior Spaces	
	$L_{dn}/C_{NEL}$ , dB	$L_{dn}/dB$	$L_{eq}$ , dB <sup>2</sup>
Residential	60 <sup>3</sup>	45	—
Transient Lodging	65 <sup>4</sup>	45	
Hospitals, Nursing Homes	60 <sup>3</sup>	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	60 <sup>3</sup>	—	40
Office Buildings, Commercial Uses, Industrial, Manufacturing, Utilities <sup>5</sup>	—	—	45
Schools, Libraries, Museums	60 <sup>3</sup>	—	45
Playgrounds, Neighborhood Parks	65	—	—

<sup>1</sup> Where the location of outdoor activity areas is unknown; or does not exist, the exterior noise level standard will be applied to the property line of the receiving land use. Refer to glossary for definition of outdoor activity area.

<sup>2</sup> As determined for a typical worst-case hour during periods of use.

<sup>3</sup> Where it is not possible to reduce noise in outdoor activity areas to 60 dB  $L_{dn}/C_{NEL}$  or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB  $L_{dn}/C_{NEL}$  may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table. If these noise levels cannot be complied with this will constitute a significant environmental impact.

<sup>4</sup> In the case of hotel/motel facilities or other transient lodging; with no proposed outdoor activity areas such as pool areas, only the interior noise level criterion will apply.

<sup>5</sup> Standards would only apply to areas requiring good speech intelligibility such as offices, conference rooms, etc.

#### **STATIONARY NOISE SOURCES**

Table 4-4 provides specific performance standards for determining the compatibility of proposed noise-sensitive land uses with stationary noise sources. The performance standards are for new noise-sensitive developments which may be affected by an existing stationary noise source. The performance standards also apply to new developments that include a stationary noise source which may affect an existing noise-sensitive development.

The intent of these performance standards is both to prevent new noise sources from encroaching on existing noise-sensitive developments and to prevent new noise-sensitive developments from encroaching on existing uses.

Noise sources evaluated relative to the performance standards in Table 4-4 should be considered with respect to their standard daily or weekly operating conditions. Noise sources may produce unusual noise levels due to temporary equipment malfunction, or unusual atmospheric conditions. Noise levels associated with these infrequent conditions are exempt from the performance standards contained in Table 4-4. In addition, the performance standards are not to be applied to safety signals or warning devices. In the event an acoustical study is required of an applicant, refer to Appendix I: "Requirements for an Acoustical Analysis."

**Table 4-4. Noise Level Performance Standards for Noise-Sensitive Land Uses Which May Be Affected by Stationary Noise Sources**

Land Use	Exterior Hourly $L_{eq}$ , dB		Interior Hourly $L_{eq}$ , dB	
	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Residential	55	50	40	35
Transient Lodging	55	50	40	35
Hospitals	—	—	40	35
Nursing Homes	55	50	40	35
Theaters, Auditoriums	—	—	35	35
Churches	55	50	40	40
Schools	55	50	45	45
Libraries	55	50	45	45

Stationary noise sources include industrial operations, outdoor recreation facilities, HVAC units, loading docks, etc.

The above standards may be adjusted upwards to allow for an increase in the existing ambient hourly  $L_{eq}$  caused by a proposed project. An increase of less than 3dB is permitted, even if the standards in Table 4-4 are exceeded; an increase of 3dB or greater constitutes a significant environmental impact, unless the increase does not cause the standards in Table 4-4 to be exceeded.

The noise level standards contained above shall be applied to a typical hour of operation. When a peak hour of operation is expected to occur consistently during daily or weekly operations, the standards shall also be applied to those operations.

Each of the noise standards specified above shall be lowered by five dB for tonal noises (humming, high-pitched tones, speech music, or recurring impulsive noises). This lowering of the standard does not apply to residential units established in conjunction with industrial or commercial caretaker dwellings. (See Glossary for definition of tonal noise).

The City may choose to apply the noise level performance standards at designated outdoor activity areas, in lieu of the property line.

The above standards do not apply to safety signals or warning devices.

For noise sources that occur on an infrequent basis and are considered to be safety equipment (such as flaring or pressure relief valves), a maximum noise level of 75 dB is acceptable, as measured from the receiver's property line. Noise levels which are projected to exceed this maximum are considered a significant environmental impact.

Where outdoor activity areas do not exist and/or are not expected to be affected, the City may choose to only apply the interior noise level criteria. For example, in the case of single family residences which do not have second story patios or outdoor activity areas, the City may choose to only apply an interior noise level standard at the second story interior spaces.

#### 4. COMMUNITY NOISE GOALS, POLICIES, AND PROGRAMS



**GOAL 4.23: Reduce or eliminate the effects of excessive noise.**

**POLICY 4.23.1:** Evaluate the compatibility of proposed projects with respect to existing and future transportation noise levels by utilizing Tables 4-3 and 4-4.

*Program 4.23.A:* Investigate and implement techniques to reduce traffic noise.

**POLICY 4.23.2:** Use noise dampening building standards, site design, landscaping, and setbacks instead of sound walls, wherever possible.

**POLICY 4.23.3:** Use available techniques such as building insulation, berms, building design and orientation, buffer yards, and staggered operating hours to minimize noise at the source.

**POLICY 4.23.4:** Control development of noise-sensitive land uses in areas exposed to existing or projected noise which exceed the levels specified in Tables 4-3 and 4-4 unless the project includes specific, effective mitigation measures to reduce interior and exterior noise levels to those specified in Tables 4-3 and 4-4.

*Program 4.23.B:* Investigate conditioning construction of live/work units with a requirement to record a “notice of special restrictions” which would acknowledge the noisy nature of existing adjacent industrial uses.

**POLICY 4.23.5:** Accommodate roadway improvement projects for build-out of the General Plan by recognizing that existing noise-sensitive uses may be exposed to increased noise levels from roadway repairs, increased traffic, and increased travel speeds. When it is not practical to reduce traffic noise levels to those in Table 4-4, the following criteria will be used as a test of significance for the environmental review of roadway improvement projects:

(a) Where existing noise levels are less than 60 dB  $L_{dn}$  at the outdoor activity area of a noise-sensitive use, a 5 dB  $L_{dn}$  increase in noise levels due to a roadway improvement project will be considered significant;

(b) Where existing noise levels range between 60 and 65 dB  $L_{dn}$  at the outdoor activity area of a noise-sensitive use, a 3 dB  $L_{dn}$  increase in noise levels due to a roadway improvement project will be considered significant; and

(c) Where existing noise levels are greater than 65 dB  $L_{dn}$  at the outdoor activity area of a noise-sensitive use, a 1.5 dB  $L_{dn}$

increase in noise levels due to a roadway improvement project will be considered significant.

*Program 4.23.C:* If needed, revise the City's noise ordinance and consider incorporating the noise level performance standards in Table 4-4.

**POLICY 4.23.6:** Attempt to reduce noise in areas already highly impacted by excessive noise.

*Program 4.23.D:* Identify sources of noise in the community (such as flight patterns, construction noise, traffic, railroads, industrial, and amplified sound). Develop measures to reduce excessive noise to acceptable levels.

# GLOSSARY

## ABBREVIATIONS

<b>ABAG</b>	Association of Bay Area Governments	<b>CEQA</b>	California Environmental Quality Act
<b>ADA</b>	Americans with Disabilities Act	<b>CIP</b>	Capital Improvements Program
<b>ADT</b>	Average daily trips made by vehicles or persons in a 24-hour period	<b>CLG</b>	Certified Local Government
<b>AFDC</b>	Aid for Families with Dependent Children (federal program)	<b>CMP</b>	Congestion Management Program
<b>BAAQMD</b>	Bay Area Air Quality Management District	<b>CNEL</b>	Community Noise Equivalent Level
<b>BACT</b>	Best available control technology	<b>COG</b>	Council of Governments
<b>BART</b>	Bay Area Rapid Transit	<b>dB</b>	Decibel
<b>BCDC</b>	Bay Area Conservation and Development Commission	<b>DEIR</b>	Draft Environmental Impact Report
<b>BIP</b>	Benicia Industrial Park	<b>DRC</b>	Design Review Commission
<b>BMR</b>	Below-market-rate dwelling unit	<b>DTSC</b>	Department of Toxic Substances Control
<b>BMP</b>	Best Management Practices	<b>EIR</b>	Environmental Impact Report (State)
<b>BUSD</b>	Benicia Unified School District	<b>EOC</b>	Emergency Operations Center
<b>CA</b>	California	<b>EOP</b>	Emergency Operations Plan
<b>CBD</b>	Central Business District	<b>EPCRA</b>	Emergency Planning and Community Right-to-Know Act
<b>CCR</b>	California Code of Regulations	<b>FAR</b>	Floor Area Ratio
<b>CDBG</b>	Community Development Block Grant	<b>FEMA</b>	Federal Emergency Management Agency

<b>GPOC</b>	General Plan Oversight Committee	<b>PG&amp;E</b>	Pacific Gas & Electric
<b>GPPS</b>	Goals, Policies, and Programs	<b>PD</b>	Planned Development
<b>HCD</b>	Housing and Community Development Department of the State of California.	<b>R &amp; D</b>	Research and Development
<b>HETF</b>	Housing Element Task Force	<b>RMPP</b>	Risk Management Prevention Program
<b>HUD</b>	U S Department of Housing and Urban Development	<b>RWQCB</b>	Regional Water Quality Control Board
<b>HHWP</b>	Hazardous Household Waste Program	<b>§</b>	Section
<b>IGPS</b>	Issues, Goals, and Policies	<b>SMARA</b>	Surface Mining and Reclamation Act
<b>I.O.O.F.</b>	International Order of Odd Fellows	<b>SOI</b>	Sphere of Influence
<b>IT</b>	International Technology Corporation	<b>TAC</b>	Toxic Air Contaminants
<b>LAFCO</b>	Local Agency Formation Commission	<b>TSD</b>	Treatment, Storage, and Disposal (facility)
<b>LOS</b>	Level of Service	<b>TSM</b>	Transportation Systems Management
<b>MTC</b>	Metropolitan Transportation Commission	<b>UBC</b>	Uniform Building Code
<b>OES</b>	Office of Emergency Services	<b>UFC</b>	Uniform Fire Code
<b>OSHA</b>	Occupational Health and Safety Administration	<b>UGB</b>	Urban Growth Boundary
<b>PCB</b>	Polychlorinated Biphenyl	<b>UPRR</b>	Union Pacific Railroad
		<b>URM</b>	Unreinforced Masonry Building
		<b>WWTP</b>	Waste Water Treatment Plant

## GLOSSARY

**Access/Egress** • The ability to enter a site from a roadway and exit a site onto a roadway by motorized vehicle.

**Acres, Gross** • The area of a lot or site including easements and right-of-way to be dedicated, but excluding existing public rights-of-way.

**Acres, Net** • The portion of a site that can actually be built upon. The following generally are not included in the net acreage of a site: public or private road rights-of-way, public open space, water bodies and flood ways.

**Adverse Impact** • A negative consequence for the physical, social, or economic environment resulting from an action or project.

**Affordability Requirements** • Provisions established by a public agency to require that a specific percentage of housing units in a project or development remain affordable to very low- and low- income households for a specified period.

**Affordable Housing** • Housing capable of being purchased or rented by a household with very low, low, or moderate income, based on a household's ability to make monthly payments necessary to obtain housing. Housing units for moderate income must sell or rent for a monthly cost not greater than 30 percent of area median income.

**Agency** • The governmental entity, department, office, or administrative unit responsible for carrying out regulations.

**Agricultural Preserve** • Land designated for agriculture or conservation. (See "Williamson Act.")

**Agriculture** • Use of land for the production of food and fiber, including the growing of crops and/or the grazing of animals on natural prime or improved pasture land.

**Air Pollution** • Concentrations of substances found in the atmosphere that exceed naturally occurring quantities and are undesirable or harmful in some way.

**Alley** • A narrow service way, either public or private, that provides a permanently reserved but secondary means of public access not intended for general traffic circulation. Alleys typically are located along rear property lines.

**Alquist-Priolo Act, Earthquake Fault Zone** • A state designated seismic hazard zone along traces of potentially and recently active faults, in which specialized geologic investigations must be prepared prior to approval of certain types of new development.

**Alluvium** • Sediment deposited by flowing water, as in a riverbed, flood plain, or delta.

**Ambient** • Surrounding on all sides; used to describe measurements of existing conditions with respect to traffic, noise, air and other environments.

**Analysis** • The examination of a subject, particularly its component parts and their interrelationships.

**Annex, *v.*** • To incorporate a land area into an existing district or municipality, with a resulting change in the boundaries of the annexing jurisdiction.

**Apartment** • (1) One or more rooms of a building used as a place to live, in a building containing at least one other

unit used for the same purpose. (2) A separate suite, not owner occupied, that includes kitchen facilities and is designed for and rented as the home, residence, or sleeping place of one or more persons living as a single housekeeping unit.

**Appropriate** • An act, condition, or state that is considered suitable.

**Archaeological** • Relating to the material remains of past human life, culture, or activities.

**Architectural Control; Architectural Review** • Regulations and procedures requiring the exterior design of structures to be suitable, harmonious, and in keeping with the general appearance, historic character, and/or style of surrounding areas. A process used to exercise control over the design of buildings and their settings. (See “Design Review.”)

**Area; Area Median Income** • As used in State of California housing law with respect to income eligibility limits established by the US Department of Housing and Urban Development (HUD), “area” means metropolitan area or non-metropolitan county. In non-metropolitan areas, the “area median income” is the higher of the county median family income or the statewide non-metropolitan median family income.

**Area of Interest** • That area having a direct physical and social influence on a city’s planning area but not appropriate for annexation.

**Arterial** • Streets that link residential, commercial, and industrial districts with the highway system. They serve primarily through-travel as opposed to providing direct access to adjacent land uses.

**Arterial (Major)** • A roadway which connects freeways to minor arterials and collector streets. Major arterials generally provide four to six lanes.

**Arterial (Minor)** • A roadway which connects major arterials to collectors and local streets. Minor arterials generally provide two to four travel lanes.

**Assisted Housing** • Generally multi-family rental housing, but sometimes single-family ownership units, whose construction, financing, sales prices, or rents have been subsidized by federal, state, or local housing programs including, but not limited to Federal Section 8 (new construction, substantial rehabilitation, and loan management set-asides), Federal Sections 213, 236, and 202, Federal Section 221(d)(3) (below-market interest rate program), Federal Section 101 (rent supplement assistance), CDBG, FmHA Section 515, multi-family mortgage revenue bond programs, local redevelopment and in lieu fee programs, and units developed pursuant to local inclusionary housing and density bonus programs. By January 1, 1992, all California Housing Elements are required to address the preservation or replacement of assisted housing that is eligible to change to market rate housing by 2002.

**Attainment** • Compliance with State and federal ambient air quality standards within an air basin.

**Base Flood** • In any given year, a 100-year flood that has a one percent likelihood of occurring, and is recognized as a standard for acceptable risk.

**Below-market-rate (BMR)** • (1) Any housing unit specifically priced to be sold or rented to low- or moderate-income households for an amount less

than the fair-market value of the unit. Both the State of California and the US Department of Housing and Urban Development set standards for determining which households qualify as “low income” or “moderate income.” (2) The financing of housing at less than prevailing interest rates.

**Best Management Practices** • A policy, program, practice, rule, regulation, or ordinance for which sufficient data are available to indicate that identified objectives can be met; that the practice is technically and economically reasonable and not environmentally or socially unacceptable; and that the practice is not otherwise unreasonable for most of the stated industry organizations to carry out.

**Bicycle Path (Class I facility)** • A paved route not on a street or roadway and expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle paths may parallel roads but typically are separated from them by landscaping.

**Bicycle Lane (Class II facility)** • A corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles.

**Bicycle Route (Class III facility)** • A facility shared with motorists and identified only by signs, a bicycle route has no pavement markings or lane stripes.

**Bikeways** • A term that encompasses bicycle lanes, bicycle paths, and bicycle routes.

**Book Fee** • A charge the City makes in association with the granting of building permits to provide money for City Library acquisition of books.

**Buffer Zone** • An area of land separating two distinct land uses that acts to soften or mitigate the effects of one land use on the other.

**Building** • Any structure used or intended for supporting or sheltering any use or occupancy.

**Building Height** • The vertical dimension measured from the finished grade at all points on the site to a warped plane an equal height above all points on the site.

**Buildout; Build-out** • Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations. (See “Carrying Capacity (3).”)

**Business Park** • (See “Industrial Park.”)

**Business Services** • A subcategory of commercial land use that permits establishments primarily engaged in rendering services to other business establishments on a fee or contract basis, such as advertising and mailing; building maintenance; personnel and employment services; management and consulting services; protective services; equipment rental and leasing; photo finishing; copying and printing; travel; office supply; and similar services.

**CALFED** • A joint State and federal program to develop a long-term solution to Bay-Delta water resources and endangered species issues.

**California Environmental Quality Act (CEQA)** • A State law requiring State and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an Environmental

Impact Report (EIR) must be prepared and certified as to its adequacy before taking action on the proposed project. General Plans require the preparation of a “program EIR.”

**California Housing Finance Agency (CHFA)** • A State agency, established by the Housing and Home Finance Act of 1975, which is authorized to sell revenue bonds and generate funds for the development, rehabilitation, and conservation of low-and moderate-income housing.

**Caltrans** • California Department of Transportation.

**Capital Improvements Program (CIP)** • A program, administered by a city or county government and reviewed by its planning commission, which schedules permanent improvements, usually for a minimum of five years in the future, to fit the projected fiscal capability of the local jurisdiction. The program generally is reviewed annually, for conformance to and consistency with the general plan.

**Carrying Capacity** • Used in determining the potential of an area to absorb development: (1) The level of land use, human activity, or development for a specific area that can be accommodated permanently without an irreversible change in the quality of air, water, land, or plant and animal habitats. (2) The upper limits of development beyond which the quality of human life, health, welfare, safety, or community character within an area will be impaired. (3) The maximum level of development allowable under current zoning. (See “Buildout.”)

**Census** • The official decennial enumeration of the population conducted by the federal government.

**Channelization** • The straightening and/or deepening of a watercourse for purposes of storm-runoff control or ease of navigation. Channelization often includes lining of stream banks with a retaining material such as concrete.

**Character** • Special physical characteristics of a structure or area that set it apart from its surroundings and contribute to its individuality.

**Circulation Element** • One of the seven State-mandated elements of a local general plan, it contains adopted goals, policies, and implementation programs for the planning and management of existing and proposed thoroughfares, transportation routes, and terminals, as well as local public utilities and facilities, all correlated with the land use element of the general plan.

**Circulation System** • A network of transit, automobile, bicycle and pedestrian rights-of-way that connect origins and destinations.

**City** • City with a capital “C” generally refers to the government or administration of the City of Benicia. City with a lower case “c” may mean any city, or may refer to the geographical area of a city (e.g., the city’s bikeway system.)

**Community Noise Equivalent Level (CNEL)** • The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

**Collector** • Streets which link arterials and local streets that are generally two lanes in width.

**Commercial** • A land use classification that permits facilities for the buying and selling of commodities and services.

**Commercial Strip** • Commercial development, usually one store deep, that fronts on a major street for a distance of one city block or more. Includes individual buildings on their own lots, with or without on-site parking, and small linear shopping centers with shallow on-site parking in front of the stores.

**Community Center** • A public facility in which educational, therapeutic and/or recreational programs are provided.

**Community Development Block Grant (CDBG)** • A grant program administered by the US Department of Housing and Urban Development (HUD) on a formula basis for entitlement communities, and by the State Department of Housing and Community Development (HCD) for non-entitled jurisdictions. This grant allots money to cities and counties for housing rehabilitation and community development, including public facilities and economic development.

**Community Noise Equivalent Level (CNEL)** • A 24-hour energy equivalent level derived from a variety of single-noise events, with weighting factors of 5 and 10 dBA applied to the evening (7 PM to 10 PM) and nighttime (10 PM to 7 AM) periods, respectively, to allow for the greater sensitivity to noise during these hours.

**Community Park** • Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks but smaller than regional parks. They serve people within a three mile radius.

**Community Service Area** • A geographic subarea of a city or county used for the planning and delivery of parks, recreation, and other human services based on an assessment of the service needs of the population in that subarea.

**Compatible** • Capable of existing together without conflict or ill effects.

**Composting** • The treatment of solid organic refuse through aerobic, biologic decomposition.

**Concurrency** • Installation and operation of facilities and services needed to meet the demands of new development simultaneous with the development.

**Condominium** • A structure of two or more units, the interior spaces of which are individually owned; the balance of the property (both land and building) is owned in common by the owners of the individual units. (See "Townhouse.")

**Congestion Management Plan (CMP)** • A mechanism employing growth management techniques, including traffic level of service requirements, standards for public transit, trip reduction programs involving transportation systems management and jobs/ housing balance strategies, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional traffic impacts of development. AB 1791, effective August 1, 1990, requires all cities, and counties that include urbanized areas, to adopt by December 1, 1991, and annually update a Congestion Management Plan.

**Conservation** • The management of natural resources to prevent waste, destruction, or degradation. (See "Conservation Element.")

**Conservation Element** • One of the seven State-mandated elements of a local general plan, it contains adopted goals, policies, and implementation programs for the conservation, development, and use of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.

**Consistency, Consistent With** • Free from significant variation or contradiction. The various diagrams, text, goals, policies, and programs in the general plan must be consistent with each other, not contradictory or preferential. The term “consistent with” is used interchangeably with “conformity with.” The courts have held that the phrase “consistent with” means “agreement with; harmonious with.” Webster defines “conformity with” as meaning harmony, agreement when used with “with.” The term “conformity” means in harmony therewith or agreeable to (§58 Ops. Cal. Atty. Gen. 21, 25 [1975]). California State law also requires that a general plan be internally consistent and also requires consistency between a general plan and implementation measures such as the zoning ordinance.

**County** • County with a capital “C” generally refers to the government or administration of a county. County with a lower case “c” may mean any county, or may refer to the geographical area of a county (e.g., the county’s road system.)

**Criterion** • A standard upon which a judgment or decision may be based. (See “Standards.”)

**Critical Facility** • Facilities housing or serving many people, that are necessary

in the event of an earthquake or flood, such as hospitals, fire, police, and emergency service facilities, utility “lifeline” facilities, such as water, electricity, and gas supply, sewage disposal, and communications and transportation facilities.

**Cul-de-sac** • A short street or alley with only a single means of ingress and egress at one end and with a large turnaround at its other end.

**Cumulative Impact** • As used in CEQA, the total impact resulting from the accumulated impacts of individual projects or programs over time.

**dB** • Decibel; a unit used to express the relative intensity of a sound as it is heard by the human ear.

**dBA** • The “A-weighted” scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually ten times more intense.

**Density, Residential** • The number of permanent residential dwelling units per acre of land. Densities specified in the General Plan are expressed in units per gross acre of land (excluding water bodies). (See “Acres, Gross.”)

**Density Bonus** • The allocation of development rights that allow a parcel to accommodate additional square footage or additional residential units beyond the maximum for which the parcel is zoned, usually in exchange for the provision or preservation of an amenity at the same site or at another location. Under California law, a housing development that provides 20 percent of its units for lower income households, or ten percent of its

units for very low-income households, or 50 percent of its units for seniors, is entitled to a density bonus. (See “Development Rights, Transfer of.”)

**Density, Control of** • A limitation on the occupancy of land. Density can be controlled through zoning in the following ways: use restrictions, minimum lot-size requirements, floor area ratios, land use-intensity ratios, setback and yard requirements, minimum house-size requirements, ratios comparing number and types of housing units to land area, limits on units per acre, and other means. Allowable density often serves as the major distinction between residential districts.

**Density Transfer** • A way of retaining open space by concentrating densities—usually in compact areas adjacent to existing urbanization and utilities—while leaving unchanged historic, sensitive, or hazardous areas. In some jurisdictions, for example, developers can buy development rights of properties targeted for public open space and transfer the additional density to the base number of units permitted in the zone in which they propose to develop.

**Design Review** • The comprehensive evaluation of a development and its impact on neighboring properties and the community as a whole, from the standpoint of site and landscape design, architecture, materials, colors, lighting, and signs, in accordance with a set of adopted criteria and standards. In Benicia’s Design Review system, projects are reviewed against certain standards and guidelines by the Design Review Commission and the Planning Department. (See “Architectural Control.”)

**Detention Dam/Basin/Pond** •

Dams may be classified according to the broad function they serve, such as storage, diversion, or detention. Detention dams are constructed to retard flood runoff and minimize the effect of sudden floods. Detention dams fall into two main types. In one type, the water is temporarily stored, and released through an outlet structure at a rate that will not exceed the carrying capacity of the channel downstream. Often, the basins are planted with grass and used for open space or recreation in periods of dry weather. The other type, most often called a Retention Pond, allows for water to be held as long as possible and may or may not allow for the controlled release of water. In some cases, the water is allowed to seep into the permeable banks or gravel strata in the foundation. This latter type is sometimes called a Water-Spreading Dam or Dike because its main purpose is to recharge the underground water supply. Detention dams are also constructed to trap sediment. These are often called Debris Dams.

**Developable Land** • Land that is suitable as a location for structures and that can be developed free of hazards to, and without disruption of, or significant impact on, natural resource areas.

**Developer** • An individual who or business that prepares raw land for the construction of buildings or causes to be built physical building space for use primarily by others, and in which the preparation of the land or the creation of the building space is in itself a business and is not incidental to another business or activity.

**Development** • The physical extension and/or construction of urban land uses. Development activities include: subdivision of land; construction or alteration of structures, roads, utilities, and other facilities; installation of septic systems; grading; deposit of refuse, debris, or fill materials; and clearing of natural vegetative cover (with the exception of agricultural activities). Routine repair and maintenance activities are exempted.

**Development Agreement** • A legislatively-approved contract between a jurisdiction and a person having legal or equitable interest in real property within the jurisdiction (California Government Code §5865 *et. seq.*) that “freezes” certain rules, regulations, and policies applicable to development of a property for a specified period of time, usually in exchange for certain concessions by the owner.

**Development Fee** • (See “Impact Fee.”)

**Development Rights** • The right to develop land by a land owner who maintains fee-simple ownership over the land or by a party other than the owner who has obtained the rights to develop. Such rights usually are expressed in terms of density allowed under existing zoning. For example, one development right may equal one unit of housing or may equal a specific number of square feet of gross floor area in one or more specified zone districts. (See “Development Rights, Transfer of [TDR].”)

**Development Rights, Transfer of (TDR)** • Also known as “Transfer of Development Credits,” a program that can relocate potential development from areas where proposed land use or environmental impacts are considered undesirable (the “donor” site) to another

(“receiver”) site chosen on the basis of its ability to accommodate additional units of development beyond that for which it was zoned, with minimal environmental, social, and aesthetic impacts. (See “Development Rights.”)

**Disability** • Physical or mental impairment that substantially limits one or more of the major life activities of an individual, or a record of such impairment, or being regarded as having such an impairment.

**Discourage, *v.*** • To advise or persuade to refrain from.

**Distribution Use** • (See “Warehousing Use.”)

**District** • (1) An area of a city or county that has a unique character identifiable as different from surrounding areas because of distinctive architecture, streets, geographic features, culture, landmarks, activities, or land uses. (2) A portion of the territory of a city or county within which uniform zoning regulations and requirements apply; a zone.

**Diversity** • Differences among otherwise similar elements that give them unique forms and qualities. E.g., housing diversity can be achieved by differences in unit size, tenure, or cost.

**Duplex** • A detached building under single ownership that is designed for occupation as the residence of two families living independently of each other.

**Dwelling Unit** • A room or group of rooms (including sleeping, eating, cooking, and sanitation facilities, but not more than one kitchen), that constitutes an independent housekeeping unit, occupied or intended for occupancy by one household on a long-term basis.

**Easement** • Usually the right to use property owned by another for specific purposes or to gain access to another property. For example, utility companies often have easements on the private property of individuals to be able to install and maintain utility facilities.

**Easement, Conservation** • A tool for acquiring open space with less than full-fee purchase, whereby a public agency buys only certain specific rights from the land owner. These may be positive rights (providing the public with the opportunity to hunt, fish, hike, or ride over the land) or they may be restrictive rights (limiting the uses to which the land owner may devote the land in the future.)

**Ecology** • The interrelationship of living things to one another and their environment; the study of such interrelationships.

**Economic Development Board (EDB)** • The agency charged with identifying, investigating, and promoting economic needs, opportunities, and interests in Benicia.

**Ecosystem** • An interacting system formed by a biotic community and its physical environment.

**Elderly Persons age 62 and older.** (See “Seniors.”)

**Emergency Shelter** • A facility that provides immediate and short-term housing and supplemental services for the homeless. Supplemental services may include food, counseling, and access to other social programs. (See “Homeless” and “Transitional Housing.”)

**Emission Standard** • The maximum amount of pollutant legally permitted to be discharged from a single source, either mobile or stationary.

**Encourage, *v.*** • To stimulate or foster a particular condition through direct or indirect action by the private sector or government agencies.

**Endangered Species** • A species of animal or plant is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes.

**Enhance, *v.*** • To improve existing conditions by increasing the quantity or quality of beneficial uses or features.

**Environment** • CEQA defines environment as “the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historic or aesthetic significance.”

**Environmental Impact Report (EIR)** • A report complying with the California Environmental Quality Act which assesses all the environmental characteristics of an area and determines what effects or impacts will result if the area is altered or disturbed by a proposed action. (See “California Environmental Quality Act.”)

**Environmental Impact Statement (EIS)** • Under the National Environmental Policy Act, a statement on the effect of development proposals and other major actions that significantly affect the environment.

**Erosion** • (1) The loosening and transportation of rock and soil debris by wind, rain, or running water. (2) The gradual wearing away of the upper layers of earth.

**Exaction** • A contribution or payment required as an authorized precondition for receiving a development permit;

usually refers to mandatory dedication (or fee in lieu of dedication) requirements found in many subdivision regulations.

**Fair Market Rent** • The rent, including utility allowances, determined by the United States Department of Housing and Urban Development for purposes of administering the Section 8 Existing Housing Program.

**Family** • (1) Two or more persons related by birth, marriage, or adoption [US Bureau of the Census]. (2) An individual or a group of persons living together who constitute a *bona fide* single-family housekeeping unit in a dwelling unit, not including a fraternity, sorority, club, or other group of persons occupying a hotel, lodging house or institution of any kind [California].

**Farmland** • Refers to eight classifications of land mapped by the US Department of Agriculture Soil Conservation Service. The five agricultural classifications defined below—except Grazing Land—do not include publicly owned lands for which there is an adopted policy preventing agricultural use.

**Grazing Land** • Land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. This classification does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, and heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

**Fault** • A fracture in the earth's crust forming a boundary between rock masses that have shifted.

**Feasible** • Capable of being accomplished in a successful manner within a reasonable time taking into account economic, environmental, social, and technological factors.

**Finding(s)** • The result(s) of an investigation and the basis upon which decisions are made. Findings are used by government agents and bodies to justify action taken by the entity.

**Fiscal Impact Analysis** • A projection of the direct public costs and revenues resulting from population or employment change to the local jurisdiction(s) in which the change is taking place. Enables local governments to evaluate relative fiscal merits of general plans, specific plans, or projects.

**Fiscal Impact Report (FIR)** • A report projecting the public costs and revenues that will result from a proposed program or development. (See "Fiscal Impact Analysis.")

**Flood, 100-Year** • The magnitude of a flood expected to occur on the average every 100 years, based on historical data. The 100-year flood has a 1/100, or one percent, chance of occurring in any given year.

**Flood Insurance Rate Map (FIRM)** • For each community, the official map on which the Federal Insurance Administration has delineated areas of special flood hazard and the risk premium zones applicable to that community.

**Flood Plain** • The relatively level land area on either side of the banks of a stream regularly subject to flooding. That part of the flood plain subject to a one percent chance of flooding in any given year is designated as an "area of special

flood hazard” by the Federal Insurance Administration.

**Floodway** • The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the “base flood” without cumulatively increasing the water surface elevation more than one foot. No development is allowed in floodways.

**Floor Area Ratio (FAR)** • The gross floor area permitted on a site divided by the total net area of the site, expressed in decimals to one or two places. For example, on a site with 10,000 net sq. ft. of land area, a FAR of 1.0 will allow a maximum of 10,000 gross sq. ft. of building floor area to be built. On the same site, a FAR of 1.5 would allow 15,000 sq. ft. of floor area; an FAR of 2.0 would allow 20,000 sq. ft.; and a FAR of 0.5 would allow only 5,000 sq. ft. Also commonly used in zoning, FARs typically are applied on a parcel-by-parcel basis.

**Freeway** • A high-speed, high-capacity, limited-access transportation facility intended to serve regional and sub-regional travel. At times they are also used for intra-city travel in large cities.

**Gateway** • A point along a roadway entering a city or county at which a motorist gains a sense of having left the environs and of having entered the city or county.

**General Plan** • A compendium of city or county policies regarding long-term development, in the form of maps and accompanying text. The General Plan is a legal document required of each local agency by the State of California Government Code §65300 et seq. and adopted by the City Council or Board of Supervisors. In California, the General Plan has 7

mandatory elements. (See Chapter 1 of this Plan which explains how elements are in the format of this General Plan.)

**Geologic Review** • The analysis of geologic hazards, including all potential seismic hazards, surface ruptures, liquefaction, landsliding, mudsliding, and the potential for erosion and sedimentation.

**Geological** • Pertaining to rock or solid matter.

**Goal** • A general, overall, and ultimate purpose, aim, or end toward which the City or County will direct effort.

**Grasslands** • Land reserved for pasturing or mowing, in which grasses are the predominant vegetation.

**Greenhouse Effect** • The warming of the Earth’s atmosphere due to accumulated carbon dioxide and other gases in the upper atmosphere. These gases absorb energy radiated from the Earth’s surface, “trapping” it in the same manner as glass in a greenhouse traps heat. Potential sea-level rise is a concern.

**Ground Failure** • Ground movement or rupture caused by strong shaking during an earthquake. Includes landslide, lateral spreading, liquefaction, and subsidence.

**Ground Shaking** • Ground movement resulting from the transmission of seismic waves during an earthquake.

**Groundwater** • Water under the earth’s surface, often confined to aquifers capable of supplying wells and springs.

**Growth Management** • (See Appendix A.)

**Guidelines** • General statements of policy direction around which specific details may be later established.

**Habitat** • The physical location or type of environment in which an organism or biological population lives or occurs.

**Handicapped** • A person determined to have a physical impairment or mental disorder expected to be of long or indefinite duration. Many such impairments or disorders are of such a nature that a person's ability to live independently can be improved by appropriate housing conditions.

**Hazardous Material** • Any substance that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. The term includes, but is not limited to, hazardous substances and hazardous wastes.

**High Occupancy Vehicle (HOV)** • Any vehicle other than a driver-only automobile (e.g., a vanpool, a bus, or two or more persons to a car).

**Highway** • High-speed, high-capacity, limited-access transportation facility serving regional and county-wide travel. Highways may cross at a different grade level.

**Hillsides** • Land that has an average percent of slope equal to or exceeding fifteen percent.

**Historic; Historical** • An historic building or site is one that is noteworthy for its significance in local, state, or national history or culture, its architecture or design, or its works of art, memorabilia, or artifacts.

**Historic Preservation** • The preservation of historically significant structures and neighborhoods until such time as, and in order to facilitate, restoration and

rehabilitation of the building(s) to a former condition.

**Homeless** • Persons and families who lack a fixed, regular, and adequate nighttime residence. Includes those staying in temporary or emergency shelters or who are accommodated with friends or others with the understanding that shelter is being provided as a last resort. California Housing Element law, §65583(c)(1) requires all cities and counties to address the housing needs of the homeless. (See "Emergency Shelter" and "Transitional Housing.")

**Hotel** • A facility in which guest rooms or suites are offered to the general public for lodging with or without meals and for compensation, and where no provision is made for cooking in any individual guest room or suite. (See "Motel.")

**Household** • All those persons-related or unrelated-who occupy a single housing unit. (See "Family.")

**Households, Number of** • The count of all year-round housing units occupied by one or more persons. The concept of *household* is important because the formation of new households generates the demand for housing. Each new household formed creates the need for one additional housing unit or requires that one existing housing unit be shared by two households. Thus, household formation can continue to take place even without an increase in population, thereby increasing the demand for housing.

**Housing, Inclusionary** • Regulations that increase housing choice by providing the opportunity to construct more diverse and economical housing to meet the needs of low- and moderate-income

families. Often such regulations require a minimum percentage of housing for low- and moderate-income households in new housing developments and in conversions of apartments to condominiums.

**Housing and Community Development Department of the State of California (HCD)**

• The State agency that has principal responsibility for assessing, planning for, and assisting communities to meet the needs of low- and moderate-income households.

**Housing Element** • One of the seven State-mandated elements of a local general plan, it assesses the existing and projected housing needs of all economic segments of the community, identifies potential sites adequate to provide the amount and kind of housing needed, and contains adopted goals, policies, and implementation programs for the preservation, improvement, and development of housing. Under State law, Housing Elements must be updated every five years.

**Housing and Urban Development, US Department of (HUD)**

• A cabinet-level department of the federal government that administers housing and community development programs.

**Housing Unit** • The place of permanent or customary abode of a person or family. A housing unit may be a single-family dwelling, a multi-family dwelling, a condominium, a modular home, a mobile home, a cooperative, or any other residential unit considered real property under State law. A housing unit has, at least, cooking facilities, a bathroom, and a place to sleep. It also is a dwelling that cannot be moved without substantial damage or unreasonable cost. (See “Dwelling Unit,” “Family,” and “Household.”)

**Identity** • A consistent quality that makes a city, place, area, or building unique and gives it a distinguishing character.

**Image** • The mental picture or impression of a city or place taken from memory and held in common by members of the community.

**Impact** • The effect of any direct man-made actions or indirect repercussions of man-made actions on existing physical, social, or economic conditions.

**Impact Fee** • A fee, also called a development fee, levied on the developer of a project by a city, county, or other public agency as compensation for otherwise-unmitigated impacts the project will produce. California Government Code §66000, *et seq.*, specifies that development fees shall not exceed the estimated reasonable cost of providing the service for which the fee is charged. To lawfully impose a development fee, the public agency must verify its method of calculation and document proper restrictions on use of the fund.

**Implementation** • Actions, procedures, programs, or techniques that carry out policies.

**Improvement** • The addition of one or more structures or utilities on a parcel of land.

**Incorporation** • Creation of a new city.

**Industrial** • The manufacture, production, and processing of consumer goods. Industrial is often divided into “heavy industrial” uses, such as construction yards, quarrying, and factories; and “light industrial” uses, such as research and development and less intensive warehousing and manufacturing.

**Industrial Park; Business Park** • A planned assemblage of buildings designed for “Workplace Use.”

**Infrastructure** • Public services and facilities, such as sewage-disposal systems, water-supply systems, other utility systems, and roads.

**Integrity** • As used in historic preservation, the degree to which authenticity of a property’s historic identity has been maintained, evidenced by the survival of substantial physical characteristics that existed during the property’s historic period.

**Intensity, Building** • For residential uses, the actual number or the allowable range of dwelling units per net or gross acre. For non-residential uses, the actual or the maximum permitted floor area ratios (FARS).

**Inter-agency** • Indicates cooperation between or among two or more discrete agencies in regard to a specific program.

**Intermittent Stream** • A stream that normally flows for at least thirty (30) days after the last major rain of the season and is dry a large part of the year.

**Issues** • Important unsettled community matters or problems that are identified in a community’s general plan and dealt with by the plan’s goals, objectives, policies, plan proposals, and implementation programs.

**Jobs/Housing Balance; Jobs/Housing Ratio** • The jobs/housing ratio divides the number of jobs in an area by the number of employed residents. A ratio of 1.0 indicates a balance. A ratio greater than 1.0 indicates a net in-commute; less than 1.0 indicates a net out-commute.

**Joint Powers Authority (JPA)** • A legal arrangement that enables two or more units of government to share authority in order to plan and carry out a specific program or set of programs that serves both units.

**Landmark** • (1) A building, site, object, structure, or significant tree, having historical, architectural, social, or cultural significance and marked for preservation by the local, state, or federal government. (2) A visually prominent or outstanding structure or natural feature that functions as a point of orientation or identification.

**Landscaping** • Planting—including trees, shrubs, and ground covers—suitably designed, selected, installed, and maintained as to enhance a site or roadway permanently.

**Landslide** • Downslope movement of soil and/or rock, which typically occurs during an earthquake or following heavy rainfall.

**Land Use** • The occupation or utilization of land or water area for any human activity or any purpose defined in the General Plan.

**Land Use Classification** • A system for classifying and designating the appropriate use of properties.

**Land Use Element** • A required element of the General Plan that uses text and maps to designate the future use or reuse of land within a given jurisdiction’s planning area. The land use element serves as a guide to the structuring of zoning and subdivision controls, urban renewal and capital improvements programs, and to official decisions regarding the distribution and intensity of development and the location of public facilities and open space. (See “Mandatory Element.”)

**Land Use Regulation** • A term encompassing the regulation of land in general and often used to mean those regulations incorporated in the General Plan, as distinct from zoning regulations (which are more specific).

**Lateral Spreading** • Lateral movement of soil, often as a result of liquefaction during an earthquake.

**$L_{dn}$**  • Day-Night Average Sound Level. The A-weighted average sound level for a given area (measured in decibels) during a 24-hour period with a 10 dB weighting applied to night-time sound levels. The  $L_{dn}$  is approximately numerically equal to the CNEL for most environmental settings.

**Lease** • A contractual agreement by which an owner of real property (the lessor) gives the right of possession to another (a lessee) for a specified period of time (term) and for a specified consideration (rent).

**$L_{eq}$**  • Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period.  $L_{eq}$  is typically computed over 1, 8, and 24-hour sample periods.  $L_{dn}$  represents the daily level of noise exposure averaged on an annual basis, while  $L_{eq}$  represents the average noise exposure for a shorter time period, typically one hour.

**$L_{max}$**  • The maximum sound level recorded during a noise event.

**$L_n$**  • The sound level exceeded “n” percent of the time during a sample interval.  $L_{10}$  equals the level exceeded 10 percent of the time ( $L_{90}$ ,  $L_{50}$ , etc.)

**Level of Service (LOS) Standard** • A standard used by government agencies to measure the quality or effectiveness of a

municipal service, such as police, fire, or library, or the performance of a facility, such as a street or highway.

**Level of Service (LOS) Traffic** • A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction, and delay.

LOS A • Indicates a relatively free flow of traffic, with little or no limitation on vehicle movement or speed.

LOS B • Describes a steady flow of traffic, with only slight delays in vehicle movement and speed. All queues clear in a single signal cycle.

LOS C • Denotes a reasonably steady, high-volume flow of traffic, with some limitations on movement and speed, and occasional backups on critical approaches.

LOS D • Designates the level where traffic nears an unstable flow. Intersections still function, but short queues develop and cars may have to wait through one cycle during short peaks.

LOS E • Represents traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak traffic hours, with frequent stopping, long-standing queues, and blocked intersections.

LOS F • Describes unsatisfactory stop-and-go traffic characterized by “traffic jams” and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes, and “upstream” intersections may be blocked by the long queues.

**Liquefaction** • The transformation of loose, wet soil from a solid to a liquid state, often as a result of ground shaking during an earthquake.

**Live/work Quarters** • Buildings or spaces within buildings that are used jointly for commercial and residential purposes where the residential use of the space is secondary or accessory to the primary use as a place of work.

**Local Agency Formation Commission (LAFCO)** • A five- or seven-member commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. Each county's LAFCO is empowered to approve, disapprove, or conditionally approve such proposals. The LAFCO members generally include two county supervisors, two city council members, and one member representing the general public. Some LAFCOs include two representatives of special districts.

**Local Streets** • (See "Streets, local.")

**Lot** • (See "Site.")

**Low-income Household** • A household with an annual income usually no greater than 80 percent of the area median family income adjusted by household size, as determined by a survey of incomes conducted by a city or a county, or in the absence of such a survey, based on the latest available eligibility limits established by the US Department of Housing and Urban Development (HUD) for the Section 8 housing program. (See "Area.")

**Low-income Housing Tax Credits** • Tax reductions provided by the federal and State governments for investors in housing for low-income households.

**Lower Arsenal** • Land south of I-780, generally between the freeway and the

Port of Benicia (water related industrial lands).

**Maintain, v** • To keep in an existing state. (See "Preserve, v.")

**Mandatory Element** • A component of the General Plan mandated by State law. California State law requires that a General Plan include elements dealing with seven subjects—circulation, conservation, housing, land use, noise, open space, and safety—and specifies to various degrees the information to be incorporated in each element. (See "Land Use Element.")

**Manufactured Housing** • Residential structures that are constructed entirely in the factory, and which since June 15, 1976, have been regulated by the federal Manufactured Home Construction and Safety Standards Act of 1974 under the administration of the US Department of Housing and Urban Development (HUD). (See "Mobile Home.")

**Marsh** • Any area designated as marsh or swamp on the largest scale United States Geologic Survey topographic map most recently published. A marsh usually is an area periodically or permanently covered with shallow water, either fresh or saline.

**Master Plan** • A plan prepared in accordance with Chapter 17.68 of the Benicia Zoning Ordinance to ensure orderly planning for the development of large, unsubdivided areas of the city, consistent with the General Plan.

**May** • That which is permissible.

**Mineral Resource** • Land on which known deposits of commercially viable mineral or aggregate deposits exist. This designation is applied to sites determined

by the State Division of Mines and Geology as being a resource of regional significance, and is intended to help maintain the quarrying operations and protect them from encroachment of incompatible land uses.

**Minimize**, *v.* • To reduce or lessen, but not necessarily to eliminate.

**Mining** • The act or process of extracting resources, such as coal, oil, or minerals, from the earth.

**Mitigate**, *v.* • To ameliorate, alleviate, or avoid to the extent reasonably feasible.

**Mixed-use** • Properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A “single site” may include contiguous properties.

**Mobile Home** • A structure, transportable in one or more sections, built on a permanent chassis and designed for use as a single-family dwelling unit and which (1) has a minimum of 400 square feet of living space; (2) has a minimum width in excess of 102 inches; (3) is connected to all available permanent utilities; and (4) is tied down (a) to a permanent foundation on a lot either owned or leased by the homeowner or (b) is set on piers, with wheels removed and skirted, in a mobile home park. (See “Manufactured Housing.”)

**Moderate-income Household** • A household with an annual income between the lower income eligibility limits and 120 percent of the area median family income adjusted by household size, usually as established by the US

Department of Housing and Urban Development (HUD) for the Section 8 housing program. (See “Area” and “Low-income Household.”)

**Motel** • (1) A hotel for motorists. (2) A facility in which guest rooms or suites are offered to the general public for lodging with or without meals and for compensation, and where guest parking is provided in proximity to guest rooms. Quite often, provision is made for cooking in individual guest rooms or suites. (See “Hotel.”)

**Multiple Family Building** • A detached building designed and used exclusively as a dwelling by three or more families occupying separate suites.

**Municipal Services** • Services traditionally provided by local government, including water and sewer, roads, parks, schools, and police and fire protection.

**Must** • That which is mandatory.

**National Environmental Policy Act (NEPA)** • An act passed in 1974 establishing federal legislation for national environmental policy, a council on environmental quality, and the requirements for environmental impact statements.

**National Flood Insurance**

**Program** • A federal program that authorizes the sale of federally subsidized flood insurance in communities where such flood insurance is not available privately.

**National Register of Historic**

**Places** • The official list, established by the National Historic Preservation Act, of sites, districts, buildings, structures, and objects significant in the nation’s history or whose artistic or architectural value is unique.

**Natural State** • The condition existing prior to development..

**Necessary** • Essential or required.

**Need** • A condition requiring supply or relief. The City or County may act upon findings of need within or on behalf of the community.

**Neighborhood** • A planning area commonly identified as such in a community's planning documents, and by the individuals residing and working within the neighborhood. Documentation may include a map prepared for planning purposes, on which the names and boundaries of the neighborhood are shown.

**Neighborhood Park** • City- or county-owned land intended to serve the recreation needs of people living or working within one-half mile radius of the park.

**Neighborhood Unit** • According to one widely-accepted concept of planning, the neighborhood unit should be the basic building block of the city. It is based on the elementary school, with other community facilities located at its center and arterial streets at its perimeter. The distance from the school to the perimeter should be a comfortable walking distance for a school-age child; there would be no through traffic uses. Limited industrial or commercial would occur on the perimeter where arterials intersect. This was the model for American suburban development after World War II.

**Neotraditional Development** • An approach to land use planning and urban design that promotes the building of neighborhoods with a mix of uses and housing types, architectural variety, a

central public gathering place, interconnecting streets and alleys, and edges defined by greenbelts or boulevards. The basic goal is integration of the activities of potential residents with work, shopping, recreation, and transit all within walking distance.

**Noise** • Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. Noise, simply, is "unwanted sound."

**Noise Attenuation** • Reduction of the level of a noise source using a substance, material, or surface, such as earth berms and/or solid concrete walls.

**Noise Contour** • A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 L<sub>dn</sub> contour (measured in dBA) require noise attenuation in residential development.

**Noise Element** • One of the seven State-mandated elements of a local general plan, it assesses noise levels of highways and freeways, local arterials, railroads, airports, local industrial plants, and other ground stationary sources, and adopts goals, policies, and implementation programs to reduce the community's exposure to noise.

**Noise Sensitive Land Use** • Hospitals, nursing homes, schools, churches, residential uses, libraries, theaters, auditoriums, and transient lodging.

**Non-conforming Use** • A use that was valid when brought into existence, but by subsequent regulation becomes no longer conforming. "Non-conforming use" is a generic term and includes (1) non-conforming structures (by virtue of size,

type of construction, location on land, or proximity to other structures), (2) non-conforming use of a conforming building, (3) non-conforming use of a non-conforming building, and (4) non-conforming use of land. Thus, any use lawfully existing on any piece of property that is inconsistent with a new or amended General Plan, and that in turn is a violation of a zoning ordinance amendment subsequently adopted in conformance with the General Plan, will be a non-conforming use.

**Non-urban Land Use** • Land use that is not urban. (See “Urban” and “Urban Land Use.”)

**Northern Area** • Everything north of the Urban Growth Boundary which is within the Benicia Planning Area.

**Notice (of Hearing)** • A legal document announcing the opportunity for the public to present their views to an official representative or board of a public agency concerning an official action pending before the agency.

**Objective** • A specific statement of desired future condition toward which the City or County will expend effort in the context of striving to achieve a broader goal. An objective should be achievable and, where possible, should be measurable and time-specific. The State Government Code (§65302) requires that general plans spell out the “objectives,” principles, standards, and proposals of the general plan. “The addition of 100 units of affordable housing by 1995” is an example of an objective.

**Office Use** • The use of land by general business offices, medical and professional offices, administrative or headquarters offices for large wholesaling or manufacturing operations, and research and development.

**Open Space Element** • One of the seven State-mandated elements of a local general plan, it contains an inventory of privately and publicly owned open-space lands, and adopted goals, policies, and implementation programs for the preservation, protection, and management of open space lands.

**Open Space Land** • Any parcel or area of land or water that is essentially unimproved and devoted to an open space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety. Refer to Policy 2.1.5 and page 209 – Urban Growth Boundary for further discussion of uses.

**Ordinance** • A law or regulation set forth and adopted by a governmental authority, usually a city or county.

**Outdoor Activity Area** • An area primarily utilized for the congregation of people; examples include patios of residences, pool areas, central recreation areas, and outdoor instructional areas of schools.

**Outdoor Recreation Area** • A privately or publicly owned or operated use providing facilities for outdoor recreation activities.

**Para-transit** • Refers to transportation services that operate vehicles, such as buses, jitneys, taxis, and vans for senior citizens, and/or mobility-impaired.

**Parcel** • A lot, or contiguous group of lots, in single ownership or under single control, usually considered a unit for purposes of development.

**Park Land, Parkland** • Land that is publicly owned or controlled for the purpose of providing parks, recreation, or open space for public use.

**Parks** • Open space lands whose primary purpose is recreation. (See “Open Space Land,” “Community Park,” and “Neighborhood Park.”)

**Peak Hour/Peak Period** • For any given roadway, a daily period during which traffic volume is highest, usually occurring in the morning and evening commute periods. Where “F” Levels of Service are encountered, the “peak hour” may stretch into a “peak period” of several hours’ duration.

**Performance Standards** • Regulations that permit uses based on a particular set of standards of operation rather than on particular type of use. Performance standards provide specific criteria limiting noise, air pollution, emissions, odors, vibration, dust, dirt, glare, heat, fire hazards, wastes, traffic impacts, and visual impact of a use.

**Personal Services** • Services of a personal convenience nature, as opposed to products that are sold to individual consumers, as contrasted with companies. Personal services include barber and beauty shops, shoe and luggage repair, fortune tellers, photographers, laundry and cleaning services and pick-up stations, copying, repair and fitting of clothes, and similar services.

**Planned Community** • A large-scale development whose essential features are a definable boundary; a consistent, but not necessarily uniform, character; overall control during the development process by a single development entity; private ownership of recreation amenities; and enforcement of covenants, conditions, and restrictions by a master community association.

**Planned Development (PD)** • A description of a proposed unified development, consisting at a minimum of a map and adopted ordinance setting forth the regulations governing, and the location and phasing of all proposed uses and improvements to be included in the development.

**Planning Area** • The area directly addressed by the general plan. A city’s planning area typically encompasses the city limits and potentially annexable land within its sphere of influence.

**Planning Commission** • A seven member body created by the City of Benicia in compliance with California law (§65100). This law requires the assignment of the planning functions of a city or county to a planning department, planning commission, hearing officers, and/or the legislative body itself, as deemed appropriate by the legislative body.

**Policy** • A specific statement of principle or of guiding actions that implies clear commitment but is not mandatory. A general direction that a governmental agency sets to follow, in order to meet its goals and objectives before undertaking an action program. (See “Program.”)

**Pollutant** • Any introduced gas, liquid, or solid that makes a resource unfit for its normal or usual purpose.

**Pollution** • The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.

**Pollution, Non-Point** • Sources for pollution that are less definable and usually cover broad areas of land, such as agricultural land with fertilizers that are carried from the land by runoff, or automobiles.

**Poverty Level** • As used by the US Census, families and unrelated individuals are classified as being above or below the poverty level based on a poverty index that provides a range of income cutoffs or “poverty thresholds” varying by size of family, number of children, and age of householder. The income cutoffs are updated each year to reflect the change in the Consumer Price Index.

**Preservation** • As used in historic preservation, the process of sustaining the form and extent of a structure essentially as it exists. Preservation aims at halting further deterioration and providing structural stability but does not contemplate significant rebuilding. (See “Historic Preservation.”)

**Preserve, *n.*** • An area in which beneficial uses in their present condition are protected; for example, a nature preserve or an agricultural preserve. (See “Agricultural Preserve” and “Protect.”)

**Preserve, *v.*** • To keep safe from destruction or decay; to maintain or keep intact. (See “Maintain.”)

**Principle** • An assumption, fundamental rule, or doctrine that will guide general plan policies, proposals, standards, and implementation measures. The State Government Code (§65302) requires that general plans spell out the objectives, “principles,” standards, and proposals of the general plan. “Adjacent land uses should be compatible with one another” is an example of a principle.

**Private Road/Private Street** • Privately owned (and usually privately maintained) motor vehicle access that is not dedicated as a public street. Typically the owner posts a sign indicating that the street is private property and limits traffic

in some fashion. For density calculation purposes, some jurisdictions exclude private roads when establishing the total acreage of the site; however, aisles within and driveways serving private parking lots are not considered private roads.

**Professional Offices** • A use providing professional or consulting services in the fields of law, medicine, architecture, design, engineering, accounting, and similar professions, but not including financial institutions or real estate or insurance offices.

**Program** • An action, activity, or strategy carried out in response to adopted policy to achieve a specific goal or objective. Policies and programs establish the “who,” “how” and “when” for carrying out the “what” and “where” of goals and objectives.

**Protect, *v.*** • To maintain and preserve beneficial uses in their present condition as nearly as possible. (See “Enhance.”)

#### **Public and Quasi-public**

**Facilities** • Institutional, academic, governmental and community service uses, either owned publicly or operated by non-profit organizations, including private hospitals and cemeteries.

**Public Services** • (See “Municipal Services.”)

**Pure Tone** • Any sound which can be judged as audible as a single pitch or a set of single pitches by the Noise Control Officer. For the purposes of this ordinance, a pure tone shall exist if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hz and above and by 8 dB for

center frequencies between 160 and 400 Hz and by 15 dB for center frequencies less than or equal to 125 Hz.

**Ranchette** • A single dwelling unit occupied by a non-farming household on a parcel of 2.5 to 20 acres that has been subdivided from agricultural land.

**Rare or Endangered Species** • A species of animal or plant listed in: §670.2 or §670.5, Title 14, California Administrative Code; or Title 50, Code of Federal Regulations, §17.11 or §17.2, pursuant to the Federal Endangered Species Act designating species as rare, threatened, or endangered.

**Reclamation** • The reuse of resources, usually those present in solid wastes or sewage.

**Recognize, *v.*** • To officially (or by official action) identify or perceive a given situation.

**Recreation, Passive** • Type of recreation or activity that does not require the use of organized play areas.

**Recycle, *v.*** • The process of extraction and reuse of materials from waste products.

**Redevelop, *v.*** • To demolish existing buildings; or to increase the overall floor area existing on a property; or both; irrespective of whether a change occurs in land use.

**Regional** • Pertaining to activities or economies at a scale greater than that of a single jurisdiction, and affecting a broad geographic area.

**Regional Park** • A 250–1,000 acre park that focuses on activities and natural features not included in most other types of parks and often based on a specific scenic or recreational opportunity.

**Regulation** • A rule or order prescribed for managing government.

**Rehabilitation** • The repair, preservation, and/or improvement of substandard housing.

**Remodeling** • As used in historic preservation, making over or rebuilding all or part of an historic structure in a way that does not necessarily preserve its historical, architectural, and cultural features and character.

**Research and Development (R&D) Use** • A use engaged in study, testing, design, analysis, and experimental development of products, processes, or services.

**Residential** • Land designated in the City or County General Plan and zoning ordinance for buildings consisting only of dwelling units. May be improved, vacant, or unimproved. (See “Dwelling Unit.”)

**Residential, Multiple Family** • Usually three or more dwelling units on a single site, which may be in the same or separate buildings.

**Residential, Single-Family** • A single dwelling unit on a building site.

**Restore, *v.*** • To renew, rebuild, or reconstruct to a former state.

**Restrict, *v.*** • To check, bound, or decrease the range, scope, or incidence of a particular condition.

**Retention Basin/Retention Pond** • (See “Detention Basin/Detention Pond.”)

**Retrofit, *v.*** • To add materials and/or devices to an existing building or system to improve its operation, safety, or efficiency. Buildings have been retrofitted to use solar energy and to strengthen their ability to withstand earthquakes, for example.

**Rezoning** • An amendment to the map and/or text of a zoning ordinance to effect a change in the nature, density, or intensity of uses allowed in a zoning district and/or on a designated parcel or land area.

**Rideshare** • A travel mode other than driving alone, such as buses, rail transit, carpools, and vanpools.

**Ridgeline** • A line connecting the highest points along a ridge and separating drainage basins or small-scale drainage systems from one another.

**Right-of-way** • A strip of land occupied or intended to be occupied by certain transportation and public use facilities, such as roadways, railroads, and utility lines.

**Riparian Lands** • Riparian lands are comprised of the vegetative and wildlife areas adjacent to perennial and intermittent streams. Riparian areas are delineated by the existence of plant species normally found near freshwater.

**Risk** • The danger or degree of hazard or potential loss.

**Runoff** • That portion of rain or snow that does not percolate into the ground and is discharged into streams instead.

**Safety Element** • One of the seven State-mandated elements of a local general plan, it contains adopted goals, policies, and implementation programs for the protection of the community from any unreasonable risks associated with seismic and geologic hazards, flooding, and wildland and urban fires. Many safety elements also incorporate a review of police needs, objectives, facilities, and services.

**Scenic Highway Corridor** • The area outside a highway right-of-way that is generally visible to persons traveling on the highway.

**Scenic Highway/Scenic Route** • A highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and man-made scenic resources and access or direct views to areas or scenes of exceptional beauty or historic or cultural interest. The aesthetic values of scenic routes often are protected and enhanced by regulations governing the development of property or the placement of outdoor advertising. Until the mid-1980s, general plans in California were required to include a Scenic Highways element.

**Second Unit** • A Self-contained living unit, either attached to or detached from, and in addition to, the primary residential unit on a single lot. Sometimes called “Granny Flat”.

#### **Section 8 Rental Assistance**

**Program** • A federal (HUD) rent-subsidy program that is one of the main sources of federal housing assistance for low-income households. The program operates by providing “housing assistance payments” to owners, developers, and public housing agencies to make up the difference between the “Fair Market Rent” of a unit (set by HUD) and the household’s contribution toward the rent, which is calculated at 30 percent of the household’s adjusted gross monthly income (GMI). “Section 8” includes programs for new construction, existing housing, and substantial or moderate housing rehabilitation.

**Seismic** • Caused by or subject to earthquakes or earth vibrations.

**SEL (or SENEL)** • Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure level for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

**Seniors** • Persons age 62 and older. (See “Elderly.”)

**Sensitive Receptors** • Uses that are greatly affected by noise. These include schools, nursing homes, and childcare facilities.

**Setback** • The horizontal distance between the property line and any structure.

**Shall** • That which is obligatory; an unequivocal direction.

**Shopping Center** • A group of commercial establishments, planned, developed, owned, or managed as a unit, with common off-street parking provided on the site.

**Should** • Signifies a directive to be honored if at all possible; a less rigid directive than “shall,” to be honored in the absence of compelling or contravening considerations.

**Sign** • Any representation (written or pictorial) used to convey information, or to identify, announce, or otherwise direct attention to a business, profession, commodity, service, or entertainment, and placed on, suspended from, or in any way attached to, any structure, vehicle, or

feature of the natural or manmade landscape.

**Significance** • As used in historic preservation, a term ascribed to buildings, sites, objects, or districts that possess exceptional value or quality for illustrating or interpreting the cultural heritage of the community when evaluated in relation to other properties and property types within a specific historic theme, period, and geographical setting. A principal test of significance for historic property is “integrity.”

**Single-family Dwelling, Attached** • A dwelling unit occupied or intended for occupancy by only one household that is structurally connected with at least one other such dwelling unit. (See “Townhouse.”)

**Single-family Dwelling, Detached** • A dwelling unit occupied or intended for occupancy by only one household that is structurally independent from any other such dwelling unit or structure intended for residential or other use. (See “Family.”)

**Site** • A parcel of land used or intended for one use or a group of uses and having access to a public or an approved private street. A lot. (See “Lot.”)

**Slope** • Land gradient described as the vertical rise divided by the horizontal run, and expressed in percent.

**Soil** • The unconsolidated material on the immediate surface of the earth created by natural forces that serves as natural medium for growing land plants.

**Solid Waste** • Any unwanted or discarded material that is not a liquid or gas. Includes organic wastes, paper products, metals, glass, plastics, cloth, brick, rock, soil, leather, rubber, yard wastes, and wood, but does not include sewage and

hazardous materials. Organic wastes and paper products comprise about 75 percent of typical urban solid waste.

**Specific Plan** • A legal tool authorized by Article 8 of the Government Code (§65450 *et seq.*) for the systematic implementation of the general plan for a defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development, standards for the conservation, development, and use of natural resources, and a program of implementation measures, including financing measures.

**Sphere of Influence (soi)** • The probable physical boundaries and service area of a local agency, as determined by the Local Agency Formation Commission (LAFCO) of the County.

**Standards** • (1) A rule or measure establishing a level of quality or quantity that must be complied with or satisfied. The State Government Code (§65302) requires that general plans spell out the objectives, principles, "standards," and proposals of the general plan. Examples of standards might include the number of acres of park land per 1,000 population that the community will attempt to acquire and improve, or the "traffic Level of Service" (LOS) that the plan hopes to attain. (2) Requirements in a zoning ordinance that govern building and development as distinguished from use restrictions—for example, site-design regulations such as lot area, height limit, frontage, landscaping, and floor area ratio.

**Storm Runoff** • Surplus surface water generated by rainfall that does not seep into the earth but flows overland to flowing or stagnant bodies of water.

**Streets, Local** • Streets that primarily provide access to properties. They also have a secondary role as locations for utilities, locations for easements, open space for light and air, and firebreaks between buildings. Through-traffic from one part of the community to another is not intended to be carried on local streets.

**Streets, Major** • The transportation network that includes a hierarchy of freeways, arterials, and collectors to service through traffic.

**Structure** • Anything constructed or erected that requires location on the ground (excluding swimming pools, fences, and walls used as fences, access drives, and walks).

**Subdivision** • The division of a tract of land into defined lots, either improved or unimproved, which can be separately conveyed by sale or lease, and which can be altered or developed. "Subdivision" includes a condominium project as defined in §1350 of the California Civil Code and a community apartment project as defined in §11004 of the Business and Professions Code.

**Subsidize** • To assist by payment of a sum of money or by the granting of terms or favors that reduce the need for monetary expenditures. Housing subsidies may take the forms of mortgage interest deductions or tax credits from federal and/or state income taxes, sale or lease at less than market value of land to be used for the construction of housing, payments to supplement a minimum affordable rent, and the like.

**Substandard Housing/Units** • Residential dwellings that, because of their physical condition, do not provide safe and sanitary housing.

**Substantial** • Considerable in importance, value, degree, or amount.

**Sustainability** • Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

**Sustainable Development** • Development that maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. (*Source: Minnesota State Legislature.*)

**Telecommuting** • An arrangement in which a worker is at home or in a location other than the primary place of work, and communicates with the workplace and conducts work via wireless or telephone lines, using modems, fax machines, or other electronic devices in conjunction with computers.

**Topography** • Configuration of a surface, including its relief and the position of natural and man-made features.

**Tourism** • The business of providing services for persons traveling for pleasure, tourism contributes to the vitality of the community by providing revenue to local business. Tourism can be measured through changes in the transient occupancy tax, or restaurant sales.

**Townhouse; Townhome** • A one-family dwelling in a row of at least three such units in which each unit has its own front and rear access to the outside, no unit is located over another unit, and each unit is separated from any other unit by one or more common and fire-

resistant walls. Townhouses usually have separate utilities; however, in some condominium situations, common areas are serviced by utilities purchased by a homeowners association on behalf of all townhouse members of the association. (See “Condominium.”)

**Transit** • The conveyance of persons or goods from one place to another by means of a local, public transportation system.

**Transit, Public** • A system of regularly-scheduled buses and/or trains available to the public on a fee-per-ride basis. Also called “Mass Transit.”

**Transitional Housing** • Shelter provided to the homeless for an extended period, often as long as 18 months, and generally integrated with other social services and counseling programs to assist in the transition to self-sufficiency through the acquisition of a stable income and permanent housing. (See “Homeless” and “Emergency Shelter.”)

**Transportation Demand Management (TDM)** • A strategy for reducing demand on the road system by reducing the number of vehicles using the roadways and/or increasing the number of persons per vehicle. TDM attempts to reduce the number of persons who drive alone on the roadway during the commute period and to increase the number in carpools, vanpools, buses and trains, walking, and biking. TDM can be an element of Transportation Systems Management (TSM). (See “Transportation Systems Management.”)

**Transportation Noise Sources** • Noise from traffic on public roadways, railroad line operations, and aircraft in flight.

**(Non-) Transportation Noise**

**Sources** • Noise from industrial operations, outdoor recreation facilities, HVAC units, loading docks, *etc.*

**Transportation Systems Management**

**(TSM)** • A comprehensive strategy developed to address the problems caused by additional development, increasing trips, and a shortfall in transportation capacity. Transportation Systems Management focuses on more efficiently utilizing existing highway and transit systems rather than expanding them. TSM measures are characterized by their low cost and quick implementation time frame, such as computerized traffic signals, metered freeway ramps, and one-way streets.

**Trees, Street** • Trees strategically planted—usually in parkway strips, medians, or along streets—to enhance the visual quality of a street.

**Trip** • A one-way journey that proceeds from an origin to a destination via a single mode of transportation; the smallest unit of movement considered in transportation studies. Each trip has one “production end,” (or origin—often from home, but not always), and one “attraction end,” (destination).

**Truck Route** • A path of circulation required for all vehicles exceeding set weight or axle limits, a truck route follows major arterials through commercial or industrial areas and avoids sensitive areas.

**Underutilized Parcel/Land** • A parcel or piece of land that is not developed to its full zoning potential.

**Undevelopable** • Specific areas where topographic, geologic, and/or surficial soil conditions indicate a significant danger to

future occupants and a liability to the City or County are designated as “undevelopable” by the City or County.

**Undue** • Improper, or more than necessary.

**Uniform Building Code (UBC)** • A national, standard building code that sets forth minimum standards for construction.

**Urban** • Of, relating to, characteristic of, or constituting a city. Urban areas are generally characterized by moderate and higher density residential development (*i.e.*, three or more dwelling units per acre), commercial development, and industrial development, and the availability of public services required for that development, specifically central water and sewer, an extensive road network, public transit, and other such services (*e.g.*, safety and emergency response). Development not providing such services may be “non-urban” or “rural.” (See “Urban Land Use.”)

**Urban Design** • The attempt to give form, in terms of both beauty and function, to selected urban areas or to whole cities. Urban design is concerned with the location, mass, and design of various urban components and combines elements of urban planning, architecture, and landscape architecture.

**Urban Growth Boundary** • A line shown on the General Plan Land Use Diagram in order to separate the City’s urban area from its surrounding greenbelt of open lands. The UGB is intended to discourage urban sprawl, promote efficiency in providing government services in the City and region, preserve open space and agricultural lands, preserve scenic views, protect land

for watershed management, protect natural resources, and provide for passive recreation. No urban development is allowed beyond the UGB. “Urban development” shall mean development requiring one or more basic municipal services including, but not limited to, water service, sewer, improved storm drain facilities, fire hydrants and other physical public facilities and services.

**Urban Land Use** • Residential, commercial, or industrial land use in areas where urban services are available.

**Urban Open Space** • The absence of buildings or development, usually in well-defined volumes, within an urban environment.

**Urban Service Area** • (1) An area in which urban services will be provided and outside of which such services will not be extended. (2) Developed, undeveloped, or agricultural land, either incorporated or unincorporated, within the sphere of influence of a city, which is served or will be served during the first five years of an adopted capital improvement program by urban facilities, utilities, and services. The boundary around an urban service area is called the “urban service area boundary” and is to be developed in cooperation with a city and adopted by a Local Agency Formation Commission (LAFCO). (*California Government Code §56080.*)

**Urban Services** • Utilities (such as water, gas, electricity, and sewer) and public services (such as police, fire, schools, parks, and recreation) provided to an urbanized or urbanizing area.

**Urban Sprawl** • Haphazard growth or outward extension of a city resulting

from uncontrolled or poorly managed development.

**Use** • The purpose for which a lot or structure is or may be leased, occupied, maintained, arranged, designed, intended, constructed, erected, moved, altered, and/or enlarged in accordance with the City’s Zoning Ordinance and General Plan land use designations.

**Use Permit** • The discretionary and conditional review of an activity or function or operation on a site or in a building or facility.

**Utility Corridors** • Rights-of-way or easements for utility lines on either publicly or privately owned property. (See “Right-of-way” or “Easement.”)

**Vacant** • Lands or buildings that are not actively used for any purpose.

**Variance** • A departure from any provision of the zoning requirements for a specific parcel, except use, without changing the zoning ordinance or the underlying zoning of the parcel. A variance usually is granted only upon demonstration of hardship based on the peculiarity of the property in relation to other properties in the same zone district.

**Very Low-income Household** • A household with an annual income usually no greater than 50 percent of the area median family income adjusted by household size, as determined by a survey of incomes conducted by a city or a county, or in the absence of such a survey, based on the latest available eligibility limits established by the US Department of Housing and Urban Development (HUD) for the Section 8 housing program. (See “Area.”)

**View Corridor** • The line of sight-identified as to height, width, and distance-of an observer looking toward an object of significance to the community (e.g., ridgeline, river, historic building, etc.); the route that directs the viewers attention.

**Viewshed** • The area within view from a defined observation point.

**Volume-to-Capacity Ratio** • A measure of the operating capacity of a roadway or intersection, in terms of the number of vehicles passing through, divided by the number of vehicles that theoretically could pass through when the roadway or intersection is operating at its designed capacity. Abbreviated as " $V/C$ ." At a  $V/C$  ratio of 1.0, the roadway or intersection is operating at capacity. If the ratio is less than 1.0, the traffic facility has additional capacity. Although ratios slightly greater than 1.0 are possible, it is more likely that the peak hour will elongate into a "peak period." (See "Peak Hour" and "Level of Service.")

**Warehousing Use** • A use engaged in storage, wholesale, and distribution of manufactured products, supplies, and equipment, excluding bulk storage of materials that are flammable or explosive or that present hazards or conditions commonly recognized as offensive.

**Watershed** • The total area above a given point on a watercourse that contributes water to its flow; the entire region drained by a waterway or watercourse that drains into a lake, or reservoir.

**Wetlands** • Transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Under a "unified" methodology

now used by all federal agencies, wetlands are defined as "those areas meeting certain criteria for hydrology, vegetation, and soils."

**Wildlife** • Animals or plants existing in their natural habitat.

**Will** • That which is expected or may be expected. Expresses intent or purpose. (See "Shall" and "Should.")

**Williamson Act** • Known formally as the *California Land Conservation Act of 1965*, it was designed as an incentive to retain prime agricultural land and open space in agricultural use, thereby slowing its conversion to urban and suburban development. The program entails a ten-year contract between the City or County and an owner of land whereby the land is taxed on the basis of its agricultural use rather than its market value. The land becomes subject to certain enforceable restrictions, and certain conditions need to be met prior to approval of an agreement.

**Woodlands** • Lands covered with woods or trees.

**Zoning** • The division of a city or county by legislative regulations into areas, or zones, that specify allowable uses for real property and size restrictions for buildings within these areas; a program that implements policies of the General Plan.

**Zoning District** • A designated section of a city or county for which prescribed land use requirements and building and development standards are uniform.

**Zoning Ordinance** • Title 17 of the Benicia Municipal Code delineates zoning districts and establishes regulations governing the use, placement, and size of land and buildings.

# PHOTO CREDITS

**Joe Jacobson**

Pages 3, 13, 17, 21, 22, 25, 28, 33, 34, 37, 110, 141

**Kitty Griffin**

Pages 25, 26, 27, 28, 29, 31, 48, 49, 67, 74, 77, 79, 85, 88, 90, 100, 102, 106, 119, 151

**Marilyn Bardet**

Pages 46, 101, 108

**Larry Cannon**

Pages 87, 97, 97

**Ann Van Winkle**

Pages 109, 122, 124

**Ed Swenson**

Page 135

**Peter Bray**

cover