

**NORTHWEST ROSEVILLE SPECIFIC PLAN
DRAFT ENVIRONMENTAL IMPACT REPORT
TECHNICAL APPENDIX**

SCH# 88051623

**Prepared for
City of Roseville
August 2, 1988**

**Prepared by
R. C. Fuller Associates
5908 Fair Oaks Boulevard
Carmichael, California 95608**



**NORTHWEST ROSEVILLE SPECIFIC PLAN
DRAFT ENVIRONMENTAL IMPACT REPORT
TECHNICAL APPENDIX**

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**NORTHWEST ROSEVILLE SPECIFIC PLAN
PROJECT RELATED CORRESPONDENCE**



OFFICE OF PLANNING AND RESEARCH

400 TENTH STREET
ACRAMENTO, CA 95814

DATE: May 23, 1988

TO: Reviewing Agencies

RE: The City of Roseville Planning Department's NOP for
Northwest Roseville Specific Plan
SCH# 88051623

Attached for your comment is the City of Roseville Planning Department's Notice of Preparation of a draft Environmental Impact Report (EIR) for the Northwest Roseville Specific Plan.

Responsible agencies must transmit their concerns and comments on the scope and content of the EIR, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Daniel E. Dameron
City of Roseville
316 East Vernon Street
Roseville, CA 95678

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call John Keene at 916/445-0613.

Sincerely,

A handwritten signature in black ink, appearing to read "David C. Nunenkamp", with a large, sweeping flourish extending to the right.

David C. Nunenkamp
Chief
Office of Permit Assistance

Attachments

cc: Daniel E. Dameron

REC
11/23/88

PLANNING DEPT

88051623

'S': Sent by lead 'X': Sent by SGI

Regional Water Quality Control Board

Fish and Game - Regional Offices

Department of Transportation District Contacts

- Sgt. Jim Meddell
California Highway Patrol
Long Range Planning Section
Planning and Analysis Division
P.O. Box 898
Sacramento, CA 95804
916/445-1981
- William A. Johnson
Native American Heritage Comm.
915 Capitol Mall, Room 288
Sacramento, CA 95814
916/322-7191
- Hans Kreutzberg
Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001
916/322-9621
- Mike Doyle
Dept. of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001
916/324-6421
- George Henth
Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
415/557-1375 (8-597)
- William P. Vaughn, Jr.
Public Works Board
1025 P Street, 4th Floor
Sacramento, CA 95814
916/445-5332
- Neil Schwartz
Reclamation Board
1416 Ninth Street, Room 204-8
Sacramento, CA 95814
916/445-2458
- Maria Milliken
S.F. Bay Conservation & Dev't. Com.
30 Van Ness Avenue, Room 2011
San Francisco, CA 94102
415/557-3686
- Mike Leeson
Calif. Waste Management Board
1020 Ninth Street, Room 300
Sacramento, CA 95814
916/322-2674
- Ted Pukushina
State Lands Commission
1807 - 13th Street
Sacramento, CA 95814
916/322-7813
- Madell Gayou
Dept. of Water Resources
1416 Ninth Street, Room 215-4
Sacramento, CA 95814
916/445-7416
- Reed Holgerman
State Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612
415/464-1015
- A. Meyer, Regional Manager
Department of Fish and Game
601 Locust
Redding, CA 96001
916/225-2300
- Jim Messersmith, Regional Manager
Department of Fish and Game
1701 Madus Road, Suite A
Rancho Cordova, CA 95670
916/355-0922
- B. Hunter, Regional Manager
Department of Fish and Game
P.O. Box 47
Yountville, CA 94599
707/944-2011
- G. Nokes, Regional Manager
Department of Fish and Game
1234 East Shaw Avenue
Fremont, CA 93710
209/222-3761
- Fred A. Worthley, Jr., Reg. Manager
Department of Fish and Game
245 West Broadway, Suite 350
Long Beach, CA 90802
213/590-5113
- Rolf E. Mall
Marine Resources Region
245 West Broadway, Suite 350
Long Beach, CA 90802
213/590-5155
- State Water Resources Control Board
Joan Jurawitch
State Water Resources Control Board
Division of Clean Water Grants
P.O. Box 100
Sacramento, CA 95801
916/322-3413
- Ed Anton
State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95801
916/445-9552
- Dave Berlinger
State Water Resources Control Board
Delta Unit
P.O. Box 2000
Sacramento, CA 95810
916/322-9870
- Mike Palmenstein
State Water Resources Control Board
Division of Water Rights
901 P Street
Sacramento, CA 95814
916/324-5716
- OTHER: _____
- NORTH COAST REGION (1)
1440 Thermerville Rd.
Santa Rosa, CA 95401
707/576-2220
- SAN FRANCISCO BAY REGION (2)
1111 Jackson Street, Room 6000
Oakland, CA 94607
415/464-1255
- CENTRAL COAST REGION (3)
1102-A Laurel Lane
San Luis Obispo, CA 93401
805/549-3147
- LOS ANGELES REGION (4)
107 South Broadway, Room 4027
Los Angeles, CA 90012
213/620-4460
- CENTRAL VALLEY REGION (5)
4443 Bantler Road
Sacramento, CA 9-877-1098
916/361-5600
- Fresno Branch Office
3374 East Shields Avenue, Room 18
Fresno, CA 93726
209/445-5116
- Redding Branch Office
100 East Cypress Avenue
Redding, CA 96002
916/225-2045
- LAURENCE REGION (6)
2092 Lake Tahoe Boulevard
P.O. Box 9428
South Lake Tahoe, CA 95731
916/544-3481
- Victorville Branch Office
15371 Bonanza Road
Victorville, CA 92392-2494
619/245-6583
- COLORADO RIVER BASIN REGION (7)
73-271 Highway 111, Suite 21
Palm Desert, CA 92260
619/346-7491
- SANTA ANA REGION (8)
6809 Indiana Avenue, Suite 200
Riverside, CA 92506
714/782-4130
- SAN DIEGO REGION (9)
9771 Clearmont Mesa Blvd., Suite 2
San Diego, CA 92124-1331
619/265-5114

APPROVED: Placer County

Pacific Gas and Electric Company

1050 High Street
Auburn, CA 95603



July 18, 1988

Ms. Maura Schwartz
R. C. Fuller Associates
5908 Fair Oaks Blvd.
Carmichael, CA 95608

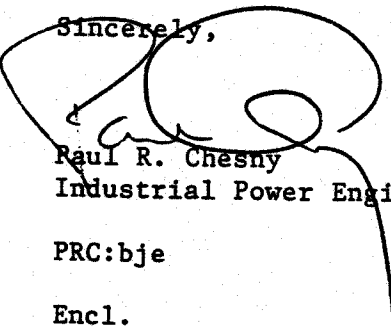
Dear Ms. Schwartz:

This will respond to your request for updated information regarding the ability of Pacific Gas and Electric Company to provide natural gas service to the proposed Northwest specific plan area. The types and areas of land usage stated, within the initial study document, suggest that approximately 470 MCF/hr of additional gas demand could be created by this development.

Load growth of this magnitude can be easily handled by our normal distribution main extensions, distribution main reinforcements and possible additional regulator stations. Transmission main capabilities are adequate to serve this additional load.

I have enclosed a copy of your map depicting the Northwest specific plan area with an approximation of our existing distribution mains, indicated in blue, and transmission main, indicated in yellow, overlaid. Should you require any additional information, please give me a call at (916) 889-3852.

Sincerely,



Raul R. Chesny
Industrial Power Engineer

PRC:bje

Encl.



SMUD

SACRAMENTO MUNICIPAL UTILITY DISTRICT □ P. O. Box 15830, Sacramento CA 95852-1830, (916) 452-3211
AN ELECTRIC SYSTEM SERVING THE HEART OF CALIFORNIA

024 PPO 88- 425

June 14, 1988

DANIEL E DAMERON ASSOCIATE PLANNER
ROSEVILLE PLANNING DEPARTMENT
316 VERNON STREET
ROSEVILLE CA 95678

RECEIVED

PLANNING DEPARTMENT

**NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT ON THE
NORTHWEST ROSEVILLE SPECIFIC PLAN**

The Sacramento Municipal Utility District has reviewed the above document. We have the following comments.

The Sacramento Municipal Utility District occupies a transmission line right-of-way within the boundaries of the project. This is a building restricted area and certain uses are not permitted or compatible with the safety, operation, maintenance, and construction of our transmission line facilities. The proposed uses within SMUD's transmission line easement appear to be acceptable. However, before we issue our final consent agreement, SMUD's Land Department should be contacted prior to the issuance of the final building permits. SMUD must review final development plans prior to construction.

Generally, SMUD will consent to a joint use of our right-of-way subject to the following terms and conditions. (Note, that these conditions listed below are general and may vary depending upon final project layout and design.)

1. All applicable safety and other rules or regulations of any governmental agency having jurisdiction governing construction in the vicinity of electric power lines must be strictly observed.
2. All cut, fill, and grading within SMUD's easement must be conducted in a manner so that minimum ground clearances are maintained in accordance with California Public Utility Commission General Order No. 95. Any violations shall be corrected at owners expense.
3. Vehicular access must be provided to towers at all times.
4. All metal fixtures placed within the easement area must be properly grounded. A grounding plan shall be submitted to SMUD Property Manager for review and approval.
5. Trees, landscaping, light standards, and equipment shall not exceed 15 feet in height within the easement area.

6. No structures or buildings are permitted within the easement area including swimming pools, spas, wells, and man-made reservoirs, lakes or similar bodies of water.

This conditions are to be considered part of the mitigating measures for the project.


As a mitigating measure, SMUD should review and approve any building activities within the SMUD Right-of-way before tentative maps are prepared.

As a responsible agency for this project SMUD should be kept informed of all decisions or changes in schedules that pertain to this project and any other project that is anticipated so that we may remain integrated in the planning efforts that are ongoing in the area. This includes, but is not limited to, the creation of special zoning areas, landscaped corridors, or any other planning efforts which may affect the SMUD electrical facilities.

SMUD would like to know of as early as possible any decisions or changes in schedules that pertain to this project.

Please assure that the information we have provided in this response is immediately conveyed to the project proponents and the County Planners. We want the project proponents to be informed of SMUD's requirements in regard to this project well in advance of the preparation of any tentative maps.

If you have any questions, please contact me at (916) 732-6223.


PAUL OLMSTEAD
ENVIRONMENTAL SPECIALIST

DOUGLAS M. FRALEIGH, Director
TERRY TICE, Deputy Director
W.C. WANDERER, JR., Deputy Director



COUNTY OF SACRAMENTO

DEPARTMENT OF PUBLIC WORKS

COUNTY ADMINISTRATION BUILDING • ROOM 304 • 827 SEVENTH STREET
SACRAMENTO, CALIFORNIA 95814

TELEPHONE: (916) 440-6581

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JUN 23 1988

PLANNING

June 14, 1988

Roseville Planning Department
316 Vernon Street
Roseville, CA 95678

Attention: Daniel E. Dameron
Associate Planner

Gentlemen:

SUBJECT: NOP OF A DRAFT EIR ON THE NORTHWEST ROSEVILLE
SPECIFIC PLAN AND THE NORTH CENTRAL ROSEVILLE PLAN

In response to your Notice of Preparation of a Draft Environmental Impact Report on the subject projects, we offer the following comments:

~~Our Flood Control Engineer has indicated that the proposed specific plans will result in changes to both the quantity and quality of runoff and will impact downstream areas.~~

The draft EIR should discuss the need for specific improvements required to mitigate additional runoff from these proposed specific plans. We believe the reports should include potential improvements and/or maintenance costs to existing drainage facilities (within Sacramento County) which may be impacted by the proposed developments, especially in the case of the North Central specific plan, where additional runoff will be drained to Antelope Creek and Dry Creek.

It is likely that retention ponds will be proposed to reduce peak runoff and thus reduce the impacts on downstream reaches; if this is the case, ponds must be carefully studied and their operations properly coordinated.

Our Water Quality Division and Highways and Bridges Division have no comments on the subject reports.

If you require further information, please contact Carol Mosier of my staff at (916) 440-6575.

Very truly yours,

Douglas M. Fraleigh, Director
Department of Public Works

DMF:CM:leh

cc: T. Tice
W. Wanderer
W. Harada
R. Yano

J. McCormack
P. Gaffney
T. Zlotkowski
C. Mosier

RECEIVED

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CITY OF ROSEVILLE
RISK MANAGEMENT DIVISION

MEMORANDUM

DATE: June 8, 1988
TO: Dan Dameron, Planning
FROM: Robyn Kain-Spedden, Administrative Analyst II *RS*
SUBJECT: Northwest Roseville Specific Plan Draft E.I.R.

This is to provide comments and recommendations to the Northwest Specific Plan Draft E.I.R. as requested in your May 18, 1988 memorandum.

I. GOLF COURSE

This plan provides for a 174 acre golf course which will be interrelated with adjacent residential units. Based upon experience with a similar arrangement at the Diamond Oaks Golf Course, I recommend the following:

- A. The CC & R's specifically state that the City is not liable for stray golfballs which may enter residential property and cause either personal injury or property damage.
- B. The property setback from the course fringe (i.e. fairways) mandate no property improvements immediately adjacent to the course. This will avoid damage to landscaping and pools from overspray of pesticides and fertilizers used to maintain the fairways.

II. PARKS

It appears from the map that the 64.7 acre City-wide park has a significant portion of its area within an electric transmission line easement area (near Cook-Riolo Road and Pleasant Grove). As I have stipulated before at several Planning Commission meetings and to the City Council, active park land use must be disallowed in easement areas. I would appreciate more detail on the area proposed to be in the easement area in order to make a more informed evaluation.

One other smaller park is proposed to be placed adjacent to the easement area. A barrier or fencing of some type with warning signs should be installed to warn the public of potential danger. This would also apply to the City-wide park. Transmission towers which may be accessible via park areas must be fenced off with warning signs.

Memorandum - Northwest Roseville Specific Plan Draft E.I.R.
June 8, 1988
Page 2

III. FLOODING

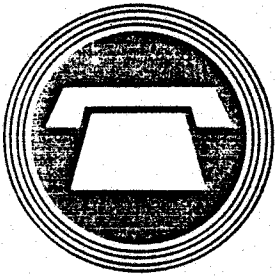
The draft E.I.R. indicates the soil has a high water runoff potential. Water drainage improvements must be designed to accomodate this factor with consideration of the potential population and water usage in this area.

IV. ELECTRICAL EASEMENTS

It needs to be clarified who owns this strip of land and who is responsible for maintaining the right of way. Also, the land use for this area needs to be defined.

Thank you for the opportunity to comment on this draft E.I.R. I would be most happy to discuss any concerns that may arise from my comments.

RKS:pd



ROSEVILLE TELEPHONE COMPANY
P.O. BOX 969 • ROSEVILLE, CALIFORNIA 95661
TELEPHONE 786-6141 • AREA CODE 916

ROBERT L. DOYLE
PRESIDENT, MANAGER
THOMAS E. DOYLE
SECRETARY

May 26, 1988

Mr. Dan Dameron
City of Roseville, Planning Dept.
316 Vernon Street
Roseville, CA 95678

Dear Mr. Dameron:

Re: Northwest Roseville Specific Plan (Draft E.I.R.)

Telephone/Communication Facilities

Roseville Telephone Company will provide service to this geographical area in accordance with our filed tariffs. Telephone facilities will be constructed in conjunction with development. There could be line extension charges associated with this proposal, depending upon actual developmental phasing. Public utility easements will be required to serve this specific plan. Additional right-of-way may also be required for installation of telephone equipment. The above requirements will be identified as development occurs.

Impacts

No unusual problems are anticipated in providing telephone service to this geographical area.

If I can be of any further assistance to you regarding this plan, please feel free to contact me at (916)786-1209.

Sincerely,

Terry L. Saliger
Senior Engineer

TLS:kcm

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PLANNING DEPT.



Roseville
CITY SCHOOL DISTRICT

1000 DARLING WAY ■ P.O. BOX 1059 ■ ROSEVILLE, CALIFORNIA 95661-1059 ■ 916 / 786-5090
SUPERINTENDENT/JOHN C. REINKING

BOARD OF EDUCATION / Norman Franklin ■ Jim Gardner ■ Guy R. Gibson ■ Carol S. Langley ■ George F. Richards, III

September 16, 1986

Mr. Daniel Dameron
City of Roseville
316 Vernon Street
Roseville, CA 95678

**SUBJECT: NOTICE OF PREPARATION NORTHWEST
ROSEVILLE SPECIFIC PLAN**

Dear Mr. Dameron:

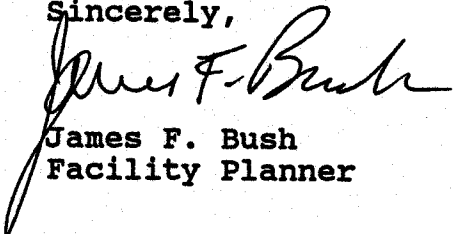
Thank you for the opportunity to respond to this Notice of Preparation request.

The Roseville City Elementary School District serves only a small portion of the area located at Junction and Highway 65. (See attached map)

However, the District is preparing a boundary line adjustment with the Dry Creek School District to create a new boundary line at Foothills. If this is the case, it would be necessary for the District to request a K-6 school site north of Junction.

Thank you again for the opportunity to respond to this item. I will keep you informed about the proposed boundary line change.

Sincerely,


James F. Bush
Facility Planner

JFB:pjd



Roseville Joint Union High School District

DISTRICT OFFICE

120 MAIN STREET, ROSEVILLE, CALIFORNIA 95678 • (916) 786-2018

KENNETH G. SAHL, District Superintendent

BOARD OF TRUSTEES
NORMA ANDERSON
JIM GARDNER
CAROL HAMEL
ROBERT McCARTHY
MICHAEL J. TOTARO, MD

September 16, 1986

Mr. Daniel E. Dameron
Assistant Planner
316 Vernon Street
Roseville, CA 95678

Dear Mr. Dameron:

Thank you for the opportunity to respond to the Notice of Preparation for the Northwest Roseville Specific Plan. The following major points should be discussed in detail:

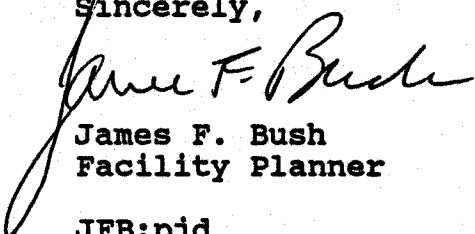
- The project site will generate approximately 1,658 9-12 students over the life of the project as stated. See the attached chart which shows the proposed land use categories and the current yield rates applied to them. The percentages used in the yield rates are taken from the Draft Schools Component, Page 19, Table #11.
- The subject area is within the Roseville High School attendance boundary. The 20 year projection for student enrollment is provided in the attached Exhibit A. (Approved in the district's Master Plan, July, 1986) It should be noted that this Exhibit provides for a Rocklin Unified School District pullout of students starting in 1989/90 and continue to 1993/94. Other information contained in this Exhibit is as follows:
 - Alternative D--Impacts upon Roseville High School and the District if Rocklin is unsuccessful in building a new high school.
 - Projected school facility implementation timeline with Rocklin pullout and without pullout.
 - Facility Financing Plan costs and implementation times. Please note that a high school site is projected for purchase in 1993/94 and a high school under construction by 1995.
- Based upon the Roseville Joint Union High School District's Master Plan adopted July 8, 1986, the District requests a 45 acre high school site be designated within the Northwest Roseville Specific Plan area. Access to this property will have to occur on or

before 1993/94 in order for the District to start construction in 1995. The District requests dedication of this land as its first option for acquiring it.

- Financing School Facilities--Exhibit B has been prepared as a discussion to the issue of financing school facilities. The Draft Schools Component discusses financing school facilities. In addition, there are many new State legislative actions that are pending, which should be noted, that will change the school facility funding picture. A CASH Register (Coalition for Adequate School Housing) is also provided.
- Alternative options available to the school district by not providing school facilities when needed. These are (Exhibit C):
 - Double Sessions
 - Extended Day
 - Bussing
 - Year Round School

Thank you again for the opportunity to respond to this Notice of Preparation. If you need any other information, please contact me.

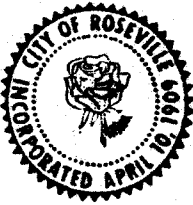
Sincerely,



James F. Bush
Facility Planner

JFB:pjd
Attachments

cc: Ken Sahl, District Superintendent



CITY OF ROSEVILLE

316 VERNON STREET • ROSEVILLE, CALIFORNIA 95678 • PHONE (916) 781-0200

December 17, 1986

TO: D. E. DAMERON
PLANNING DEPARTMENT

FROM: KENNETH A. WEISEL
ELECTRIC UTILITY DIRECTOR

RE: DRAFT EIR'S - NORTHCENTRAL AND
NORTHWEST ROSEVILLE SPECIFIC PLANS

The information provided below is in response to questions and concerns raised by Paul R. Chesny of Pacific Gas & Electric Company regarding the subject Draft EIR's.

The growth expected consistent with the land use and development proposed in the Northcentral Roseville Specific Plan is approximately 40 MW. Based on the Northwest Roseville Specific Plan, growth of about 30 MW may be expected. For Northeast Roseville, about 50 MW of growth is indicated.

Although most new sources of electric capacity may be expected to be more expensive than Roseville's allocation of federal power, with careful planning the differences need not be substantial. Long-range power supply cost projections will be carefully developed over the next year.

I infer from Mr. Chesny's comments an assertion that Roseville is already receiving its full federal allocation. Such an assertion would be incorrect. Although Roseville may soon be using its full share of federal allocation in the summer months, growth will permit fuller utilization of our allocation in the non-summer months and will increase the City's entitlement to low cost energy from federal hydroelectric projects. Aside from better utilization of the resources available to the City from our contract with the federal government, the City has participated in the construction of several electric generating facilities and secured contracts for additional power resources to meet the growth in electric demand anticipated for the City of Roseville. Also, the City has made a significant commitment to load management and conservation programs for both new and existing customers to encourage efficient use of electricity to reduce the need for additional resources and to help lower the cost of electricity for all Roseville residents.

D. E. Dameron
Planning Department
December 17, 1986
Page 2

Present policy is that costs of increased generation (power supply) are shared in rates by all rate payers, while costs to install added distribution facilities are paid for by specific users prior to development. One could consider alternatives, such as additional pre-development payments to mitigate increased generation costs; however, no such alternatives are under active consideration.

We believe the above information responds fully to Mr. Chesny's letter.

KAW:er

cc: R. Languell, R. C. Fuller Associates ✓
K. Smith, Jones & Stokes Associates



CITY OF ROSEVILLE

316 VERNON STREET • ROSEVILLE, CALIFORNIA 95678 • PHONE (916) 781-0200

June 15, 1987

Mr. Bob Langvell
R.C. Fuller & Associates
5908 Fair Oaks Boulevard
Carmichael, CA 95608

RE: DOMESTIC WATER SERVICES FOR THE NORTHWEST ROSEVILLE
SPECIFIC PLAN

Mr. Langvell,

Please replace the information regarding water usage in my letter of December 16, 1986 with the information herein. This is the data we recently used in a computer study of our system.

<u>Land Use</u>	<u>Flow GPD/Unit</u>
RD3 - RD5	2,030
RD6 - RD11	1,510
RD12 - RD15	660
RD16 - RD20	400

<u>Land Use</u>	<u>Flow GPD/Acre</u>
BP Commercial	4,200
LI Light Industrial	4,200
IND Industrial	6,125
K-6 I.S. Elementary & Inter. Schools	8,150
HS High School	9,600
FS Fire Station	4,200
CP Community Park	8,150
NP Neighborhood Park	8,150
Public	8,150

Thank you very much.

Respectfully,

LARRY T. BUCKLE
Assistant Civil Engineer
Utility Engineering

PROPOSED WATER/SEWER DEMAND

FOR THE NORTHWEST ROSEVILLE SPECIFIC PLAN

<u>Land Use</u>	<u>Pop.</u>	<u>Acres</u>	<u>Water Gal/day</u>	<u>Sewer Units</u>	<u>Sewer Gal/day</u>
R-4	302	29	235,480	116	46,000
R-5	8,078	621	6,303,150	3,107	1,243,000
R-7	2,803	154	1,627,780	1,078	431,000
R-8	1,238	59	712,720	476	190,000
R-9	2,106	90	1,223,100	810	324,000
R-10	1,596	61	921,100	614	246,000
R-15	1,810	46	455,400	696	278,000
R-20	2,101	40	320,000	808	323,000
RC	1,430	292	1,481,900	550	220,000
GC	1,238	279	2,273,850	476	190,000
Commercial		50	210,000	181	72,000
Li		15	63,000	55	22,000
UR		105	0	0	0
SS		90	733,500	391	156,000
NP		29	236,350	0	0
CP		55	448,250	0	0
T		9.1	30,000	65	26,000
FP		138	0	0	0

17,275,580 Gal/day

3,767,000
Gal/day



CITY OF ROSEVILLE

316 VERNON STREET • ROSEVILLE, CALIFORNIA 95678 • PHONE (916) 783-9151

December 16, 1986

Mr. Bob Langvell
R.C. Fuller & Associates
5908 Fair Oaks Boulevard
Carmichael, CA 95608

RE: DOMESTIC WATER SERVICES FOR THE NORTHWEST ROSEVILLE SPECIFIC PLAN

Mr. Langvell,

For the design of a distribution system, a peak demand of 400 gallons per day per capita is assumed by the City of Roseville. Yet special consideration shall be given to areas zoned for multiple housing, schools, commercial, or industrial development. Open space, parks, and school ground water consumption will be controlled by Assembly Bill No. 797 at .875"/week.

Over the past summer it was determined that an excess of 75% of the City's domestic flow is for irrigation. Using this as a guide to determine water demand for the high density residential developments one could derive the equation:

$$(400 \text{ gal/capita/day}) (2.6 \text{ capita/unit}) (8 \div x \text{ units/acre})$$

Where x is >8 and <30

Business professional and commercial land use has been found to have a relatively small water demand \approx 5,200 gal/acre.

Light industrial land use can use in excess of 10,000 gal/acre.

Other land uses will be assumed to be limited irrigation.

High school water demand based on irrigation will be multiplied by 1.5, and elementary schools by 1.25.

Assembly Bill No. 797 specifies low water usage that may be hard to enforce. To stay consecutive, one would assume 1.75 x .875"/week would be a more practical demand.

$$1.75 \times .875"/\text{week} = 1.53"/\text{week}$$
$$= 6,000 \text{ gal/acre/day}$$

RE: SEWER SERVICES FOR THE NORTHWEST ROSEVILLE SPECIFIC PLAN

When determining wastewater flows for the City of Roseville, one would use the City ordinances as a base for determining sewer units with one unit representing 400 gal/day.

One single living unit will produce in the opinion of the City of Roseville 400 gal/day regardless of the size of the home or apartment. On all other types of land use, wastewater production is based on the Ft² of the building.

Some examples are:

Retail stores } 133 gal/day/1000 Ft²
Offices }

Medical/dental } 266 gal/day/1000 Ft²
Schools (15% of Land) }

Markets } 800 gal/day/1000 Ft²
Restaurants }

Flows will be determined by a building occupying a maximum of 25% of the land use.

One will assume that all open spaces, parks, etc., will produce no wastewater.

A breakdown of flows from this area along with a list of impacts are attached.

PROPOSED WATER/SEWER DEMAND

FOR THE NORTHWEST ROSEVILLE SPECIFIC PLAN

<u>Land Use</u>	<u>Pop.</u>	<u>Acres</u>	<u>Water Gal/day</u>	<u>Sewer Units</u>	<u>Sewer Gal/day</u>
R-4	302	29	120,000	116	46,000
R-5	8,078	621	3,231,000	3,107	1,243,000
R-7	2,803	154	1,121,000	1,078	431,000
R-8	1,238	59	495,000	476	190,000
R-9	2,106	90	749,000	810	324,000
R-10	1,596	61	511,000	614	246,000
R-15	1,810	46	386,000	696	278,000
R-20	2,101	40	336,000	808	323,000
RC	1,430	292	1,566,000	550	220,000
GC	1,238	279	1,445,000	476	190,000
C		50	260,000	181	72,000
Li		15	150,000	55	22,000
UR		105	357,000	0	0
SS		90	413,000 (15%)	391	156,000
NP		29	99,000	0	0
CP		55	187,000	0	0
T		9.1	30,000	65	26,000
FP		138	470,000	0	0

11,926,000 Gal/day

3,767,000
Gal/day

RE: SOLID WASTE DISPOSAL SERVICES FOR THE NORTHWEST
ROSEVILLE SPECIFIC PLAN AREA

All areas of Roseville will be serviced with a mixture of automated residential collection and commercial bin collection. Residential automated service can be figured up to R-9, any service above R-9 along with commercial properties will be served by commercial rear loaders and front loaders.

R-10 to R-20 generate less garbage because of no yard clippings and other maintenance rubbish. It has been determined that four of these units will produce 1 yd³ of garbage per week. The R-4 to R-5 are assumed to produce 90 gal. or .44 yd³ of refuse per week.

One automated refuse truck can collect 750 - 90 Gallon containers in one 8 hour day. In order to service this large of an area, new trucks would have to be purchased at \$90,000 a copy. The 90 Gallon cans figure at \$75 each. Therefore, one can see there would be considerable cash outlay to start up service in the area.

The City of Roseville uses the Western Placer Regional Landfill for disposal of garbage collected inside the incorporated area. The lifetime of the landfill is projected at 40 years.

Rates will have to be sufficient in the future to generate enough revenues to finance the growth of the Solid Waste Collection which includes the purchase of new equipment, and replacing old equipment when needed.

RE: IMPACTS ON ROSEVILLE WATER/SEWER SERVICE CAUSED BY THE
NORTHWEST ROSEVILLE SPECIFIC PLAN

The Water System: This large water demand would require the construction of a new large diameter water line from the water treatment plant. With the water treatment plant currently running at capacity in the summer months an expansion of the water treatment plant would also be required.

With the increased flow from the plant the construction of water storage reservoirs would be imperative to maintain pressure in peak flow periods.

There may also be the need for a new or expanded raw water line from Folsom Lake to the water treatment plant.

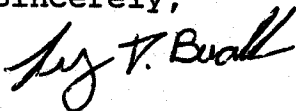
Sewer System: Parts of the Northwest Roseville Specific Plan also include the North Roseville/Rocklin Sewer Assessment District, therefore, a portion of main sewer lines are provided.

The wastewater treatment plant is designed for a maximum flow of 11.75 mgd; at times our flows peak at 9 mgd. An expansion of the plant would be a necessity.

The numbers given in this report may be low, and when one takes into account fire flows, excessive irrigation, and peaking factors, both the current water and wastewater systems will need extensive expansion.

If you have any questions, please call me at (916) 781-0213.

Sincerely,



LARRY T. BUCKLE
Assistant Civil Engineer/
Utility Engineering



CITY OF ROSEVILLE

316 VERNON STREET • ROSEVILLE, CALIFORNIA 95678 • PHONE (916) 783-9151

September 24, 1986

TO: STEVE DILLON, PLANNING DIRECTOR
PLANNING DEPARTMENT

FROM: WILLIAM DUARTE, ELECTRICAL ENGINEER
ELECTRIC DEPARTMENT

RE: SECOND RECEIVING STATION
NORTHWEST ROSEVILLE

Presently, to serve the power needs of the City of Roseville, the distribution system originating from the City's four existing distribution substations has a capacity of 105 megawatts.

To fulfill the power needs of planned developments already approved by the City of Roseville, five additional distribution substations with a total capacity of 120 megawatts will be required. Land for these substations has been acquired. To further meet the remaining power needs required by the present Land Use Master Plan for future growth, six to seven additional distribution substations with a total capacity of 120-140 megawatts will be required.

Totalling the above, a distribution system of approximately 345 to 365 megawatts would be required for a City of Roseville ultimate build-out according to the City's Land Use Master Plan.

Berry Street Receiving Station presently receives bulk power from City resources associated with WAPA and NCPA and routes that power, via the City's 60kV subtransmission system, throughout Roseville to the various distribution substations for local distribution and customer delivery. Presently, the ultimate operating design capacity of Berry Street Receiving Station is planned for 240 megawatts. Further modifications to Berry Street Receiving Station would be extremely limited due to geographical constraints on yard expansion and the absence of available routes for any additional outgoing 60kV lines.

Thus, in order to meet future power needs as deemed necessary by the City's Land Use Master Plan and also maintain system reliability, a second receiving station is needed. System reliability is greatly improved in that, by having two separated receiving stations, catastrophic failure in one station would not affect the other and in that capacity and line reserves built into each station provides system backup upon the other station's failure.

The area north of the Roseville Southern Pacific yards and west of present Highway 65 contains 29% of the City's existing and 60% of the City's future power needs. Thus, a second receiving station should be located within this area.

Other important criteria for a second receiving station are:

1. 600' x 800' Rectangular, flat parcel; 800' oriented north-south.
2. The parcel must border the WAPA/SMUD transmission line tower corridor for access for incoming 230kV transmission lines.
3. The parcel requires an adjacent 100' north-south power line corridor from Baseline Road to Blue Oaks Boulevard for outgoing 60kV subtransmission lines.
4. For safety considerations and due to the dangers of a sudden rise of step-and-touch potential in and around a substation of this nature during any ground fault, a 120 foot no-development buffer around the perimeter of the parcel is required. This can be accomplished either by a separate green belt or 40' landscape belt plus roadway.

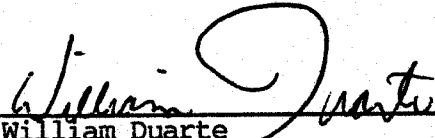
Attached is a copy of a map showing a parcel of land within the proposed northwest specific plan that nearly meets all the criteria for a second receiving station. Cook Riolo Road needs to be moved further west for total compliance. With that one adjustment the site is ideal. Also, a 25' P.U.E. is required along the south boundary of the tower line corridor from the northwest sewer line to Fiddymont Road for an additional 60kV subtransmission route.

Our department requests your department's assistance in acquiring the receiving station site, the 100' north-south power line corridor and the 25' east-west P.U.E. along the tower line corridor.

Also, we request from your department, assistance in developing the 120 foot safety barrier around the receiving station site.

Our department appreciates any help you can give us in this matter. Please contact this office, extension 103, if you have any questions.

Respectfully,



William Duarte

WD:er

cc: Kenneth Weisel
Electric Utility Director

PACIFIC GAS AND ELECTRIC COMPANY

PG&E + 1050 HIGH STREET • AUBURN, CALIFORNIA 95603 • (916) 885-2431

December 3, 1986

Mr. Bob Languell
R. C. Fuller Assoc.
5908 Fair Oaks Blvd.
Carmichael, CA 95608

Dear Mr. Languell:

This is in response to your inquiry regarding Pacific Gas and Electric Company's ability to provide natural gas service to the area described in the North Central and Northwest Roseville Specific Plan. The Northwest and North Central areas would be served from the same sources; therefore, comments stated herein would apply to both areas.

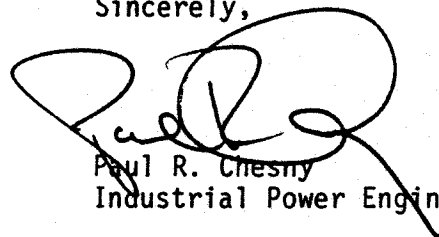
I have enclosed a map which shows our transmission and distribution natural gas mains in this area. Our line 123 (highlighted in yellow), a 500 psig, twelve-inch transmission main, supplies this area, as well as a segment of the northeast Sacramento area.

The development quantified by your proposed specific plan land use data will certainly place significant loads on our transmission and distribution systems. A load study is planned for next year, 1987, which will determine if reinforcement to line 123 is required. Should this prove necessary, the most probable method would be to parallel the existing transmission main, which would necessitate the acquisition of additional rights-of-way. Distribution mains would be extended, when requested, in accordance with our Gas Rules 15 and 16, copies attached.

The effect of the area growth on gas rates would be negligible. While there is a capital cost associated with new construction, increased utilization of our existing transmission and distribution facilities would outweigh any reasonable extension expense.

Please contact me should you need any additional information.

Sincerely,


Paul R. Chesny
Industrial Power Engineer

PRC:lnl
Enclosures

DECEMBER, 19, 1986

R.C.FULLER ASSOCIATES
5908 FAIR OAKS BOULEVARD
CARMICHAEL, CA. 95608

RE: NORTHWEST ROSEVILLE SPECIFIC PLAN.

GENTLEMEN:

THE NORTHWEST ROSEVILLE SPECIFIC PLAN ENCOMPASSES THE AREA THAT WILL BE SERVED BY OUR NEW FIRE STATION WE ARE BUILDING AT 1398 JUNCTION BLVD. THIS FIRE STATION IS BEING CONSTRUCTED WITH FUNDS COLLECTED FROM OUR FIRE FACILITIES TAX. THIS TAX IS TO BE USED STRICTLY FOR CAPITAL IMPROVEMENTS THAT APPLY TO THE FIRE SERVICE. WE CAN NOT FUND PERSONNEL THROUGH THIS TAX.

WE WILL ASSIGN ONE STANDARD FIRE ENGINE TO THIS FIRE STATION. THREE PERSONNEL WILL BE ASSIGNED TO MAN THIS ENGINE ON A 24 HOUR BASIS. WE PLAN TO EVENTUALLY ASSIGN 4 PERSONNEL TO THIS STATION AS THE FUNDING IS AVAILABLE.

THIS FIRE STATION WILL ALLOW US TO PROVIDE FIRE AND MEDICAL AID SERVICES TO THE MAJORITY OF THIS AREA WITHIN 4 MINUTES.

THE ROSEVILLE FIRE DEPARTMENT WILL RESPOND TO APPROXIMATELY 2300 REQUESTS FOR SERVICE IN 1986. THE PRESENT POPULATION OF ROSEVILLE PRODUCES ABOUT 76 REQUESTS FOR SERVICE FOR EVERY 1000 PERSONS. THE PROJECTED POPULATION INCREASE FOR THIS AREA WILL INCREASE OUR RESPONSES BY APPROXIMATELY 1725 ANNUALLY.

VERY TRULY YOURS,



W.O. WHITE
FIRE MARSHAL
ROSEVILLE FIRE DEPARTMENT

DRAFT NORTHWEST ROSEVILLE SPECIFIC PLAN



NORTHWEST ROSEVILLE SPECIFIC PLAN

City of Roseville

Proponent Draft

This draft Specific Plan was prepared in cooperation with the City of Roseville Planning Department. The Plan will be revised pursuant to additional direction from the City staff, the Planning Commission and City Council in the public hearing process.

July 27, 1988

Prepared by:

Wade Associates
2140 Professional Drive
Suite 140
Roseville, California 95661

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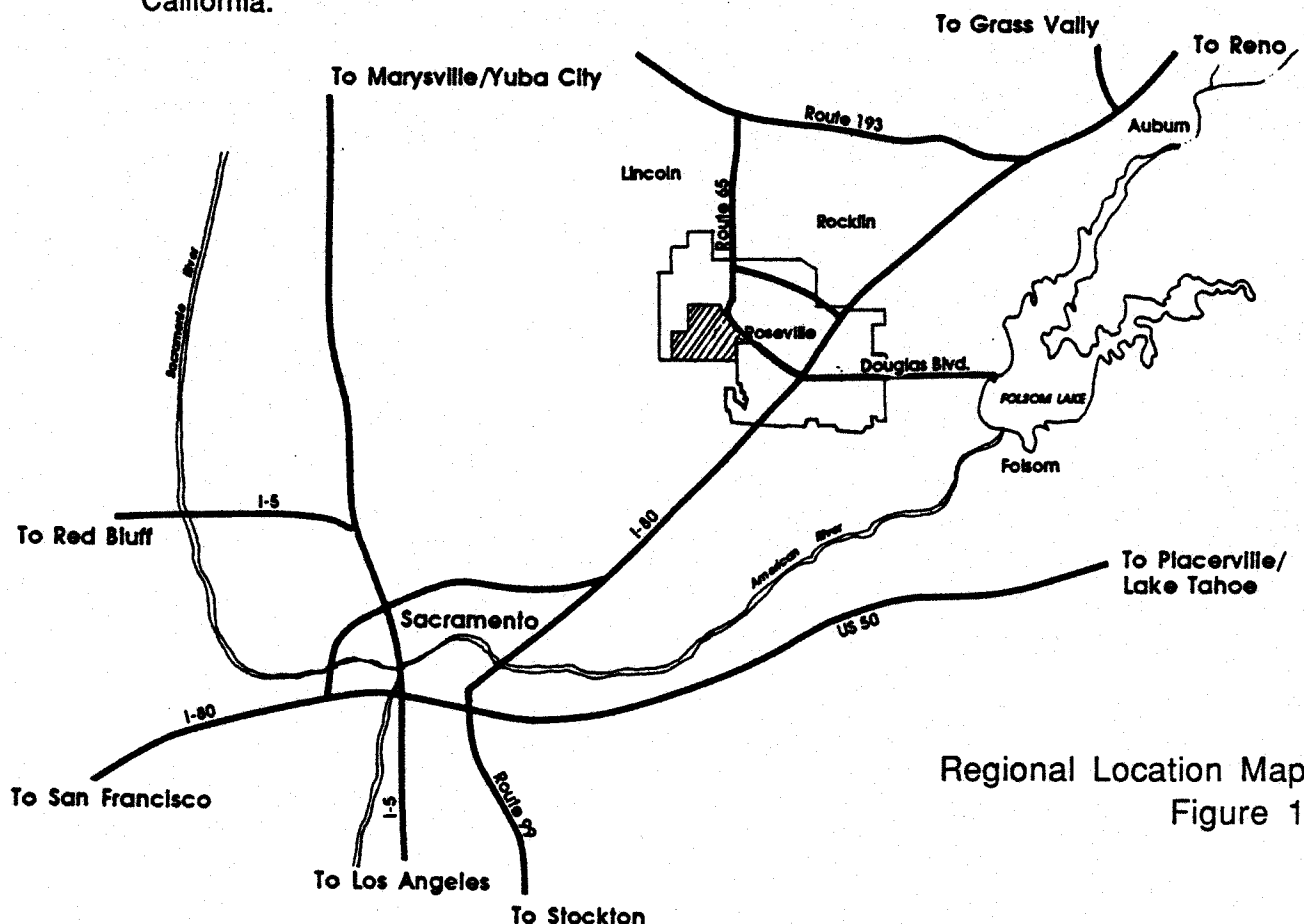
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1. INTRODUCTION AND PROJECT SETTING

The Northwest Roseville Specific Plan provides for the development of a residential community including single family and multi-family residences, neighborhood commercial and business-professional uses, schools, parks, open space, and a municipal golf course. The Plan include comprehensive circulation and infrastructure systems. It is the primary purpose of land use in the Northwest Plan Area to provide a large housing supply to accommodate the significant employment growth anticipated in the Roseville area.

1.1 The Specific Plan Area

The Northwest Roseville Specific Plan Area, encompassing approximately 2,670 acres, is located on the west side of the existing urban area of the City of Roseville, approximately 20 miles northeast of downtown Sacramento. It is accessible from I-80 and the new Highway 65 Bypass, and is approximately 12 miles east of Highway 99 via Baseline Road. The area is near many of the major employment growth centers in the Sacramento region, itself recognized as one of the most rapidly growing urban regions in California.



Regional Location Map
Figure 1

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1.2 Purpose and Content

The City of Roseville amended the Land Use Element of the City General Plan on November 6, 1985 by allocating preliminary land use within each of four Specific Plan Areas in the City. The Northwest Roseville Specific Plan Area was designated as a predominantly residential community with a preliminary allocation of 8,129 dwelling units. An additional 550 dwelling units have been included in this Specific Plan under the terms of a subsequent agreement involving the dedication of acreage for a municipal golf course. Final adoption of the land use allocations set forth in the 1985 General Plan Amendment is contingent upon the approval of this Specific Plan and related development agreements for the affected properties.

The Northwest Roseville Specific Plan refines the 1985 Land Use Allocation and serves as the ultimate guide to development in the area. It implements the intent of the City General Plan by setting forth regulations, conditions and programs which will further carry out the objectives and policies of the General Plan. The Specific Plan process permits the opportunity to plan, coordinate, implement and monitor development over a large area in a comprehensive manner.

The Plan combines the elements of a General Plan, zoning ordinance, sign ordinance and capital improvement program in a single package tailored to the particular area. The Specific Plan is intended to provide for the orderly and systematic development of the Northwest Area in a manner consistent with the policies of the City of Roseville and the characteristics and limitations of the land. All individual development projects within the Plan Area, except those specifically excluded, are subject to the goals, policies, and guidelines set forth in this Specific Plan.

The Specific Plan document is composed of several sections, or elements, with related graphics and exhibits. Each of these sections addresses a specific subject area, such as housing or circulation. The emphasis found in each element is described in the following summary.

Section 1. Introduction and Project Setting

This section provides an overview of the structure and concept of the Specific Plan, and a description of the environmental and geographical factors that influence the land use, public facilities, and circulation proposed in the Plan.

Section 2. Land Use Element

The Land Use Element describes the basic concept and purpose of the land uses proposed in the plan area. The description is summarized in the Land Use Table (Table 1), and

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illustrated by the Specific Plan Land Use Diagram, (Figure 7). The element addresses the issue of housing density and the land use policies that will guide the configuration of neighborhoods. Specific guidelines on the character of residential, commercial, and business-professional structures, signage, landscaping and site planning are reserved to the Urban Design Guidelines in Section 8.

Section 3. Housing Element

The Housing Element addresses the concern of providing a housing mix that will be affordable and meet the needs of the future work force and residents of the Specific Plan Area. The Element describes the general need for housing based on growth in the work force, and the approach to affordability that can be achieved through response to the housing market. The Element describes housing cost reduction and income support programs that are anticipated to be available within the Plan Area over a period of twenty years. The Element also describes new programs that may be applicable within the City.

Section 4. Circulation Element

The Circulation Element summarizes the basic City policies regarding circulation standards and describes the circulation facilities that are anticipated in the Plan Area on the basis of traffic projections. These include the major arterial system, the secondary collector system, and the pedestrian and bicycle system proposed in the Plan. Specific policies for the implementation of Transportation Systems Management and other trip reduction methods are described in the Element. The relationship of land use to the circulation system and the effect on trip reduction and air quality is addressed in this Element.

Section 5. Open Space and Resources Management Element

The Open Space and Resources Management Element describes in more detail many of the natural features in the Plan Area, and the manner in which they are protected and incorporated in the proposed urban pattern. The oak woodlands, vernal pools, natural floodways and riparian areas are addressed within this Element. In addition, the Element addresses the management of broader community resources, such as air quality, water quality, and the conservation of potable water and energy.

Section 6. Public Facilities and Services Element

The Public Facilities and Services Element describes the infrastructure elements, utilities, schools, parks, fire stations, libraries, and other facilities and services required to serve the proposed residential population. Drainage facilities are addressed in this section of the Plan although the existing drainage conditions and the natural floodways are addressed in the Open Space and Resources Management Element.

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Section 7. Implementation Plan

The Implementation Plan describes public and private land use regulations, proposed methods of maintaining certain public and private areas, proposed infrastructure phasing and a description of proposed public facility and infrastructure financing mechanisms.

Section 8. Urban Design Guidelines

The Urban Design Guidelines provide much of the detail that will guide specific development details within the Plan Area and, thus, will establish the distinctive features that will come to be identified with the community. The Urban Design Guidelines address landscaping in both public and private areas, the general configuration and special features of the building design, signage, and the interface between land uses.

1.3 Enabling Legislation

The characteristics of a specific plan document and the approval process is described in Article 8, Sections 65450 through 65457 of Title 7 Planning and Land Use Law, California Government Code. This statute mandates that the specific plan must be consistent with the adopted general plan of the jurisdiction in which the plan area is located. It further states that all subdivision and development, all public works projects and zoning regulations must be consistent with the specific plan.

The Northwest Roseville Specific Plan is consistent with the Roseville General Plan.

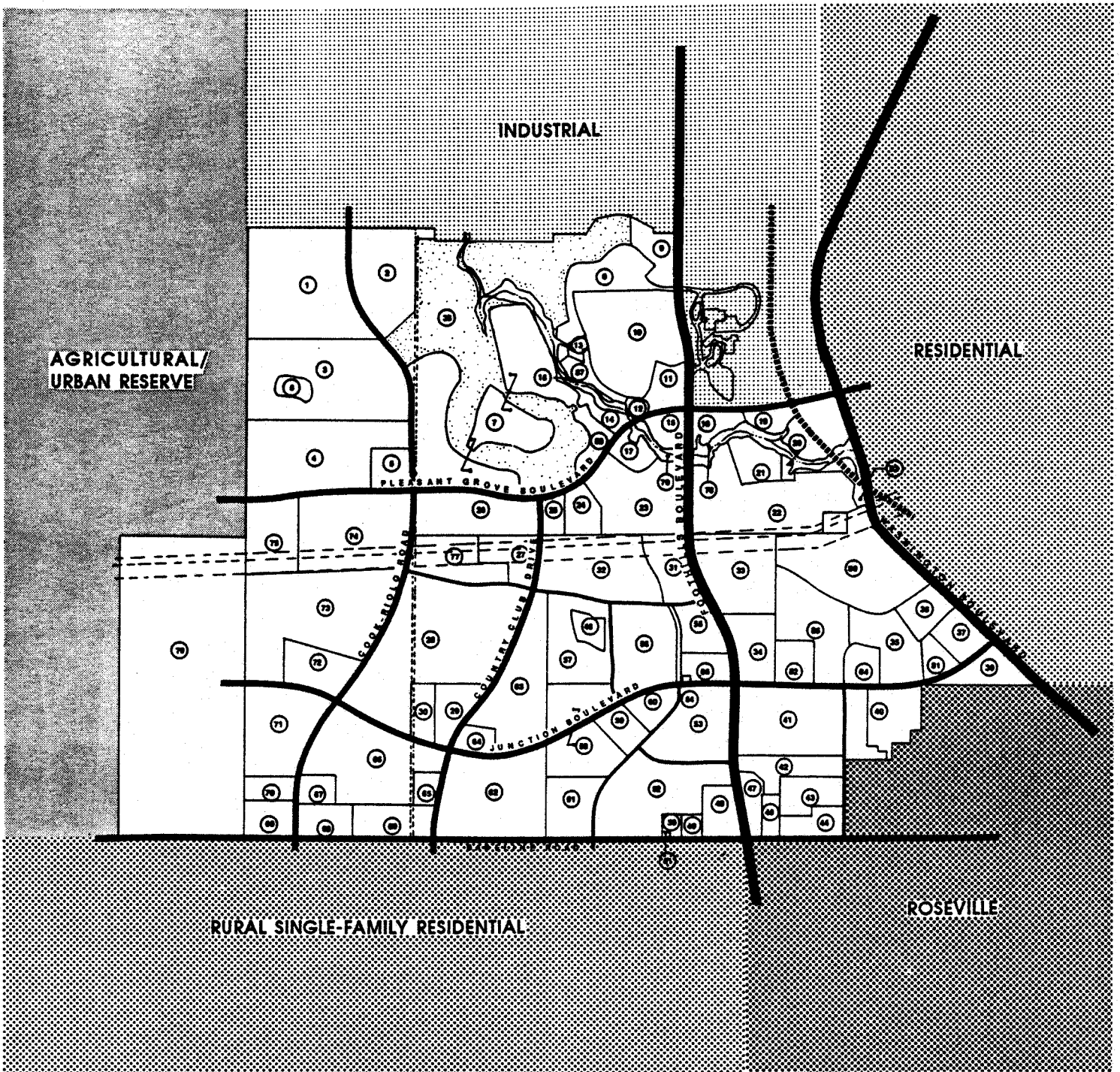
1.4 Specific Plan Setting

The Northwest Roseville Specific Plan Area consists of approximately 2,670 acres of developed and undeveloped land located northwest of the historic center of the city of Roseville as illustrated in the Local Area Map (Figure 2). The Plan Area is bounded on the north by the North Roseville Industrial area, on the east by Highway 65, on the south by Baseline Road, and on the west by the west boundary of Section 32.

1.4.1 Surrounding Land Use

The Northwest Plan Area represents a major thrust of development to the west side of the City. Washington Boulevard separates this area from the existing residential development to the east. To the south is a mix of older, and new, residential neighborhoods, and large lot residential areas further west in the unincorporated areas of Placer County. To the west is undeveloped rolling terrain with grasslands and scattered oak woodland typical of the area.

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Local Area Map
Figure 2

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Immediately north of the Plan Area a major regional employment center is anticipated to provide approximately 30,000 industrial, warehouse and office jobs over the next 20 to 30 years. The Northwest Plan Area is also readily accessible from other employment centers anticipated throughout South Placer County.

1.4.2 Existing and Previously Approved Land Use Within the Specific Plan

The Northwest Specific Plan Area encompasses several residential developments that existed prior to designation of the Plan Area in 1985, or were approved for development prior to that time. Plan Area development and construction is contingent upon specific plan approval and execution of development agreements. However, those properties in the Northwest Specific Plan Area that had already received City approval, were in the development application review process or had no change in land use prior to the adoption of the General Plan Amendment in November, 1985 and are technically exempt from provisions of this Specific Plan. Although exempt, these projects fall within the general boundaries of the Northwest Plan Area and, accordingly, have been considered in the Specific Plan analysis and are included on accompanying maps and tables to insure a coordinated planning effort. Projects not subject to this Plan are listed below and graphically shown in Figure 3 : Development Projects Exempt From the Specific Plan.

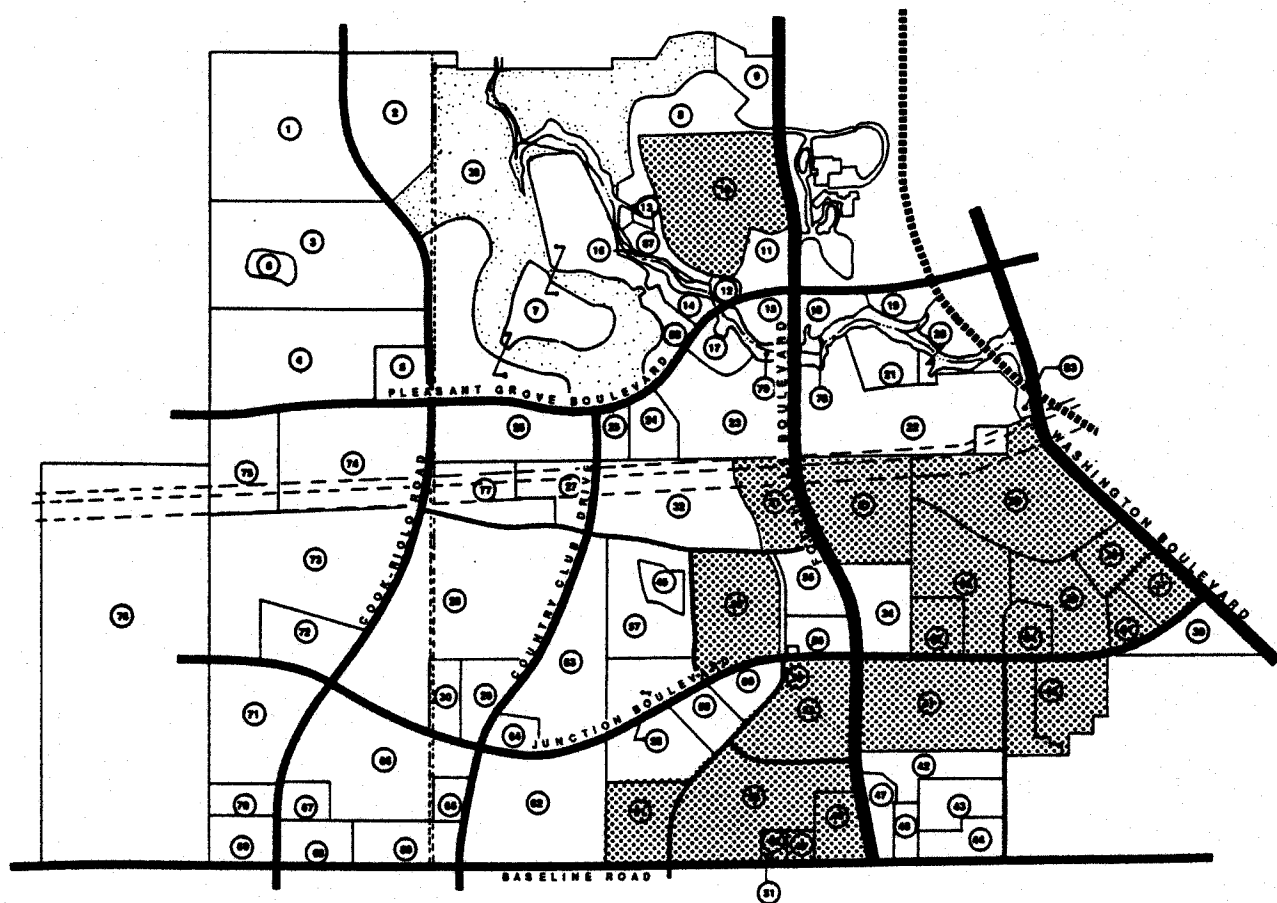
- Kaseberg Mobile Home Park
- Pilgrims Creek
- Quail Ridge
- Larchmont Greenbriar
- Silverado Oaks
- Sun Meadows
- Pleasant Grove
- Fairview Park
- Kingswood
- Springfield
- Autumn Oaks
- Sunrise Foxborough
- The Brickyard
- Day Care Center

These projects account for 631 acres, or twenty four percent (24%) of the land area in the Specific Plan. The projects include a total of 3,497 dwelling units, or forty three percent (43%) of all dwelling units in the Plan Area.

1.4.3 Infrastructure and Public Services Availability

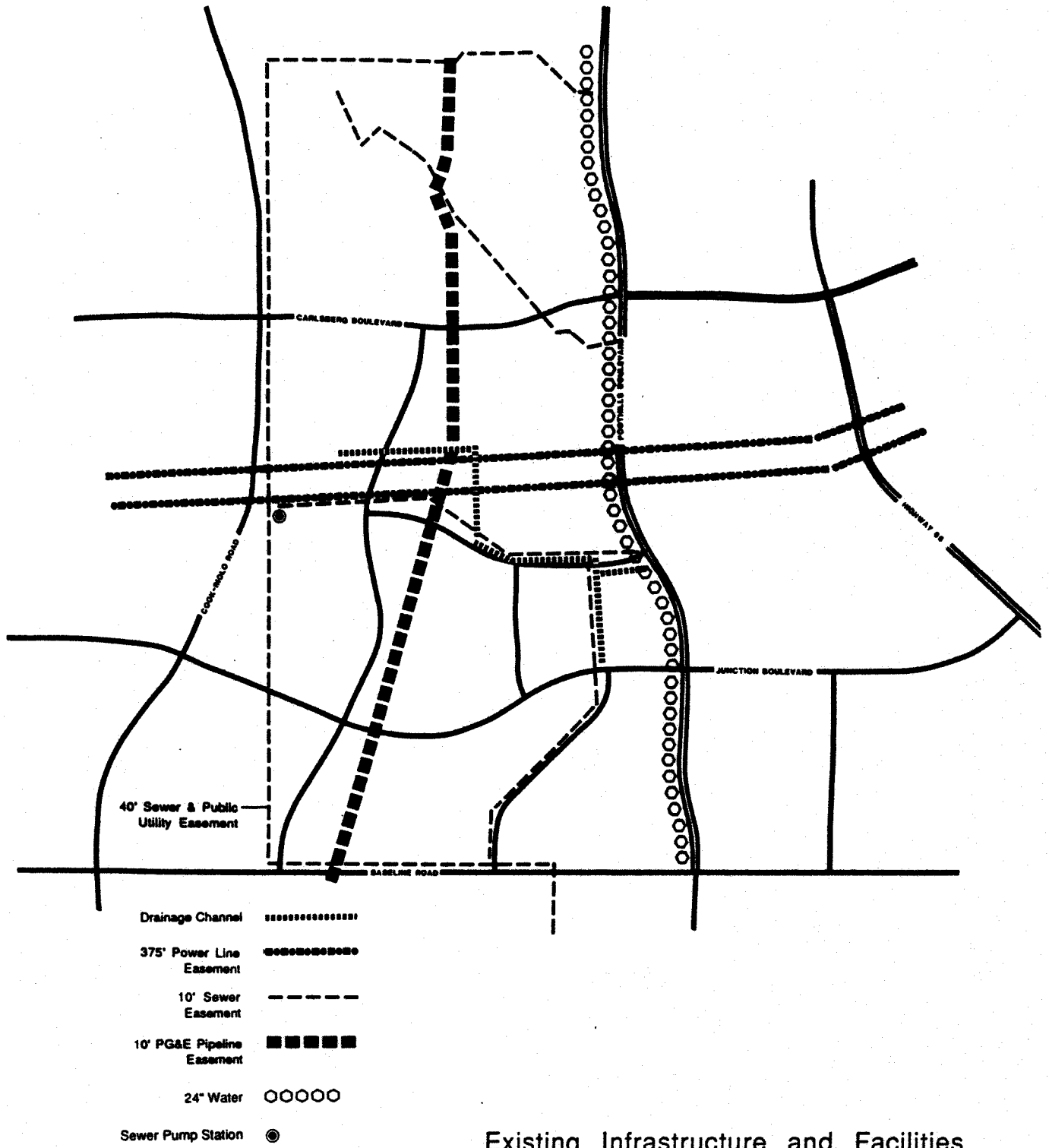
The development of the Northwest Plan Area has been anticipated by the City of Roseville with the formation of assessment districts and the subsequent improvement of major infrastructure elements that will be needed to service this area. These facilities are shown on Figure 4: Existing Infrastructure and Facilities. Major circulation

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Development Projects Exempt From the Specific Plan
Figure 3

Proponent Draft



Existing Infrastructure and Facilities
Figure 4

Proponent Draft

improvements in place are Foothills Boulevard and the extension of Junction Boulevard from Washington Boulevard nearly 1.5 miles to the approximate center of the Plan Area. Other improvements include a short section of Pleasant Grove Boulevard, Baseline Road and Washington Boulevard. In addition, the sewer and water improvements funded by the Northwest Roseville Sewer Assessment District in 1982 are complete and provide sewer and water capability for substantial development within the Plan Area.

Improvements in progress include Boulevard extension between Baseline Road and Roseville Road/Cirby Way. Although this connection is outside the Plan Area, it will provide a critical link to south Roseville and Interstate 80. A detailed discussion of public infrastructure and facilities is presented in the Public Facilities and Services Element, Section 6.

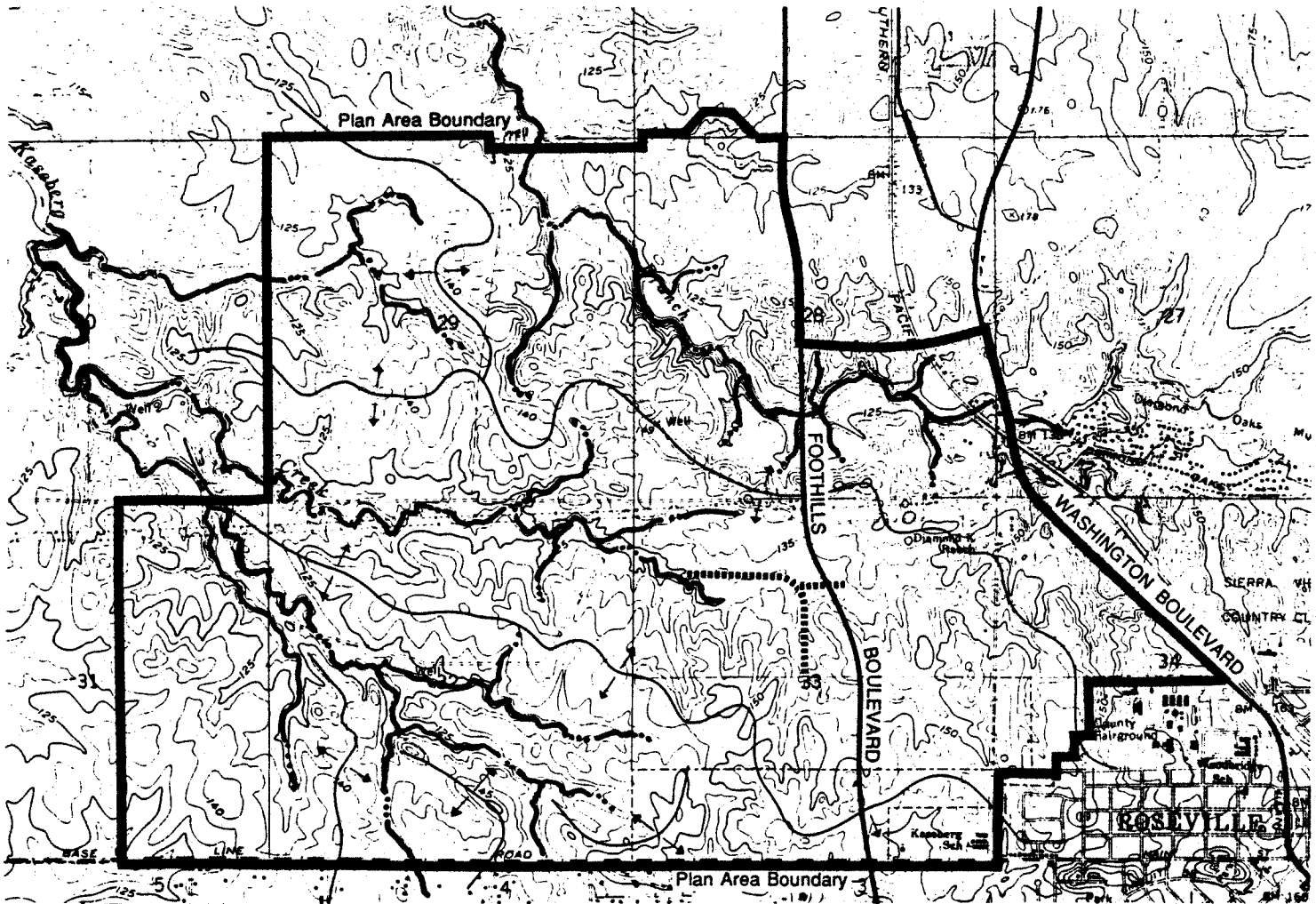
A power line transmission easement 350 feet wide transects the Plan Area east to west approximately mid-way between the north and south boundaries. The City will also require an additional 25 feet along the south side of the easement for a total width of 375 feet. No buildings may be placed within this easement, however, several other uses, including parking areas, recreation and drainageway improvements may occur.

1.4.4 Natural Setting

With the exception of properties previously developed or under construction, the land within the Northwest Roseville Specific Plan Area is primarily vacant, open grassland interspersed with groves of native oaks and clusters of riparian vegetation along water courses. The most significant woodland areas exist in the northern portion of the Plan Area. Certain areas have been used for grazing or have previously been cultivated and planted with grain crops. Topography is gently rolling in character with elevations ranging from 100 to 155 feet above mean sea level. Slopes in the Plan Area are typically less than five percent except those areas along the channel of the South Branch of Pleasant Grove Creek. The creek channel and the adjacent flood plain are generally excluded from development in any case, consequently, slope is not a major issue in the Plan Area.

The entire Plan Area is within the Pleasant Grove Creek watershed, however, none of the area drains directly into Pleasant Grove Creek. The principal riparian features in the Plan Area consist of a network of drainage swales which connect with Kaseberg Creek and the South Branch of Pleasant Grove Creek as shown on Soils, Drainage/Floodway and Topography Diagram (Figure 5). Approximately 35% of the Plan Area drains to the South Branch and 65% drains to Kaseberg Creek. Both creeks are part of the Pleasant Grove Drainage Basin and water flow in these tributaries is intermittent. A small agricultural pond is located on the south side of South Branch approximately 600 feet west of Foothills Boulevard. This pond is seasonal, and normally diminishes to a muddy depression during the summer when there is no flow in South Branch, however, the depression is within the 100 year floodplain of South Branch and, consequently, will be incorporated in the landscaping of the adjacent land use.

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THIS MAP HAS BEEN FORMALLY
SUBMITTED FOR APPROVAL BY
THE CITY OF ROSEVILLE

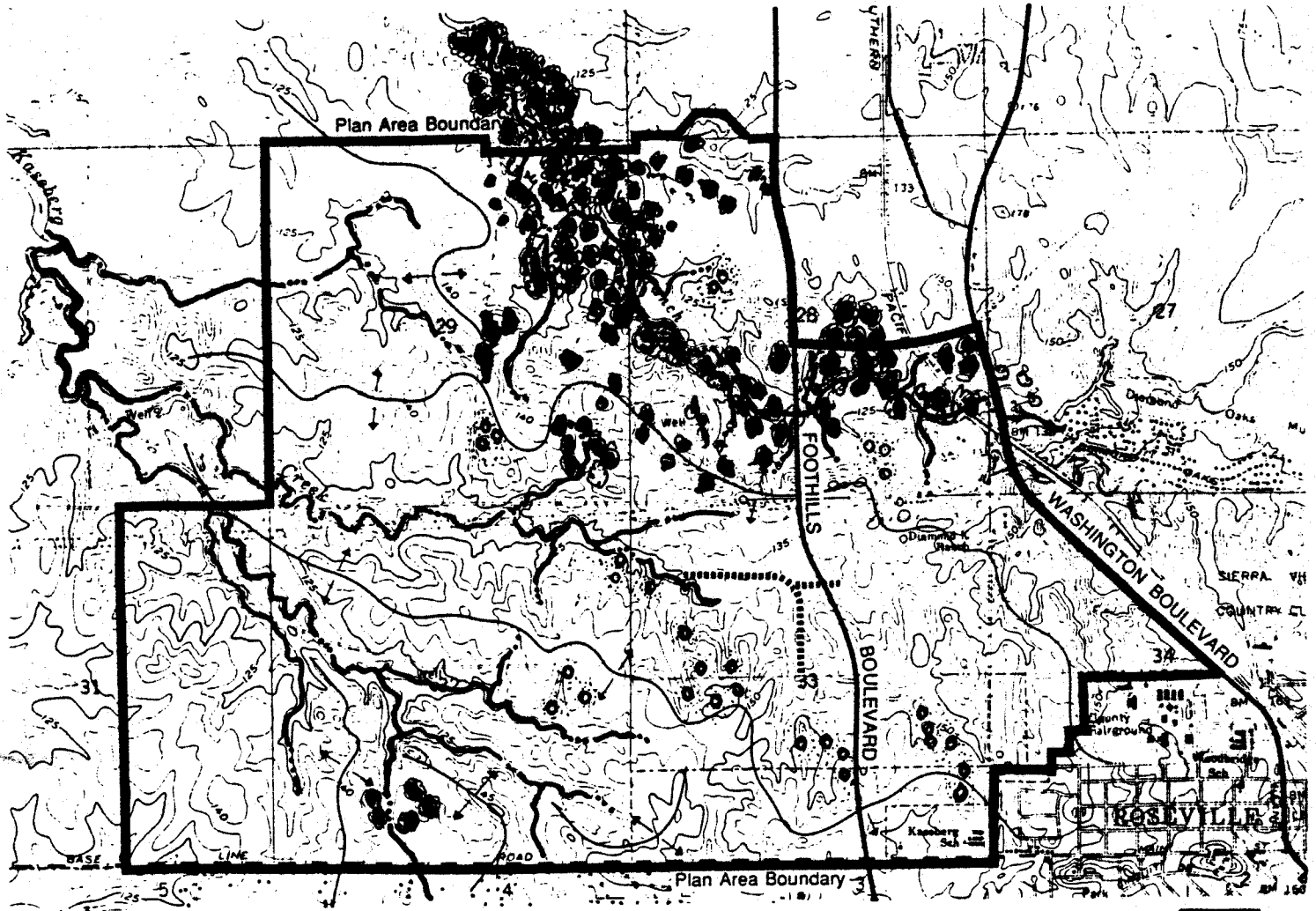
- ← → Direction of Surface Drainage
- ~ Summit Line
- Natural Drainage Course
- Existing Storm Drain



WADE ASSOCIATES
PLANNING • DESIGN • ECONOMICS

Soils, Drainage/ Floodway and Topography Diagram
Figure 5

Proponent Draft



THIS MAP HAS BEEN FORMALLY
SUBMITTED FOR APPROVAL BY
THE CITY OF ROSVILLE

● OAK WOODLANDS
● OPEN GRASSLAND



WADE ASSOCIATES
PLANNING DESIGN ECONOMICS

Vegetation Habitat Diagram
Figure 6

Proponent Draft

The geologic formation in the Plan Area includes alluvium fan deposits, terrace deposits, Vicor and Valley Springs sandstone, and Laguna siltstone. No active faults are located in or near Roseville and the area is in a "Low Severity" earthquake zone. The four soil types in the Plan Area (Cometa-Fiddymont Complex, the Cometa-Romona Sandy Loam, the Fiddymont Loam, and Xerofluvents) are generally considered firm soil layers which possess high runoff potential and low expansion and compressibility characteristics.

The Plan Area, in common with much of Roseville, encompasses approximately 360 vernal pools; small depressions, underlain by hardpan, that fill with water during rainy periods and dry up in the spring. These pools may support unusual and, sometimes, rare plants and animals. The majority of the pools are relatively small and shallow. There are, however, some significant pools in the northern portion of the Plan Area. Limited occurrences of Bogg's Lake Hedge Hyssop, Dwarf Downingia and Vernal Pool Brodiaea have been identified in the area. Vernal pool mitigation and policies are addressed in the Open Space and Resource Management Element (Section 5).

In addition to the vernal pools three basic ecosystems; grassland, oak woodland, and riparian are found in the Plan Area as shown on the Vegetation Habitat Diagram (Figure 6). Grassland is the predominant feature. This system has been perpetuated through grazing, and includes a mix of natural and introduced species. The grasslands are scattered with oak woodland, particularly in the northern portion of the Plan Area.

Riparian woodland vegetation is found upstream in tributaries of Kaseberg Creek and in the South Branch of Pleasant Grove Creek. This vegetation is composed of trees which include the Valley Oak, Blue Oak, Black Oak, Live Oak, Scrub Oak, Willow and Cottonwood. The under story vegetation consists primarily of grasses, herbs, blackberry, miner's lettuce, and buck brush. Riparian habitat is limited and poorly developed because of the intermittent nature of the waterways in the Plan Area.

Wildlife in the Northwest Plan Area is found in both open grass/wheatland and in the riparian areas. Wildlife associated with the grass/wheatland includes pocket gophers, black-tailed jack rabbits, meadowlarks, horned larks, and other species adapted to open habitats. Over-grazing and limited water supply have limited the value of this area as a wildlife habitat. Wildlife associated with oak woodland-riparian woodland areas include mule deer, coyote, gray fox, opossum, striped skunk, California quail, gopher snake, king snake, salamander, toads, lizards, red-tailed hawk, woodpeckers, mourning dove, yellow-billed magpie, and common crow. The relatively thick vegetation around the tributaries now provides and will continue to provide forage and cover for these species. The intermittent nature of the waterways limits the fisheries to the seasonal presence of common species such as minnows and mosquito fish.

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1.5 Overview of the Specific Plan Land Use Concept

The Northwest Roseville Specific Plan Area provides an opportunity to establish a new and distinct residential area for the City of Roseville that will house an eventual population of approximately 19,300. The Plan Area will serve primarily as a residential community designed to provide housing for the growing work force in the I-80 and Highway 65 corridors. The Plan Area provides new residential neighborhoods served by schools, parks, shopping areas and a municipal golf course, all in close proximity to Roseville employment centers.

The relationship of this Plan Area to the employment centers is a key element in the overall planning to maintain a balance of jobs and housing in the South Placer region. A balance between the number of jobs and the housing supply will help to reduce both the overall number of commuters from outside the region, and the distance employees will commute to work within the area. These factors can help to reduce traffic congestion and the deterioration of air quality.

The Plan is comprised of a series of neighborhoods which provides for a variety of residential densities and dwelling types ranging from low density (R-4) single-family dwellings to high density (R-20) apartments. Residential neighborhoods are delineated by a combination of arterial streets or collector streets and open space. Residential neighborhoods are oriented away from arterial streets in order to foster a sense of community identity and privacy while improving traffic circulation and safety.

Neighborhood and community level retail commercial sites are designated throughout the Plan Area for the convenience of Plan Area residents. In addition, sites are designated for business/professional uses intended for resident convenience and as local employers of professional and support personnel. A total of eighteen sites have been reserved for commercial and/or office uses. These are typically located on the major arterials in close proximity to the residential neighborhoods to facilitate ease of access.

The gently rolling topography throughout the majority of the Plan Area will facilitate development of the various land uses included in the Plan. The natural features of the Plan Area create a strong open space amenity. The floodways and drainages along the South Branch of Pleasant Grove Creek are a key element of the open space character of the Plan. Stream courses, riparian vegetation, vernal pools and oak woodland, which constitute the primary natural amenities in the area, will be preserved in large part to enhance the Plan Area environment. These amenities and resources are to be preserved through a combination of open space designations and strict development guidelines.

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A curvilinear, landscaped circulation system for vehicles, bicyclists and pedestrians will link the residential, commercial and public lands. A key element in the design of the Plan Area is the presence of a high voltage power lines. The powerlines, are contained within a 375 foot wide easement oriented in an east-west direction, bisecting the Plan Area. The easement forms an open space and pedestrian circulation "spine" which combines with the floodway and street corridors to connect schools, parks and a pedestrian circulation system. Individual neighborhoods connect directly to the easement corridor via pedestrian access ways, road crossings and loop roads that connect the open space within the neighborhoods.

Land Use with the Northwest Roseville Specific Plan is summarized in Table 1 and illustrated in the Land Use Plan, Figure 7.

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Table 1
Land Use
Summary

<u>Non-Residential Land Use</u>	<u>Acres</u>
<i>Business/Commercial Uses</i>	
BP-Commercial	44.5
Business Professional	43.6
Commercial	117.6
Comm-Recreation	15
Subtotal	<u>220.7</u>
<i>Other</i>	
Parks	131
Park Reserve	30
Floodway Easement	5
Recreation Corridor	6.6
Recreation Floodway	16.9
Golf Course	175
Schools (K-6)	42.2
Schools (7-8)	18
High School	41.6
Church	8.4
Elect. Substation	0.5
Fire Station	1
Urban Reserve	423.6
Subtotal	<u>899.8</u>
TOTAL	1120.5

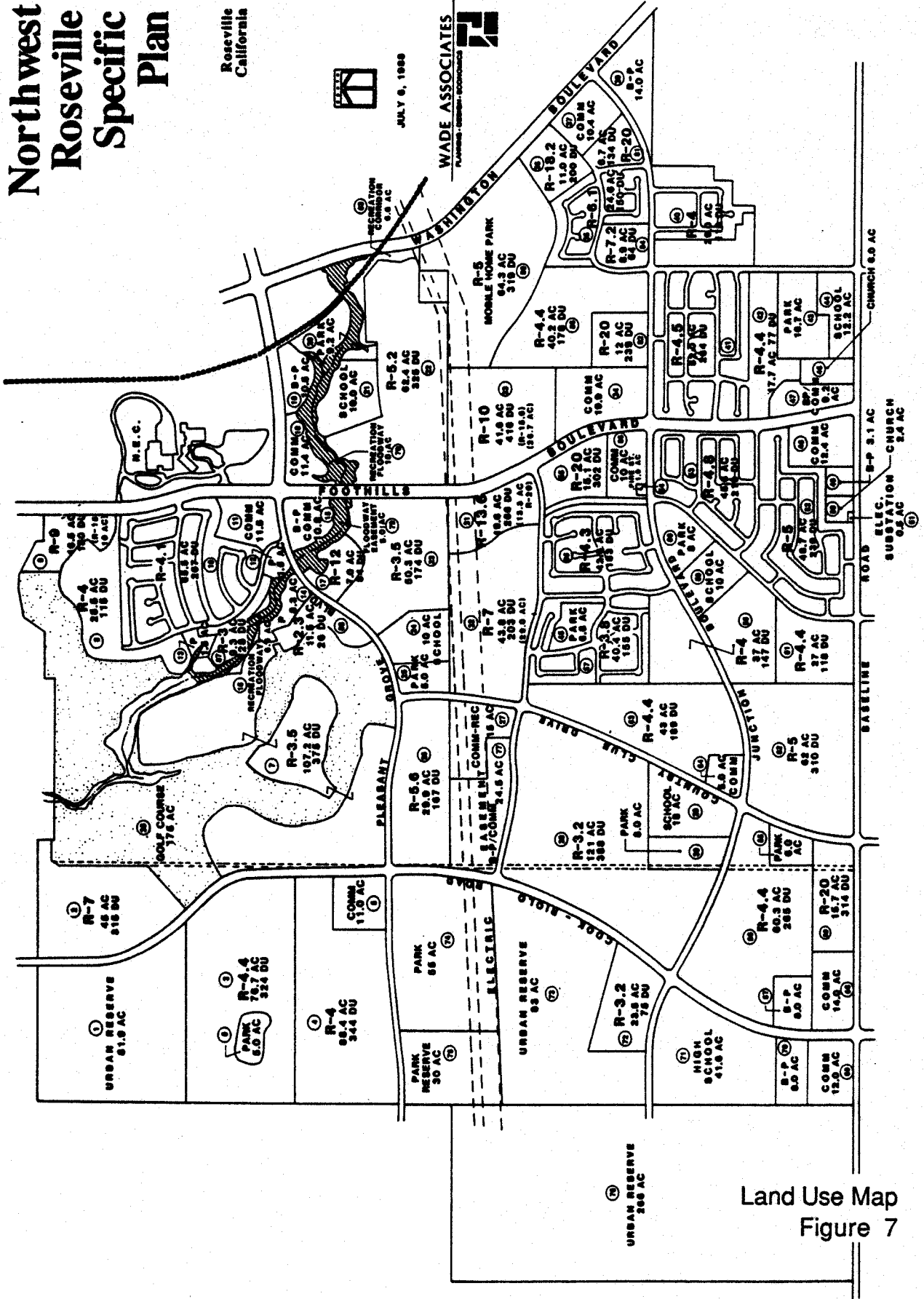
<u>Residential Land Use</u>	<u>Dwellings</u>	<u>Acres</u>
Low Density	5357	1283.95
Medium Density	732	122.3
High Density	2105	145.2
TOTAL	8194	1551.45

Northwest Roseville Specific Plan

Roseville
California

JULY 9, 1990

WADE ASSOCIATES
PLANNING ENGINEERS ARCHITECTS



Land Use Map
Figure 7

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2. LAND USE ELEMENT

Land use in the Northwest Roseville Specific Plan reflects the primary role of the area as a residential community within the City. Residential development is the single largest proposed use, and individual neighborhoods are defined by the major arterial streets and open spaces. The commercial and professional service land uses are limited to relatively small sites and are located to support the shopping, leisure, and service needs of the area residents, rather than serve as employment centers or retail centers for people outside the vicinity of the Plan Area.

The distribution of land use within the Plan Area reflects the natural features of the site, the basic circulation system, and the surrounding land uses. More intense residential land use, particularly multi-family land use, is located near major arterial streets and commercial services in keeping with the City General Plan guidelines for such land uses. Commercial sites are located near major intersections and along arterial streets to facilitate access.

There are no high intensity land uses, such as office centers or light industrial complexes, in the Plan Area that require special location considerations. The natural conditions generally allow conventional development to occur with minimal constraint, except in those areas of environmental sensitivity, such as the oak woodlands, the vernal pool area, and the riparian areas. Urban land uses are typically avoided in these areas or provided with special land use guidelines to minimize the effect of urban development.

2.1 Residential Land Use

The Plan provides for development of 8,194 dwelling units on 1,551.45 acres. The ultimate residential population will be approximately 19,346 based on an assumed average household population (Source: City of Roseville Planning Department). The total unit count includes the initial dwelling unit count allocated in the General Plan Amendment in November, 1985 (8,129) and an additional 550 dwelling units allocated as a result of inclusion of a public access golf course site within the Plan Area for a total of 8,679. However, a total of 485 dwellings allocated in the 1985 General Plan are held in reserve to be reallocated within the City pursuant to a separate development agreement and are not allocated in this Specific Plan.

Single family dwellings are the largest category of dwelling unit type. These are at 4 or 5 dwelling units per acre which provide for conventional single family dwellings that are traditionally most affordable to middle and lower middle income households. The relatively gentle terrain, good quality soils for development, and the availability of

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sewer, water, and major streets development costs and, ultimately, the price of housing. The Northwest Specific Plan Area is one of the most suitable areas in the City to provide single family dwellings, and the Land Use Plan is designed specifically to accommodate this use.

The second dwelling unit type is small-lot, or attached dwelling units in densities of 6 to 10 dwelling units per acre. In this density, housing affordability may be improved by utilization of innovative housing design and residential development patterns such as zero lot line and cluster homes, patio homes, duplexes, four-plexes, town houses, and apartments. These techniques can be utilized within planned developments in medium-density projects which may provide housing affordable to lower-middle income households while maintaining the overall residential neighborhood character in the Plan Area. Homes fronting on the golf course will typically be small lot single family units that will be in or near this mid-density range. This land use pattern will provide the maximum opportunity for home ownership along the course.

The Specific Plan also includes a number of project locations to be developed as multi-family residential uses. Typically, these residential uses are anticipated to be developed at densities in the range of 15 to 20 dwelling units per acre. Such units provide for housing that will be in lowest price ranges and will be affordable to, and suitable for, single individuals and small households.

Residential density is summarized by category in Table 2.

Table 2
Residential Allocation by Density Category

	<u>Dwellings</u>	<u>%</u>
Low Density Residential (R-1 to R-5)	5,357	65
Medium Density Residential (R-6 to R-10)	732	9
High Density Residential (R-11 and above)	2,105	26
	-----	-----
Total	8,194	100

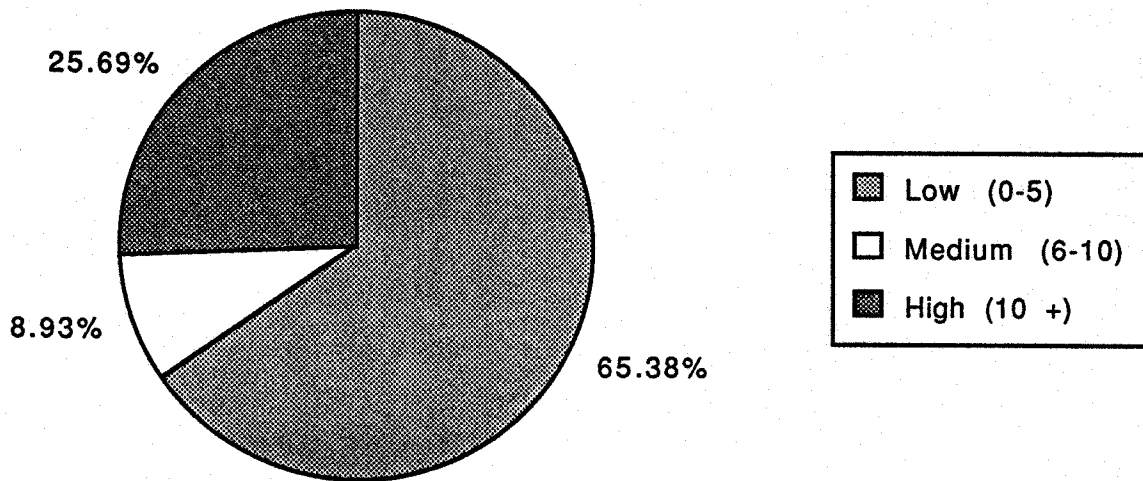
The average density of all land designated for residential land use is 5.28 dwelling units per acre.

2.1.1 Residential Land Use Goals

A fundamental goal of the Specific Plan is to create residential neighborhoods that are:

- Safe for residents, particularly for children.
- Quiet and buffered from noise and other nuisance factors.
- Convenient in terms of access to public services and goods.
- Protected from through traffic.

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- Clearly defined with a central focus of neighborhood identity.
- Responsive to and incorporating significant natural features.

The principal means of achieving these characteristics is through the land use pattern established in the Land Use Map and implemented through the policies and guidelines in this Land Use Element, as well as various policies and concepts set forth in the Circulation Element (Section 4), the Open Space and Resources Management Element (Section 5), and the Public Facilities and Services Element (Section 6). The residential land use within the Plan is organized as a series of "neighborhoods", each identified by the following features:

- Boundaries are created by a combination of collector and arterial streets, and open space.
- Residential areas are typically arranged in neighborhood clusters of 50 to 100 acres, depending on the configuration of the road network, and the natural features.
- Each residential area is inwardly oriented, away from heavily travelled streets. Back property lines abut adjacent arterial streets. Walls are used to provide visual privacy and attenuate traffic noise. Breaks occur in walls at intervals of not less than 400 feet to allow pedestrian access.
- Vehicular access points into residential areas are limited to reduce safety problems and congestion associated with through traffic.
- Typically, dwellings within a particular neighborhood will utilize a similar architectural and site design theme. Street landscaping will be similar within a given neighborhood.

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- Pedestrian paths and bicycle lanes provide linkage between neighborhoods.
- Each neighborhood contains a central activity focus such as a park or school.

More detailed design guidelines for all residential uses are contained in the Urban Design Guidelines, (Section 8). The Neighborhood Concept Diagram, (Figure 8) provides an illustration of these features.

The Neighborhood Pattern Diagram (Figure 9) illustrates the location of the individual neighborhoods defined by the street pattern and the location of parks and schools. For the purposes of this Specific Plan each of these neighborhoods is given a letter designation. In the subsequent planning and design of the residential development that will occur in each neighborhood the individual developers will establish a project name and identity.

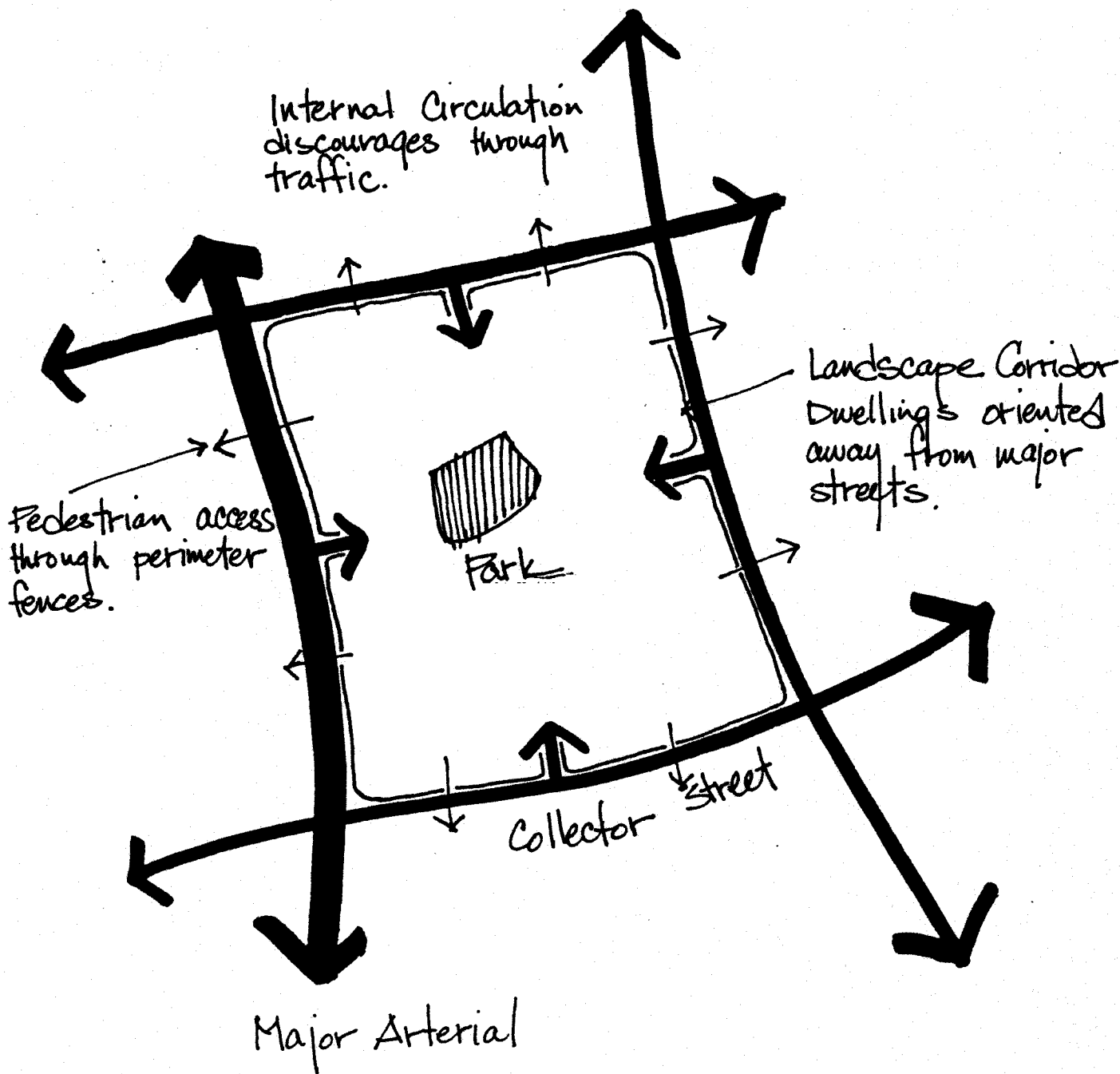
2.1.2 Specific Plan Residential Land Use Policies

1. Access and infrastructure extensions shall be provided to non-residential uses such as schools and support neighborhood retail in the same time frame as those services are provided for residential lands.
2. The mix of housing types within the Plan Area shall include dwellings that are assumed to be affordable to home buyers and renters that will be employed within eight (8) miles of the Plan Area.
3. Pedestrian and bicycle travel within and beyond all residential subdivisions shall be facilitated through suitable trails, pathways and bicycle lanes.
4. Buildings shall be sited with respect to topography, vegetation and other natural features of the building site.

2.1.3 Single-family Detached Housing:

1. Subdivisions shall be designed as "residential villages" with distinct boundaries defined by open space corridors, arterial streets and landscaped buffers, including boundary fences where appropriate.
2. Neighborhood design shall relate to natural features and constraints.
3. Residences shall be oriented with rear yards toward arterial streets.
4. Circulation systems within subdivisions shall emphasize internal circulation rather than accommodate through traffic.

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Neighborhood Concept Diagram
Figure 8

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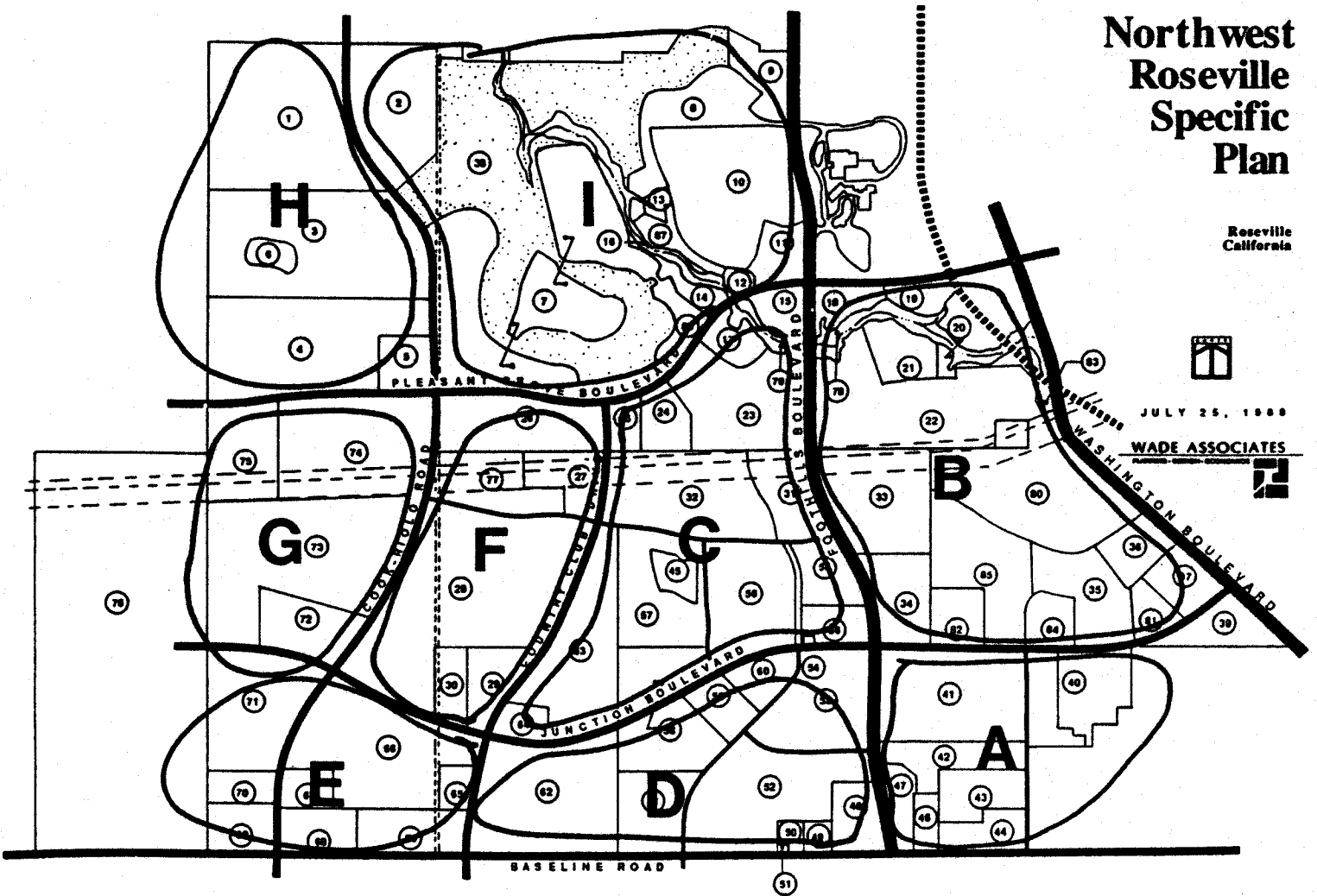
Northwest
Roseville
Specific
Plan

Roseville
California



JULY 25, 1988

WADE ASSOCIATES



Neighborhood Pattern Diagram
Figure 9

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5. Residential lot configurations which will accommodate zero lot line, cluster and other flexible designs are encouraged to maximize land use efficiency and respect natural constraints.

6. Buildings within a neighborhood grouping shall include a variety of roof lines, building heights, color schemes and setbacks to achieve visual interest. The architectural style shall be compatible among all buildings within each residential neighborhood.

2.1.4 Attached and Multi-Family Housing:

1. Townhouse and apartment developments shall be compatible with developments on surrounding parcels.

2. Separate vehicular and pedestrian circulation systems shall be provided which minimize auto and pedestrian contact.

3. Common open space areas shall be planned with specific functions in mind. Such areas should not be "left-over" spaces after building design.

4. Open space areas shall be connected with on-site pedestrian circulation systems. Units should view onto open space wherever possible.

5. Open space areas shall be used to preserve existing natural features when present.

6. Residential units adjacent to existing open spaces corridors should be oriented towards open space and should incorporate such corridors in project design.

7. Recreational facilities such as swimming pools, tennis courts, tot-lots and picnic areas shall be provided to meet the projected needs of the project population.

8. Buffering between multi-family development and major roadways, or non-residential uses shall be provided by setbacks, soundwalls, landscaping and berming, or a combination of all these.

9. Buildings shall be sited with regard to topography, vegetation and other physical features of each project parcel and adjacent parcels.

10. Tree preservation and grading policies set forth in the Open Space and Resource Management Element of this Plan shall apply to all residential development.

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2.2 Commercial Land Use

A total of ten sites are designated for commercial land use within the Plan Area. These sites are intended to be neighborhood and community service centers which will serve the frequent shopping needs of Plan Area residents. The commercial land use encompasses a total of 117.6 acres in parcels ranging from 5 to 20 acres in size. The Plan Area will provide more than 1.5 million square feet of floor area to serve the population of nearly 20,000.

The purpose of the commercial land uses is to provide a sufficiently large concentration and mix of shops and services that will attract and sustain most of the needs of the residents. This will reduce the number and length of trips to satisfy everyday needs, and thus the impact and energy required for this travel. It also creates an identity and theme for the new development.

The complement to the full service commercial centers is the clustering of residential development around the core area. The Specific Plan land use pattern accomplishes this objective by placing the multiple family adjacent to the commercial centers. The Plan will locate over ___ percent of the total population within one quarter (1/4) mile or less of the shopping needed for everyday activities.

The larger sites of 10 acres or more will provide for typical neighborhood shopping facilities. These are located at major intersections around the Plan Area to provide convenience for the Plan Area residents which will support the use of local facilities, and pedestrian trips. Typical uses in these areas include, but are not necessarily limited to, the following:

- Discount drug store
- Variety store
- Supermarket
- Restaurant/Coffee shop
- Convenience Services such as a Beauty shop or Dry cleaners
- Banks and Savings and Loans

The 20 acre site at the intersection of Junction Boulevard and Foothills Boulevard has the potential to fill shopping needs beyond the daily retail shopping. The site is large enough to accommodate a junior department store, a furniture store, sporting goods, movie theaters and other entertainment activities, and similar large facilities.

Smaller commercial areas can be expected to provide additional convenience services, as well as small specialty retail, convenience commercial and auto service stations.

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2.2.1 Commercial Land Use Goals

Commercial land use can be successfully integrated in a neighborhood with minimal negative effect if care is taken in the siting of the buildings, the ease of public access, and the physical interface with adjacent land use. The key goals relating to commercial land use within the Plan Area are:

1. The commercial land uses must sustain the basic shopping and service needs of the Plan Area residents to keep a majority of non-work trips within the Plan Area.
2. The commercial uses must support non-vehicular travel by making access easy and safe for patrons arriving on foot or by bicycle.
3. The commercial land use must complement the overall land use in the Plan Area.

2.2.2 Commercial Land Use Policies

The following policies are addressed primarily to the issues of land use and relationships to adjacent uses. More detailed policies relating to the specific design of commercial land use are presented in the Landscape and Architectural Design Guidelines, Section 8.

1. Each commercial area shall be accessible from at least one major collector or arterial street, with sufficient design capacity to accommodate traffic generated by the businesses as well as other local traffic.
2. Commercial areas shall be accessible by public transportation, pedestrian and bicycle routes.
3. Pedestrian walkways shall provide access to commercial areas separate from major vehicular driveways and circulation where feasible.
4. Secure bicycle parking areas will be provided at each commercial location.
5. Pedestrian seating areas, plazas, fountains and other elements of interest shall be incorporated into project design.
6. Commercial buildings with a rear elevation oriented to a public street shall provide a landscape setback equal to that required along the street adjacent to the primary building facade. Building elevations visible from the street shall be treated in the same manner as those fronting primary access. A point of access shall be provided for pedestrians from this public street so that pedestrians approaching the buildings from the rear will not be required to walk around the entire shopping center to enter.

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7. Commercial sites that abut residential areas shall provide landscaped buffers of not less than ten (10) feet in width and a six-foot high masonry wall.
8. Buildings shall be designed and sited in proper proportion and manner to be compatible with the architectural design and siting of existing and proposed buildings in surrounding residential areas.
9. Commercial centers and multi-tenant parcels shall have unified design utilizing consistent building materials, architectural styles, textures, detail, colors, landscaping and signage.
10. Distinctive architecture, variations in building orientations, setbacks and roof-lines shall be used to create interesting projects; however, "trademark" buildings dictated by chain or franchise businesses are generally discouraged.
11. Varied textures, materials, colors and landscaping shall be used to identify project entrances and to break-up paved areas.
12. Tree preservation and grading policies set forth in the Open Space and Resource Management Element of this Plan shall apply to all commercial development.
13. Parking lot design shall provide for good aisle circulation, minimization of conflicts, and ease of access.
14. No outside, unscreened storage will be permitted in commercial areas. Loading, service, and trash enclosure areas shall be fully screened from the street by a combination of masonry walls, grade separation, and/or dense landscaping.

2.3 Business Professional and Business Professional/Commercial

Business professional uses within the Plan Area are intended primarily to serve the needs of local residents. Consequently, typical uses may include professional services such as attorneys, accountants, medical services, insurance, travel agencies and similar services. In addition, the business-professional spaces will accommodate most general office uses, and thus, may provide a small employment base within the community. This employment base will contribute to a balance of jobs and housing within the confines of the Plan Area that would reduce the need for out-commuting.

The business-professional/commercial land use is intended to provide space for services that function well in a small store front or retail environment. The intent is to integrate a variety of retail activities and services in a single location to help reduce the need for travel outside the community, and to support the sense that the community is "self-contained" with a strong sense of community identity.

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2.3.1 Business-Professional and Business-Professional/Commercial Land Use Policies

1. Building scale shall relate to the building location within the Specific Plan according to the following categories:
 - a. "Gateway buildings" occurring at major intersections, adjacent to major thoroughfares or part of a corporate park shall typically be of larger scale, two stories in height, and may have individual image or relate to other buildings in a corporate park setting.
 - b. "Neighborhood" professional buildings on collector streets and those adjacent to single family neighborhoods shall be one-story, and shall incorporate residential forms and materials.
2. Business-professional buildings should have the primary parking areas to the rear and/or side of the building when practical.
3. All building and project entries should be well defined and establish a clear sense of entry.
4. Pedestrian plazas with landscaping, seating, drinking fountains and points of interest such as water elements or art sculptures should be incorporated into project design.
5. Secured bike storage, exercise and jogging facilities, lockers, showers for employees are encouraged within the business professional land uses to encourage walking and cycling to work.
6. Driveway access to Foothill Boulevard shall be limited in order to maintain visual continuity of the frontage landscaping and minimize traffic conflicts.
7. Tree preservation and grading policies set forth in the Open Space and Resource Management Element of this Plan shall apply to all business-professional development.
8. No outside, unenclosed storage shall be permitted.

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2.4 Other Land Uses

The Specific Plan Land Use Map illustrates a number of land uses that are typically not in the category of private use. These include the public and quasi-public uses and the spaces required for infrastructure and circulation. These uses are addressed in other sections of the Specific Plan that deal directly with the particular issues and policies germane to their function and character. Consequently, this section merely identifies those other land uses that are addressed elsewhere.

Streets

Circulation Element (Section 4)

Open Space

Open Space and Resource Management Element (Section 5)

Formal

Informal

Public Facilities

Public Facilities Element (Section 6)

Parks

Schools

Utilities

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3 □ HOUSING ELEMENT

The Northwest Roseville Specific Plan Area is intended to be primarily a residential community. It will provide for workers who will find employment in the City and surrounding employment centers, and others who are attracted by the location and amenities.

3.1 Primary Housing Goal

Specific Plan Housing Goal: Provide a mix of housing opportunities that will meet the need for affordable housing by the future residents and workers in the City.

Housing policy must be differentiated from residential land use, although the two are intertwined. Housing policy primarily addresses the issues of housing adequacy and affordability, whereas residential land use deals with the characteristics of neighborhoods. Residential land use is addressed most completely in the Land Use Element, while the housing affordability issue is addressed in this Housing Element. Residential land use and housing affordability are interconnected through residential densities. In general, it is presumed that higher residential densities, notably multi-family housing, equate to housing prices that are affordable to households in the lower end of the spectrum.

Consequently, the mix of low, medium, and high density housing is considered to be a factor in assuming housing affordability for the full range of household income groups.

The proposed affordable housing goal of the City's Affordable Housing Task Force is to provide 15 percent of the housing in each Plan Area affordable to low and very low income households. The affordable housing goal is further allocated among the low income (55 percent) and the very low income (45 percent) categories. A substantial number of dwelling units have been built or approved in the Northwest Specific Plan Area prior to approval of the Plan. Of the approximately 5,500 dwellings remaining to be built in the Plan Area 15% or 825 units would be affordable to low and very low income under the Affordable Task Force guideline.

3.2 Housing to Meet Work Force Demand

Employment and land-use are at the very heart of the planning for development of South Placer. All the planning for housing, transportation, public services and facilities is predicated on the assumed level of employment and the type of employment that is expected to occur through the next 20 years.

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Housing demand in a community is a composite of many needs determined by stage of life, income, familial status, age, and, not the least, individual perceptions of need. Ideally, the housing market sorts out these multiple needs. The City of Roseville has established both strong policies and implementation programs with regard to maintaining a balance of jobs and housing within the City, and in cooperation with other jurisdictions in South Placer County. Such policies and implementation programs were undertaken to assure an adequate supply of housing with regard to the employment growth anticipated with the construction of the Highway 65 Bypass, and have been in place since 1983. The fundamental policy requires that there be an adequate supply of housing to meet the needs of the labor force as it increases over time.

The policy is implemented through a number of measures, of which the most direct is a resolution which requires annual monitoring of jobs development and housing availability. Furthermore, the resolution requires that any employment generating activity of certain size shall be required to evaluate the availability of housing to accommodate the projected work force as a condition of approval of the use permit required to initiate such activity. In this way, the City can assure that housing will be available in a timely manner over a period of growth which may span several years.

Housing affordability for Plan Area residents is achieved primarily through provision of an adequate supply of housing to keep home prices and rents competitive with other housing opportunities in the City and the region.

The overall concern of housing affordability for the majority of residents in the City can be best met by assuring that there is an adequate supply relative to demand. The problems of heavy traffic congestion, deteriorating air quality, and disproportionately high housing prices relative to average wages in many of the metropolitan regions in California is partially attributable to insufficient supply of housing of housing relative to demand.

The City of Roseville has addressed this problem by providing adequate space and infrastructure to accommodate future housing demand, and by setting in place the means to regulate employment development relative to available housing supply.

3.3 Housing to Meet Very Low Income Needs

Apart from the need to accommodate normal employment growth in the City there is a fundamental problem of housing very low income households who cannot otherwise afford safe, clean, and adequate housing. Such housing needs are typically met in the older neighborhoods of a community where the older dwellings typically cannot command the same price as newer units in more recently built neighborhoods.

The magnitude of this problem in Roseville is not well documented, and it is not known how many households are living in substandard or overcrowded dwellings, or are paying more than they can afford to the detriment of meeting other basic needs. Furthermore,

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it is difficult to project, with any certainty, the magnitude of this problem over a period of years as the Northwest Specific Plan Area, and other areas of the City, are developed. It is clear that the solution to providing adequate housing to those who cannot afford any level of market rate housing will require some form of subsidy to help offset the difference between real cost of producing the housing, and the amount the household can reasonably afford.

3.3.1 Programs to Maintain Affordability

Programs to maintain affordability over time typically refer to rent controls and conditions of the resale of low income units. The premise underlying use of these programs is that housing provided at prices affordable to lower income households is presumed to be priced below the actual market value of the units.

The below market pricing is presumed to be made possible by a subsidy of some type that makes up the difference between the market price and the affordable price. Therefore, it follows that if the resale or rent of the units is not controlled, the owner has the opportunity of capture the subsidy as a windfall profit by selling the unit at full market value. Furthermore, the community has lost the value of the subsidy and the unit is no longer priced for the low income household.

The most common means of maintaining affordability in low income housing has been the use of resale clauses. These restrict the increase in resale value of subsidized units to some predetermined annual rate of increase, such as the Consumer Price Index (CPI). The clause typically remains in effect for a specified period of years, during which the local jurisdiction, or other agency, holds first right of refusal on the units at the predetermined price. Upon sale of the unit, the local jurisdiction has the option to purchase at a reduced price and then resell to another low income household. In this manner the initial subsidy is reserved and the unit remains affordable to low income households.

Such restrictions are common to most programs which involve a direct subsidy from local government, or where a project is required to include a certain percentage of housing units in a given price range. Sacramento County requires that units developed under its density bonus program must be subject to an agreement that the resale price will be restricted to 2-1/2 times the median income at the time of sale unless the initial low income purchaser has occupied the unit for a minimum of five years. This voluntary density bonus program has not been used by builders because of the resale restriction. The Federal housing programs contain similar, or more stringent, provisions and State law requires that the clause remain in effect for thirty years, under certain conditions.

A resale restriction would be effective in holding down the price of housing units to an affordable level; however, there are several secondary effects that should be considered. The total number of units that would be affected depends on the extent of the housing subsidy applied. In most communities the number of resale restricted units is a very

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small percentage of the total housing stock. In South Placer, however, it is conceivable that about 25 percent of all new units would be so regulated. This possibility suggests some of the secondary effects to be considered.

- A resale restriction or rent control, in effect, freezes the value of residential property. On a small scale this affects only the individual property owner, but when a significant percentage of the housing stock is involved, it is reasonable to assume that a measurable reduction in property tax revenue would be experienced by the local jurisdiction. Over a long period this is likely to translate to reduction in service capacity.
- The potential for increased value is a major incentive to maintain and upgrade property. Where increases in value are artificially foreclosed by rent control or resale restrictions the general quality of property maintenance may be relatively poor.
- Willingness to make an initial investment in the community will be somewhat diminished by the reduced potential for increase in value and, therefore, there is likely to be less investor interest. The result could be fewer units constructed and overall higher average prices due to simple supply and demand.
- If a significant percentage of units are subject to resale restrictions there will be, in effect, a dual housing market. Although the ramifications of creating two separate markets has not been explored, it seems likely to generate further divisions in the economy and to have the potential to permanently lock a segment of society into limited opportunity to benefit from increases in property values. The question here is whether, from the individual's perspective, access to a limited equity is preferable to having no equity at all.
- In South Placer, under current conditions, it is possible that imposing a resale restriction may drive workers to select housing outside the area. This could occur because comparable housing at competitive prices is available in Sacramento County. Given the opportunity to purchase an unrestricted unit, it seems reasonable to expect that the potential purchaser would locate outside the area even if the restricted unit offered relatively greater housing for the dollar. The purchaser would have to decide whether the saving in the price of the unit was worth the diminished potential to capture the increase in value. It would require a case-by-case analysis to determine which is the better deal for the individual, but it is not difficult to conceive of most potential home purchasers intuitively rejecting a restricted unit on that basis alone.

Obviously, the potential purchaser with limited income who has no choice will take advantage of the opportunity to purchase a unit whether restricted or not. The point is that given the current price structure in Placer County it is not certain that a restricted unit with some form of subsidy in Roseville will be priced significantly lower than a comparable but unsubsidized unit elsewhere.

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3.4 Existing Housing Programs

At the time of preparation of this Specific Plan the City's Affordable Housing Task Force, a group of citizen and development industry representatives, had prepared a City-wide Affordable Housing Implementation Program for consideration by the City Council. At the time such program is adopted by the City, landowners within the Plan Area will be bound by provisions of that program. The Affordable Housing Task Force recommendation includes a goal that each of the Specific Plan Areas provide 15 percent of the housing stock that is affordable to low and very low income households. A number of existing and available housing subsidy programs have been identified that may be used to implement this goal within the Northwest Specific Plan Area. These programs, and the amount of funding or dwelling units that may be assisted throughout the City, are summarized as follows:

3.4.1 State Programs

- Deferred Payment Rehabilitation Loan Program

Assume rehabilitation financing is provided to repair 15 existing vacant residential hotel rooms at \$5,000 per unit maximum.

- Predevelopment Loan Program

Assume 2 projects are partially financed using the maximum loan amount of \$75,000 per project.

- Rental Housing Construction Program

Assume 10 very low and 10 low income units are fully financed at an average per unit subsidy of \$35,465 and \$13,009 respectively.

- California Self-Help Housing Program

Assume 15 homes are constructed for the low income using the maximum program financing of \$15,000 per unit.

- California Home Ownership Assistance Program

Assume the City receives the maximum available loan of \$200,000.

- California Housing Trust Fund

Assume 5 very low and 10 low income units are fully financed at an average subsidy cost of \$35,465 and \$13,009 respectively.

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- California Housing Finance Agency Mortgage Revenue Bonds

Single Family: assume 25 homes are financed through this program at an interest rate 2% below an average market rate of 10% with an average mortgage of \$58,900.

Multifamily: assume 150 apartment units are financed through this program at an interest rate 2% below an average market rate of 11% and a mortgage of \$4,084,306.

3.4.2 Federal Programs

- Section 8 Certificate and Housing Voucher Programs

Assume the Roseville Housing Authority receives a 5-year Housing Voucher allocation worth \$1,000,000 in subsidy every other year.

- Community Development Block Grant Program

Assume City receives an average of \$200,000 per year and allocates \$150,000 annually for housing activities.

- Section 202 Program

Assume 100-202 funded units (including the 63 unit VOA allocation) are awarded to Roseville nonprofits at an interest rate 2% below an average market rate of 11% and combined mortgages of \$4,430,159.

Assume the 202 projects receive Section 8 allocations worth \$558,130 per year sufficient to subsidize 100 units over a 20-year period.

- Section 8 Moderate Rehabilitation \$3,000,000 Program

Assume 50 units are rehabilitated and their rents subsidized through the Section 8 Program for 15 years. The Section 8 contract would be worth approximately \$200,000 per year.

3.4.3 Local and Other Programs:

- Home Improvement Account

Assume the City collects \$100 per unit on the 4,344 single family units R1-R4 projected for construction in the Specific Plan Areas over the next 20 years - \$434,400.

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Assume the City collects \$50 per unit on the 3,685 attached units R5-R9 projected for construction in the Specific Plan Areas over the next 20 years - \$184,250.

- Redevelopment

Assume the Redevelopment Agency generates an average \$1,000,000 per year in tax increment over the next 20 years netting \$200,000 per year for housing related activities.

- Federal Home Loan Bank Board-Community Investment Fund

Assume one 150 unit apartment complex is financed through this program at an interest rate 1% below an average market rate of 11% and an average mortgage of \$4,084,306.

- Savings Associations Mortgage Company (SAMCO)

Assume one 150 unit apartment complex is financed through this program at an interest rate 2% below an average market rate of 11% and an average mortgage of \$4,084,306.

3.5 Alternative Housing Programs

In addition to the programs in place at the Federal, State, and local level there is opportunity within Roseville to implement innovative housing support programs at the municipal level. These programs were identified in concept by the Affordable Housing Task Force.

3.5.1 Tax Increment Funding

One alternative housing program for Northwest Roseville is based on the significant amount of new property tax and new sales tax revenue that will accrue to the City of Roseville General Fund. The opportunity is afforded by the increases in property tax, sales tax, and utility user taxes generated by the residential and non-residential development planned within the Northwest Specific Plan Area. Such "tax increment", or growth generated funding may be allocated to a variety of public service needs in the City's annual budgeting process.

The tax increment financing method is modeled after the traditional redevelopment area approach, that is, the current tax revenue is set as a base line and the annual increase in property tax revenue, the "tax increment", is available for further improvements, including affordable housing programs. In a newly developing area the formal

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redevelopment approach is obviously not applicable; however, the concept is applicable. Newly developing areas, such as the Northwest Specific Plan, provide a base of current value that can be used to establish the increment of increased value attributable to the investment in the area. There is no prohibition against the City from establishing, as a matter of public policy, a percentage of the tax increment set aside for a specific program, such as affordable housing.

The advantages of the incremental tax finance program include:

- The program operates strictly at the discretion of the City with no outside constraints.
- The program is funded with discretionary fund; consequently, the City has the flexibility to apply the funds in innovative programs of its own design, including contributions as matching funds to other State, Federal, or private sector programs.
- The program can be modified as experience and perceived need dictates.
- The program would provide an on-going stream of revenue that can be applied systematically over a period of years, rather than as a "one shot" infusion.

Application of the Funds

A stream of revenue from the property tax can be applied to the housing affordability problem in a number of ways. The on-going source of funds provides flexibility that is not possible in other specific programs. Each of these programs would have to be fully explored to determine which would be most cost effective. The most appropriate program at any point in time may be a combination of various options.

The key program options are:

- On-going housing subsidy (voucher system);
- Public Housing projects;
- Contributions to City Fees;
- Contributions to Other City Fees;
- Matching Funds with Other Agency Programs;
- Contributions to Off-Site Improvements;
- Interest Write Down; and
- Equity Sharing.

The proposed housing program for Northwest Roseville focuses on the use of an equity sharing program option. The City would make a contribution to the financing of a dwelling unit in the form of an interest rate write down, contribution to off-site

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improvements or other funding requirement. In exchange for the contribution, the City would receive a second mortgage or other security in proportion to the percentage of the contribution relative to the total value of the unit.

The unit would be sold or rented with the provision that it be available to a qualifying low or very low income household. At the time the unit is resold, the City would recover the original investment in proportion to the increase in equity, or would continue to carry the second mortgage and provide the unit to another qualifying low income household. In this way the funds invested in the unit are ultimately recovered to be used in other housing programs, or for other City purposes.

Estimate of Funds Available

It is estimated that the Northwest Roseville Specific Plan Area will annually generate a total of \$4,219,700 in taxes at full buildout, (Ralph Andersen & Associates, Northwest Roseville Specific Plan Fiscal Impact Analysis, July, 1987). The two largest tax categories are:

Sales Tax	\$1,699,600 annually
Property Tax	\$1,506,000 annually

The combination of these two taxes will yield \$3,205,600 to the City General Fund each year. An allocation of 10 percent of these funds would yield an estimated \$320,560 for affordable housing programs annually on a continuing basis. Conventional redevelopment area plans require that 20 percent of the tax increment funding be applied to affordable housing.

It is assumed for the purpose of this analysis that the sales and property tax revenue is essentially at zero in the Plan Area. In fact, existing population in the area would account for some amount of current sales tax revenue, and the existing dwellings, as well as the unimproved ground, will account for current property tax revenue.

It is further assumed that the build out period for the Northwest Plan Area is 15 years, and that the build out will occur in approximately equal increments. Consequently, the revenues available to fund affordable housing will increase in the amount of approximately \$21,370 each year until the full build out level of \$320,560 is reached in the fifteenth year.

3.5.2 Density Bonus Program

The number of residential units assigned to specific project areas in the Specific Plan Land Use Map (Figure 7), or assigned in the 1985 General Plan Amendment may exceed the number of dwellings actually built. In such cases the "surplus" units may be reassigned to another property within the Plan Area by private agreement among property owners so long as such agreement results in land use consistent with the Specific Plan.

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In the event that a private agreement to reassign dwelling units is not consumed within three (3) years of the adoption of the approval of a use permit or final map for a residential project the City will reassign the "surplus" units to a housing unit pool. The units will then be available for a density bonus program specifically targeted to low income and very low income households.

3.6 Specific Plan Housing Policy

1. Residential development may proceed only if it is determined by the City Council that such developments are consistent with the Housing Element of the General Plan.
2. The Roseville Housing Office will notify each applicant for a residential project in the Plan Area of opportunities to participate in affordable housing programs at the time of application.
3. Each affordable applicant for residential use shall evaluate the feasibility of utilizing programs identified by the Housing Office.
4. The City shall implement a "surplus" density bonus program as outlined in Section 3.5.2 of the Specific Plan.

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4. CIRCULATION ELEMENT

The Specific Plan includes a comprehensive circulation system designed to provide a range of transportation options for safe and efficient movement of people throughout Northwest Roseville. The circulation system incorporates public streets, pedestrian paths, bikeways, parking areas, and public transit stops in conjunction with a concept of overall land use and transportation system management (TSM) methods. The circulation system is designed to achieve:

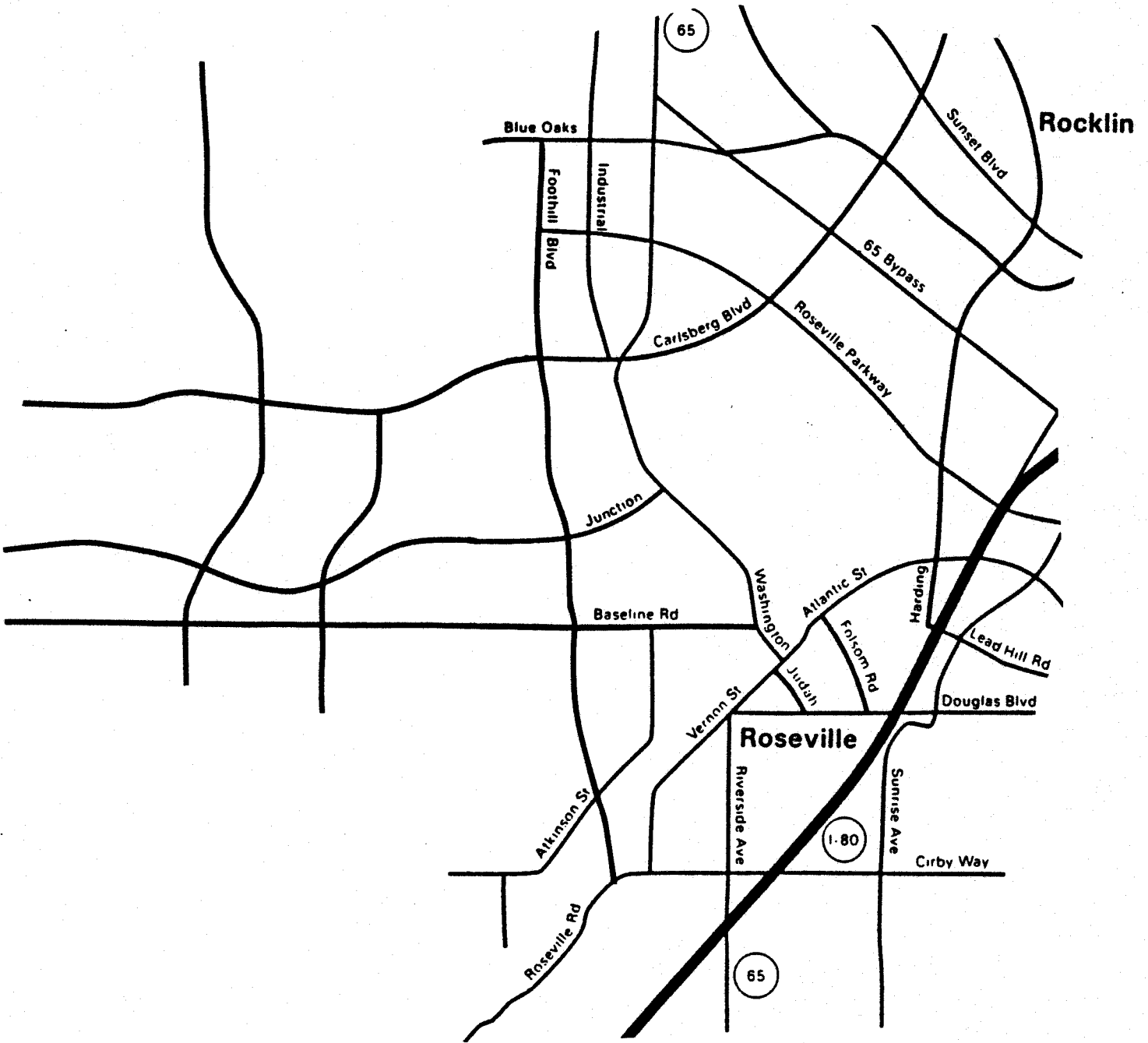
1. Safety and efficiency in circulation.
2. An aesthetic environment for public circulation.
3. Reduction in the average trip lengths for home-to-work commuting, and daily shopping and service trips.
4. Maintenance of Level of Service (LOS) "C" conditions for roadway capacities and intersections for all freeway, arterial and collector streets.
5. Minimal effect on regional air quality.

The Northwest Roseville area is linked to other portions of the City and to the Sacramento region via major arterial streets both existing and planned. These links, illustrated on Figure 10, West Roseville Circulation Network, include existing Washington Boulevard, Foothill Boulevard, Pleasant Grove Boulevard and Baseline Road. Primary access is currently via old State Route 65 (Washington Boulevard). Between the Northwest Plan Area and downtown Roseville, Washington Boulevard is a four lane arterial with a grade separated crossing of the railroad. From the terminus of Washington just east of downtown Roseville, a number of routes can be used to reach I-80, including Atlantic Street, Folsom Road, Douglas Boulevard, Vernon Street, and Riverside Avenue. Atkinson Street and the two laned Subway Road railroad undercrossing to Roseville Road and the I-80/Riverside interchange is another current route. However, the completion of the Foothill Boulevard railroad overcrossing to Roseville Road and Riverside Boulevard via Cirby Way will replace this existing route.

Baseline Road to the west connecting with Highway 70/99 in Sutter County also provides an alternate route for commuters from the Northwest Plan Area to the downtown Sacramento and Natomas business centers. This alternative can expect to receive increased use as the congestion on I-80 during peak hours increases.

Planned extensions include Pleasant Grove Boulevard to the 65 Bypass through the North Central Plan Area and Foothill Boulevard north through the North Industrial Area.

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West Roseville Circulation Network Diagram
Figure 10

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Portions of the major circulation system have already been implemented. Foothills Boulevard and Junction Boulevard to the west edge of the Silverado Oaks No. 3 subdivision are constructed and in use. In addition, the proposed extension of Foothill Boulevard from Baseline Road to Riverside Avenue via Cirby Avenue is scheduled to be completed in 1988. The Highway 65 Bypass completed in 1987 is accessible from the Blue Oaks Road intersection via Foothill Boulevard, and will be accessible from the Pleasant Grove Boulevard interchange when Pleasant Grove Boulevard is completed through the North Central Specific Plan Area.

4.1 Streets

There are three classifications of public streets in the Plan Area based on function and ultimate width: Major Arterial, Collector Street, and Local Street. The alignment of major arterial and collector streets is illustrated on the Northwest Roseville Circulation Master Plan, Figure 11. Local neighborhood streets will be designed within individual projects pursuant to the adoption of this Specific Plan and, therefore, are not designated in the Plan other than those streets already developed within the Plan area. All streets are planned and will be built to accommodate the intensity of land uses they serve, consistent with the level of development as specified in the Land Use Map.

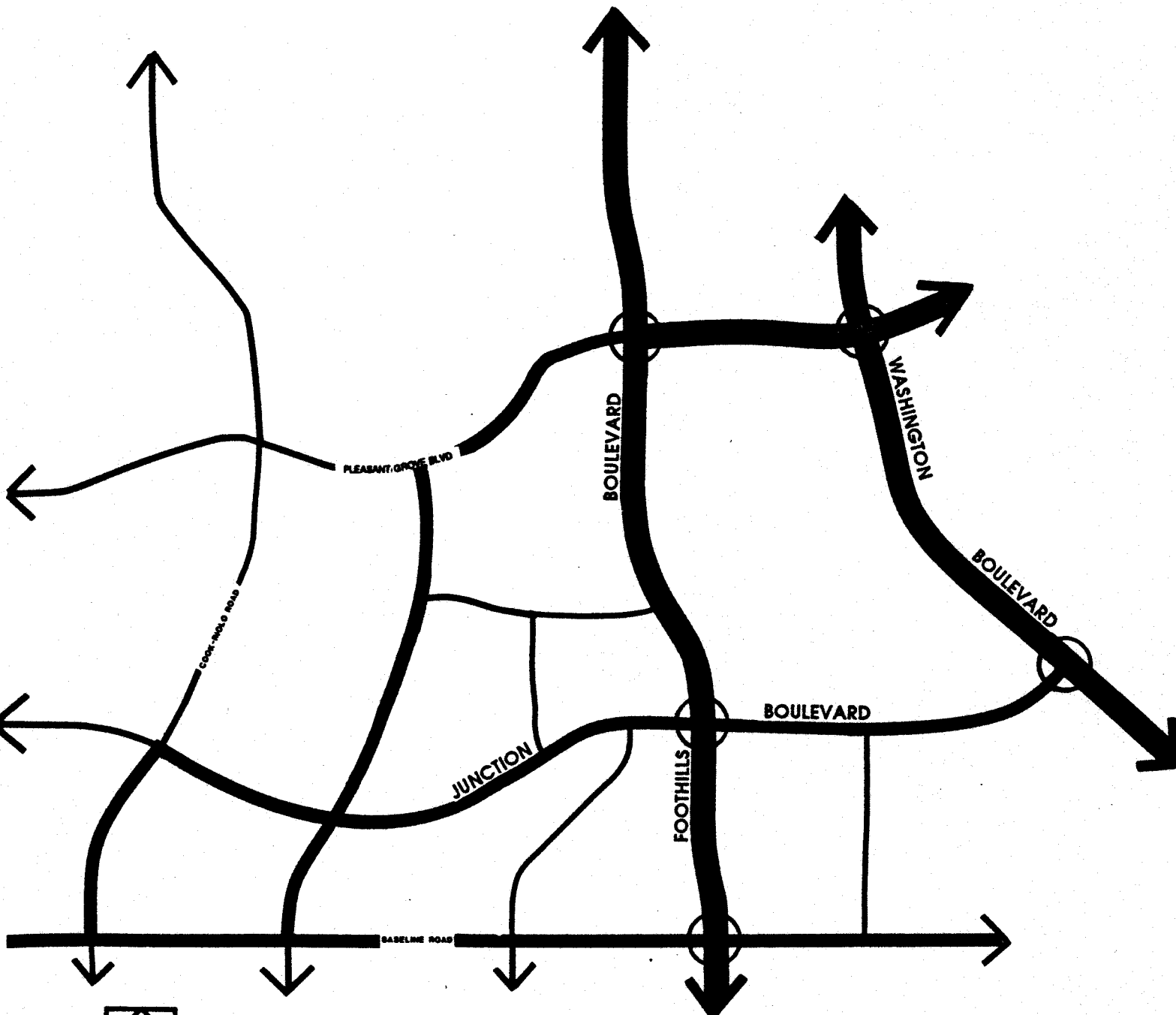
4.1.1 Major Arterial Streets





The primary function of the major arterial streets is to move large volumes of traffic through the Plan Area to other sections of the City and beyond. The majority of arterials in the Plan Area are designed with a 84-foot right-of-way that incorporates four travel lanes, bike lanes, and rolled curb and gutter. A pedestrian walkway is incorporated in the adjacent landscaped corridor. Two of the arterials are designated as six-lane arterials for at least a portion of their length within the Plan Area. These will be designated as a 100-foot right-of-way as shown in Figure 12. The specific streets and the number of lanes are summarized in Table 4.

These are to be limited access roadways with minimal cross traffic turning movements. On-street parking will not be provided along the major arterials; however, bike lanes will serve as emergency parking lanes.

Major arterial streets in the Plan Area will include landscaping in corridors along the streets. Such landscaped setback areas adjacent to major arterials are not incorporated within the public right-of-way width, but are an integral part of the designated streets. The character of these landscaped corridors is described in Section 8, the Urban Design Guidelines.

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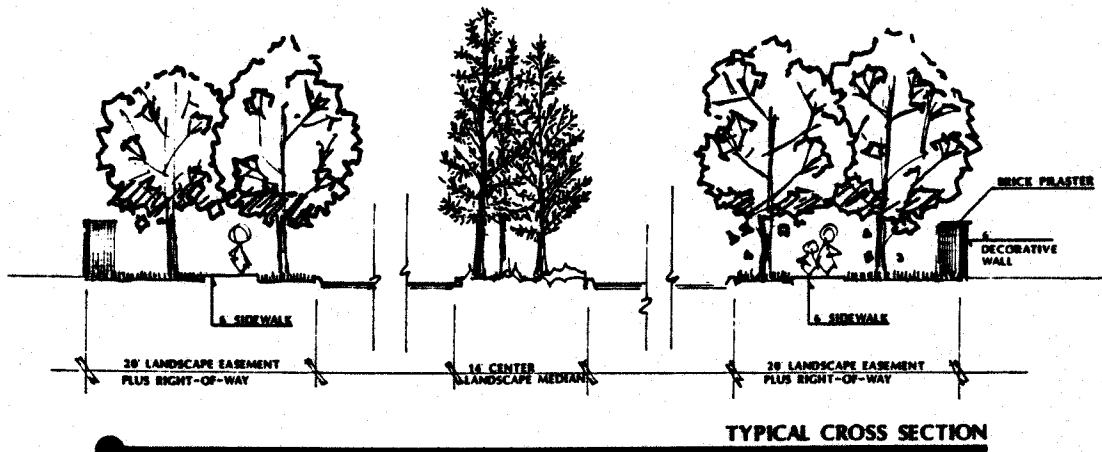
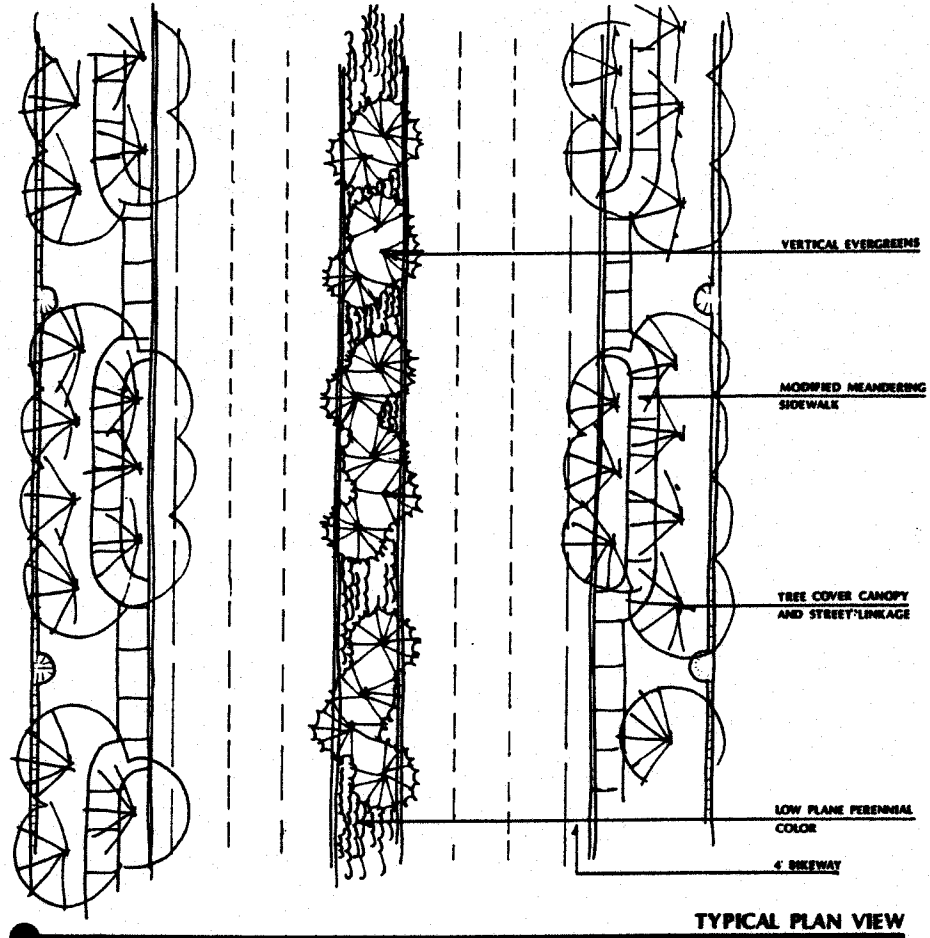


-  2 Lanes/54' ROW
-  4 Lanes/84' ROW
-  6 Lanes/100' ROW
-  Signalized Intersection



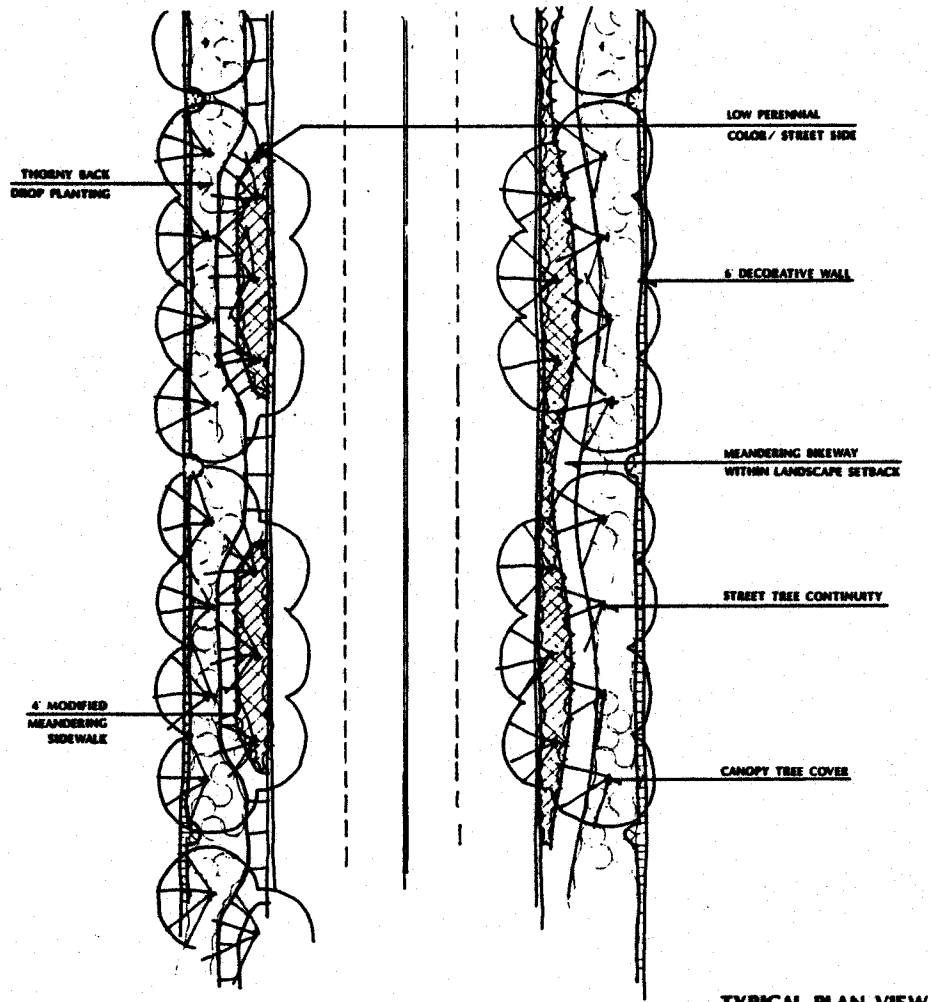
Northwest Roseville Circulation Master Plan
Figure 11

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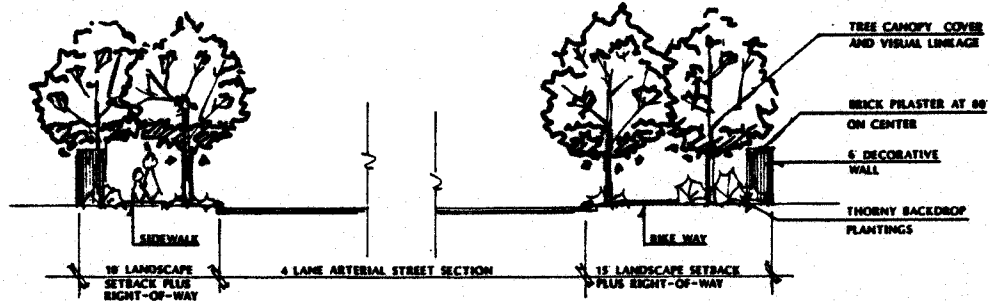


Typical 6 Lane Arterial
Figure 12

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TYPICAL PLAN VIEW



TYPICAL CROSS SECTION

Typical Collector Street
Figure 13

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4.1.2 Collector Streets.

New collector streets will be constructed to link the neighborhoods of the Plan Area to the primary arterial streets. These streets are designed with a 54 or 60-foot right-of-way that incorporates two lanes of auto traffic, bike lanes, on-street parking, rolled curb and gutter, and pedestrian sidewalks as illustrated in Figure 13.

4.1.3 Local Streets

The local streets serve to provide access to the home sites that abut them, and to provide a corridor for Class III bikeways and for the pedestrian walkways that flank them. The streets are located in the residential neighborhoods, and are purposely not designed or designated in the Specific Plan in order to provide design flexibility at the time of tentative subdivision or planned development map submittal. Design Guidelines and development policies for the street layout are specified in the Circulation Policies in this section, and in the Design Guidelines in Section 8.

Table 3
Summary of Vehicle Lanes on Major Arterial and Collector Streets

Road Link	Ultimate Lane Capacity	Nominal ROW	Landscape Corridor
Arterials			
Foothill Boulevard	6	100	50'
Pleasant Grove Boulevard (Highway 65 to Foothill Blvd)	6	100	50'
Pleasant Grove Boulevard (west of Foothill Blvd)	4	84	15'
Junction Boulevard	4	84	15'
Cook-Riolo Road	4	84	15'
Baseline Road	4	84	15'
Washington Boulevard (Baseline to Pleasant Grove)	6	100	25'
Washington Boulevard (Pleasant Grove to north)	4	84	25'
Collectors			
Country Club Drive	2	60	12'
Wakefield Way	2	54	6.5'

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4.2 Intersections

The capacity of intersections to carry traffic quickly and safely is a paramount matter of public policy in the City of Roseville. All interchanges must be capable of operating at a Level of Service (LOS) of "C", or better, as defined in the Highway Capacity Manual, 1985. This standard is achieved by a combination of the following measures:

- Land use planning that channels traffic through intersections with sufficient capacity.
- Signalization controls and appropriate design of intersections to optimize the flow of traffic.
- Use of Transportation System Management (TSM) programs, including support of public transit services.
- Construction of extraordinary improvements such as grade separated intersections, or "urban interchanges". Such improvements are not anticipated in the Northwest Specific Plan Area.

The traffic analysis (Fehr & Peers Associates, May 1988) identified three key intersections in the Northwest Specific Plan that are potentially less than LOS "C" under full buildout of all four Specific Plan Areas within Roseville, two-thirds development of all other areas in South Placer, and the equivalent of two regional mall sites in the North Central Specific Plan Area. These intersections are improved to LOS "C" or better by specific mitigations included in the Specific Plan. These intersections and the current and planned LOS capacity are summarized in Table 4.

Table 4
Key Intersections
Within the
Northwest Roseville Specific Plan Area

Intersection	Current V/C Ratio	Current LOS	Planned V/C Ratio	Planned LOS
Foothill Blvd. & Pleasant Grove Blvd.	na	na	0.70	C
Junction Blvd. & Washington Blvd.	0.38	A	0.72	C
Washington Blvd. & Pleasant Grove	na	na	0.73	C

The specific mitigation measures included in the Specific Plan to accomplish a LOS "C" is summarized as follows:

Baseline and Washington: A second northbound left turn lane is added to the normal configuration of one northbound left turn lane.

Pleasant Grove Blvd. and Washington: A second northbound left turn lane is added to

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the normal configuration of one northbound left turn lane.

Foothill Blvd. & Pleasant Grove Boulevard: Transportation system management measures implemented throughout the City will result in the reduction of trips through the intersection sufficient to achieve a LOS "C" without a grade separated intersection.

All intersections within the Plan Area benefit significantly from the implementation of TSM measures and prohibition of peak hour turns at intersections beyond the Plan Area.

4.2.1 Signalization

The major arterial streets within and adjacent to the Plan Area will require signalization of intersections in accordance with the plan depicted in Figure 11. Installation of these signals will be in accordance with the Phasing Plan described in Section 7 of this Plan, and as further specified in the Development Agreement.

4.2.2 Urban Interchanges

Traffic analysis (Fehr & Peers Associates, May 1988, page 71 et seq) indicates that under a scenario of full buildout of all four Roseville Specific Plan Areas and the equivalent of at least one regional shopping center in the North Central Plan Area, an "urban interchange" be built at the intersection of Foothill Boulevard and Pleasant Grove Boulevard (Carlsberg Boulevard). However, the traffic analysis also indicates that the urban interchange is unnecessary if the Transportation System Management measures and peak hour turning movement prohibitions are implemented. Such measures are included in this Specific Plan, and are supported by current policies and programs of the City. Consequently, the use of urban interchanges within the Specific Plan Area is not considered necessary.

The urban interchanges have the capacity to handle significantly higher volumes of traffic than conventional on-grade, signalized intersections; however, the bridge structure makes them relatively expensive, and the right-of-way requirement is approximately 20 feet greater on each side of the roadway than would otherwise be required for a major intersection. Anticipated development adjacent to the intersection of Pleasant Grove Boulevard and Foothill Boulevard would make the construction of an urban interchange undesirable.

The levels of traffic that would generate the need for such an interchange is projected to be beyond a two-thirds buildout of the Northwest Plan and is contingent on the levels of development in other portions of the South Placer region, and northern Sacramento County. Consequently, the actual need for urban interchanges will not be fully realized for several years in the future. At the time of preparation of this Specific Plan a substantial amount of the projection of traffic need is based on increases in employment well beyond the levels allocated to the South Placer region in any of the regional

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employment share analyses prepared to date. Consequently, the traffic impact projections and the need for urban interchange structures is based on a conservative, "worst-case" approach.

The need for urban interchanges, if they are ever actually required, is addressed in this Specific Plan by providing adequate right-of-way to accommodate the future structures, and by incorporating policies that will result in monitoring of traffic, housing, and employment conditions. The traffic monitoring program is discussed in Section 4.6, Traffic Monitoring Program. Through these methods, the need for urban interchanges will be recognized in sufficient time to construct them before a serious deterioration of traffic service occurs.

4.3 Bikeways/Pedestrian Pathways

The Plan Area includes a system of bikeways and pedestrian pathways for recreation, commuting and other non-recreational purposes. The system consists of three key elements organized in a connected hierarchy of pathways designed to take a resident from their front door to an inter-city network.

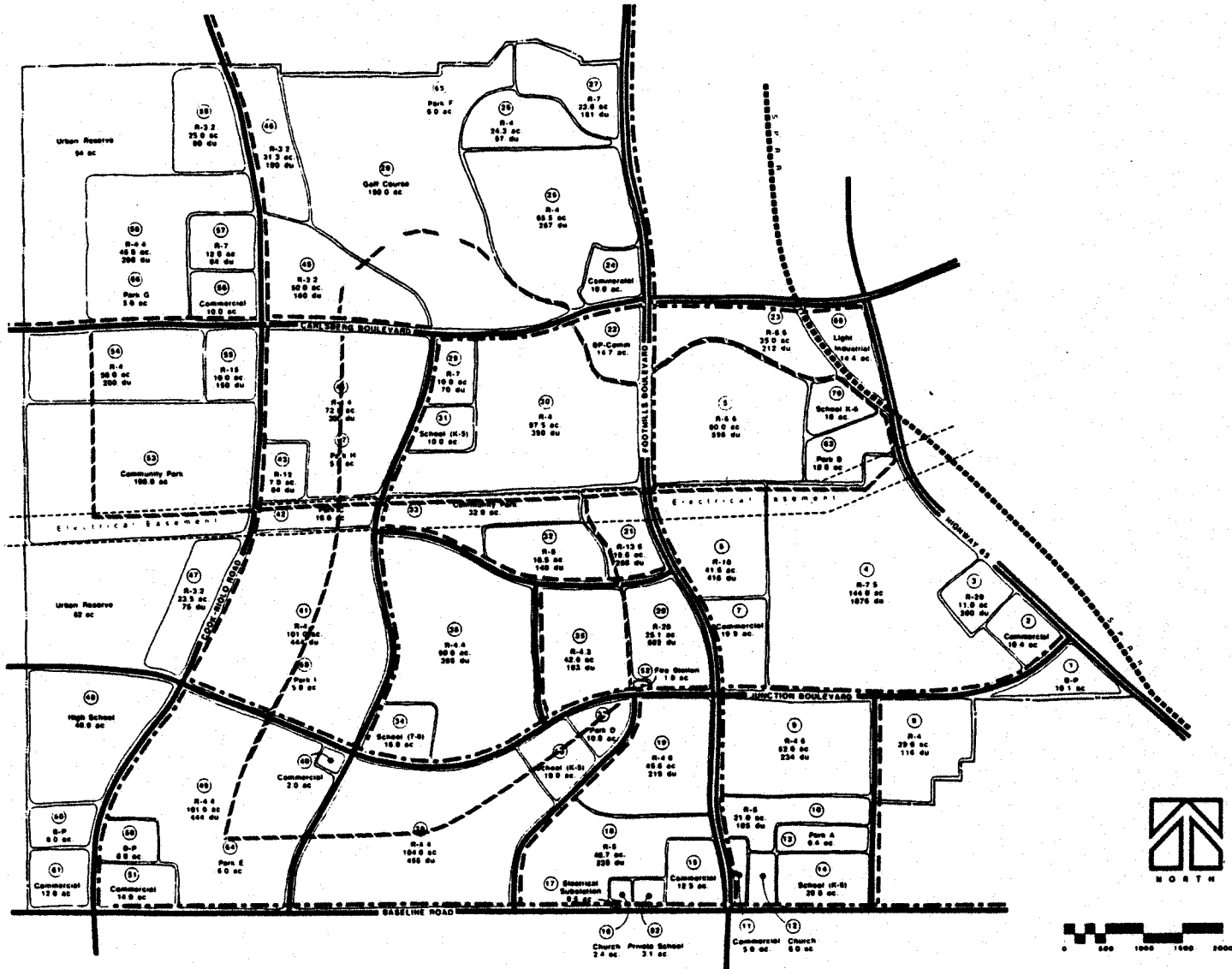
Cycling for shopping and home-to-work commuting is also supported by provisions of the City's Transportation System Management (TSM) Ordinance, which requires secure and adequate bicycle parking facilities in all commercial and business-professional projects. In addition, the TSM Ordinance also provides for bike lockers and showers at employment locations as one means of complying with the ordinance trip reduction requirements.

4.3.1 The Primary or "Backbone" Network

The primary system consists of two key components, the Class 1 bike paths along major arterials, and Class 1 bike paths through the power line easement corridor and along the floodway of Pleasant Grove Creek. The components form a network that allows a cyclist or pedestrian to travel east and west, north and south through the Plan Area along a separate trail system with only minimal street/pathway intersections. Access to a bike path system within the Plan Area is excellent. A cyclist need travel not more than a few blocks within a residential neighborhood before connecting with a designated bike path that will connect to other areas throughout the City.

Major arterial streets that provide a Class 1 bike path include Foothill Boulevard, Pleasant Grove Boulevard, Cook-Riolo Road, Junction Boulevard, west of Americana Drive and Baseline Road. The Class 1 bike paths consist of a meandering paved, 8-foot wide-path, totally separated from the street edge by landscaping within the landscaped corridor as illustrated in Figure 12. The bikeways are intended to provide a safe and convenient route for commuting cyclists at a reasonable speed. Consequently, the alignment of the route should not vary so greatly that the safe movement of cycle traffic is inhibited.

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- Class 2 Bikeway
- Class 2 Bikeway & Pedestrian Walkway
- Class 1 & Class 3 Bikeway & Pedestrian Walkway
- Alternate Route

THIS MAP HAS BEEN FORMALLY SUBMITTED FOR APPROVAL BY THE CITY OF ROSEVILLE

WADE ASSOCIATES
PLANNING - DESIGN - ECONOMICS

Bikeway Master Plan
Figure 14

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The backbone network will connect to the City wide bicycle network on Washington Boulevard south of Junction Boulevard, and on Pleasant Grove Boulevard. The backbone bicycle/pedestrian system is illustrated in the Bikeway Master Plan, Figure 14.

4.3.2 The Secondary or Collector Path System

The Class 2 bike lane system extends throughout the Plan Area within the right-of-way of collector streets and arterials, as illustrated in Figure 12 and 13. The bike lanes will be seven feet wide, located adjacent to the travel lanes and marked by signage and a stripe on the pavement demarking the edge of the lane. A Class 2 bike lane will be provided on one side of all collector streets. Additional connecting off-street paths are encouraged within residential projects.

4.3.3 Tertiary Bikeway System

All local streets within the residential neighborhoods will serve as Class III, on-street bikeways. The land use policies specify a land use pattern that facilitates access from the interim of neighborhoods to the secondary and primary bikeway system. The neighborhoods are also to be designed to restrict through vehicular traffic thereby making the street safer for cyclists.

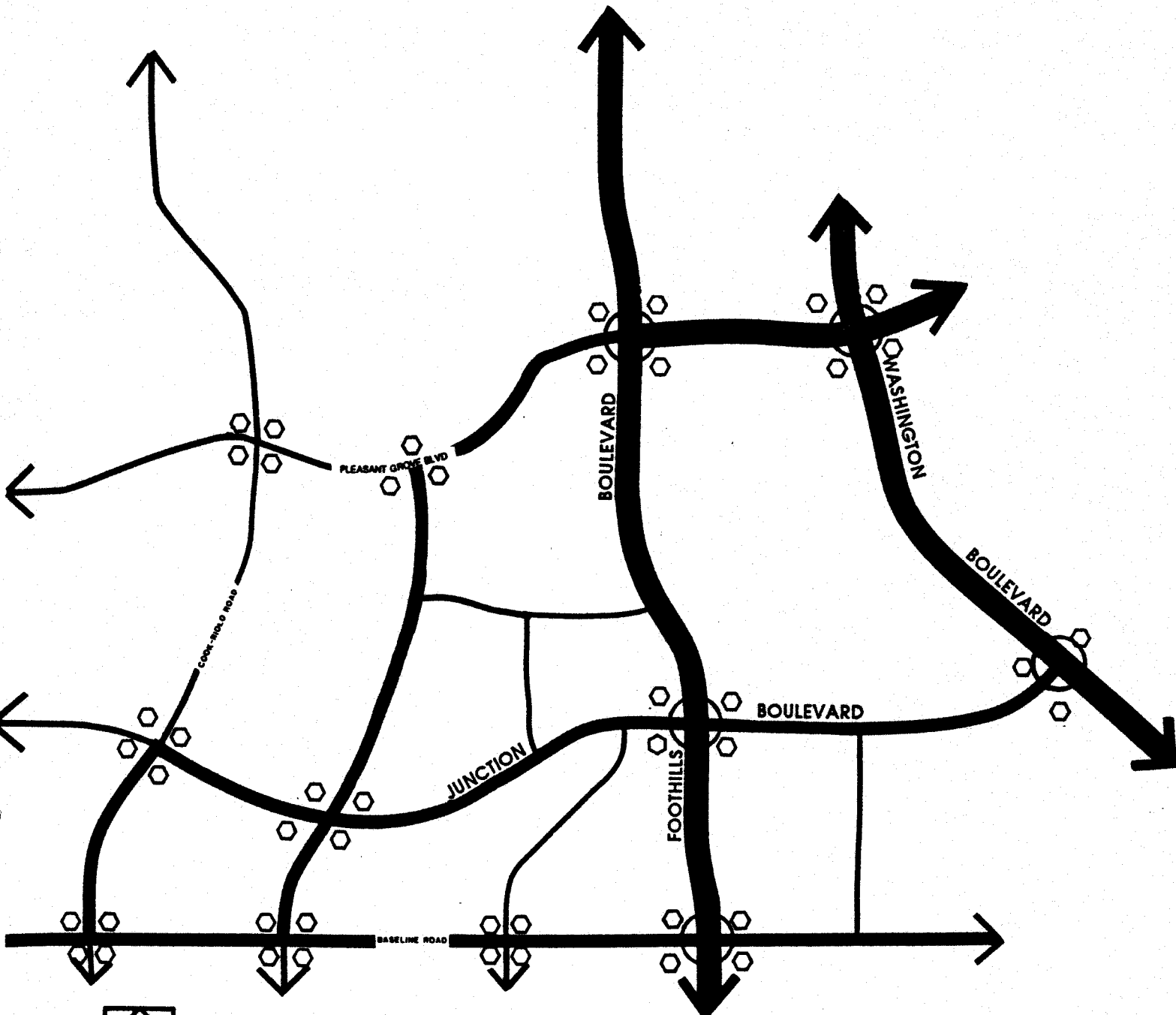
4.4 Public Transit




Bus service is the only form of public transit anticipated within the Northwest Specific Plan Area within a twenty year horizon. Bus turnouts will be provided at major intersection locations along the arterial streets system as indicated in Figure 15 to accommodate future bus service in the Plan Area. Due to the extent of arterial streets through the Plan Area no residence within the area will be more than 1500 feet from a bus stop. This level of service will facilitate ease of access which encourages high levels of ridership.



The City of Roseville is currently served by three public transit systems. The Regional Transit system provides commuter bus service between Roseville and points throughout the Sacramento region. Roseville Urban Shuttle (RUSH) provides regularly scheduled route service within the City, and Roseville Area Dial-A-Ride (RADAR), provides on-call service throughout the City. The RUSH and RADAR systems will be expanded to the Plan Area as demand for these services occurs.

Although no other form of mass transit is anticipated, it should be noted that the wide landscaped corridors along Foothill Boulevard could potentially accommodate alternative systems, such as light rail. In addition, the Southern Pacific rail line that runs adjacent to the Specific Plan on the east has the potential to provide a route for heavy rail commuter passenger service. The existence of an Amtrak passenger station in Roseville reinforces this potential by providing an immediately available passenger

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-  2 Lanes/54' ROW
-  4 Lanes/84' ROW
-  6 Lanes/100' ROW

-  Signalized Intersection
-  Bus Turnout Locations

Bus Turnout Locations
Figure 15



Proponent Draft

service. The Amtrak station is near the Northwest Plan Area, and it is conceivable that a passenger rail service from Roseville to downtown Sacramento could be instituted.

4.5 Transportation System Management

Traffic impacts on Roseville streets can be reduced through TSM measures which encourage employees to rideshare and travel at times outside of the normal peak travel periods. Based on research conducted by Caltrans, the Institute of Transportation Engineers, and Fehr & Peers Associates, the traffic reductions which can reasonably be realized by these programs are as follows:

Table 5
Estimate of TSM Effectiveness

Type of Employment	Peak Hour Trip Reduction		
	Ridesharing	Flex Time	Total
Business-Professional	7%	4%	11%
Industrial (General or Light)	7%	9%	16%

Fehr & Peers Associates, May, 1988

Traffic estimates based on trip generation rates for business-professional land uses in the Northwest Specific Plan Area were reduced according to this estimate of effectiveness.

The City of Roseville adopted an ordinance to support TSM in February, 1983. The ordinance is directed to reducing the number and length of home-to-work commuting trips through a variety of methods. The predominant method is private ridesharing programs through the place of employment. Employers are required to participate in the Sacramento Rideshare Program sponsored by the Department of Transportation, or a locally sponsored, comparable program. Roseville has jointly sponsored a part-time transportation coordinator position in conjunction with the other jurisdictions in the South Placer region each year since adoption of the ordinance.

The City of Roseville participates in a joint program with the other jurisdictions in the South Placer region to monitor the rate of housing and job development, and traffic impacts. The information generated by each jurisdiction is compiled on an annual basis and shared with the other jurisdictions.

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All new development within the Northwest Plan Area is subject to the provisions of the City TSM Ordinance, however, the provisions of the ordinance as of May, 1988 are primarily intended for large employment activities. Within the Northwest Plan Area the employment centers are relatively small compared to the major employment centers located in North Roseville, and in other portions of South Placer County. The opportunities to implement conventional Transportation Systems Management Programs are more limited in a predominantly residential area than they may be in areas of concentrated employment. Consequently, the TSM measures in the Northwest Plan focus on the small steps that can be implemented there. TSM in the Plan Area will include:

- incorporating park and ride areas within the commercial parking lots,
- provision of secure bike parking at shopping areas.,
- provision of bike and pedestrian routes,
- bus turnouts, and
- participation in rideshare and other transit information distribution programs that may be offered by the City of Roseville.

4.6 Traffic Monitoring Program

The Northwest Specific Plan contemplates the development of a major transportation system over a period of a few years. Most of the basic circulation infrastructure will be constructed at one time under a single funding program; however, expansion of the system for additional lanes or improved intersections may occur as the traffic levels increase. Changes in traffic demand brought about by new types of vehicles, changes in lifestyle, improved public transportation, and the cost of private transportation, may all have an effect on traffic patterns over time. Furthermore, the improvements that may be required in the future would be prohibitively expensive to build until the need is actually demonstrated. Consequently, the City will implement through the Public Works Department a program of monitoring traffic conditions over time.

Traffic monitoring will be used to detect changes in traffic patterns that are approaching Level of Service "C" for intersections throughout the City (as defined in the 1985 edition of the Highway Traffic Manual). The Roseville Public Works Department will monitor key locations through a combination of site traffic counts, and techniques of modeling the effects of cumulative growth attributable to approved development projects. The Public Works Department will maintain a list of traffic projects to be funded in a five-year capital improvements program. The program will be updated on an annual basis and new projects added to the five-year program as LOS C is approached in specific locations. The monitoring program will be conducted on a City-wide basis and funding of the specific improvements will come from a combination of city-wide traffic mitigation and development fees, conditions in various development agreements, assessment districts, and other sources.

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4.7 Specific Plan Circulation Policies

4.7.1 Street System Design and Layout

1. Local streets shall be designed in a manner which is compatible with the proposed collector and major arterial street system. Intersections of collector streets with major arterial streets shall be kept to a minimum.
2. Collector streets should not intersect with a major arterial street closer than 600 feet from an intersection formed by two arterial streets, or closer than 300 feet from another collector/arterial intersection.
3. Local streets shall not intersect collector streets closer than 150 feet from intersections of collectors and arterials.
4. Access along major arterials shall be limited to points approved by the Public Works Director.
5. Local streets within neighborhoods shall be designed to discourage through traffic.
6. Streets shall conform to natural topography to the maximum extent possible.
7. Parking on all arterial streets is prohibited by posting.
8. Parking along collector streets will be discouraged throughout the Plan Area and will be prohibited by signage in selected locations.
9. Transformer and switching boxes shall be not less than fifty (50) feet from the point of tangent at all intersections on arterials and collector streets, and not less than eight (8) feet from the back of curb.

4.7.2 Bikeways and Pedestrian Paths

1. Class 1 bikeways within the landscaped corridors shall be designed to allow safe and convenient bicycling by commuters. Class 1 bikeways shall be a minimum of eight (8) feet wide, and shall not meander more than the distance of its width over a 100-foot run.
2. On-street, Class II bikeways shall be provided on collector and arterial streets.
3. Pedestrian paths and bikeways within easements shall be designed to minimize intrusion upon private property.
4. Pedestrian paths shall be located away from the street pavement where feasible to create a landscaped environment separate from the traveled right-of-way.

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5. Whenever possible, pedestrian paths within street landscape corridors shall meander relative to the street curb. Landscaping and grade changes shall be employed as a means of separating pedestrian paths from streets.
6. Bike paths doubling as pedestrian walks should be 8' wide minimum.
7. Routes should be carefully chosen along natural grades to protect native vegetation and reduce grading.
8. Separation of the cyclist/pedestrian from the automobile should occur whenever possible. Frequent connections from adjoining land use to the backbone bikeway system should be encouraged.

4.7.3 Public Transit

1. Alternatives to the automobile as the means of transportation shall be encouraged. Public transportation services, such as those provided by Placer Mini-bus and by Roseville Area Dial-A-Ride (RADAR), shall be accommodated in the arterial and local collector street system
2. The Roseville Urban Shuttle (RUSH) service area should be expanded to the Plan Area as development occurs within the area, as demand warrants.
3. The Roseville Area Dial-A-Ride (RADAR) shall be available in the Plan Area concurrent with demand for service.
4. Bus turnouts and shelters shall be located consistent with City Improvement Standards and as approved by the Public Works Director at the time of roadway installation.

4.7.4 Transportation System Management

1. Traffic conditions will be monitored periodically by the City Public Works Department in the Northwest Plan Area at intersections and on the major arterial linkages traversing the Plan Area. As an intersection approaches Level of Service C, as determined by site observation, traffic counts, or modeling of cumulative growth conditions, the improvements required to maintain LOS C shall be identified for funding in the City-wide five year traffic system improvements program. Level of Service C shall mean a measure of delay at an intersection as defined in the 1985 edition of the Highway Capacity Manual. For planning and evaluation purposes the LOS C is assumed to be equivalent to a vehicle/capacity ratio of .80.
2. Major employers shall be required to participate in the Transportation System Management program as provided pursuant to the TSM Ordinance of the City of Roseville.

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3. Employment conditions and housing opportunity in the Southeast Plan Area will be monitored on an annual basis by the City of Roseville in the annual employee survey and in the annual housing monitoring program conducted by the City Planning Department.

4. Applications for a conditional use permit for business-professional land use shall include information on the expected level of employee density in the proposed project. The project shall meet the conditions set forth in Policy 16 in the Land Use Element of this Specific Plan.

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5 □ OPEN SPACE AND RESOURCES MANAGEMENT ELEMENT

The Northwest Specific Plan Area encompasses gently rolling terrain, oak woodlands, vernal pools, and a riparian area along the South Branch of Pleasant Grove Creek. These natural features have very high visual amenity and are important resources for the entire community. Human habitation will invariably modify the natural environment, but standards that define the care taken in placing and constructing urban land uses, and judicious use of open space designations can result in a community that retains and incorporates the essential character of the natural environment.

Human habitation also places demands on community resources, such as potable water, and an increased burden on other community or regional resources, such as the air basin and the available energy supply. It is the purpose of this Element of the Specific Plan to address the conservation and management of both the natural resources and amenities within the Plan Area boundary, and the regional and community-wide resources that support urban development.

The Northwest Roseville Specific Plan is designed to conserve natural resources and mitigate to the extent possible the impacts associated with development in the Plan Area. In most instances resource management policies have been incorporated in various elements of the Plan. The redundancy provided in this element of the Plan, therefore, serves to clarify and underscore the importance of resource management.

The resources addressed in this Element include:

- Open Space
 - Drainageways
 - Golf Course
 - School Playfields
 - Power Line Easements
 - Parks and Nature Study Areas
- Vernal Pools
- Oak Woodlands
- Soils
- Water Quality
- Potable Water
- Air Quality
- Energy
- Historic and Cultural

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Resource management issues tend to encompass multiple objectives and an approach to one issue often benefits other concerns. In this Specific Plan the land use, circulation system, open space, recreation and other public facilities all support the complex objectives of maintaining natural amenities in an urban setting, and of minimizing negative effects on air quality, water quality, energy demand, and the natural and historic resources in the area.

In the following sections each of the resource categories are described and the concept for their use and protection is discussed. These sections are followed by more detailed policies of the conclusion of this element.

5.1 Open Space

Open space is an important land use in the Plan Area which accommodates both active and passive recreation needs, provides visual relief, and defines the boundary of the developed areas. Open space has an inherent value as a visual resource, but also serves to conserve and protect certain other resources, or facilitate other needs within the community. The Open Space and Resource Management Element establishes policies for the protection of trees and vernal pools, and major reduction of erosion. These policies are generally applicable to all development within the Plan Area, in addition to those areas specifically designated as open space.

The Plan Area includes four primary components of open space intended to provide for certain forms of recreation in addition to improving the immediate environment of nearby residents. Primary open space includes the municipal golf course, parkland and public school playfields, drainageways and a powerline easement. Linear parkways, pedestrian connectors within neighborhoods, and the landscape corridor along major arterials provide a secondary form of open space.

In total, over 492 acres within the Plan Area will be left in open space, or limited development areas exclusive of those areas designated as Urban Reserve, but including the area under the power line easement not included in other open space categories. This equates to approximately 18.4 percent of the total land area within the Plan Area, and provides for nearly 25.5 acres of open space land per 1,000 people within the Plan Area. Open space area is summarized by category in Table 6.

Parkland and schools within the Plan Area are specifically described in the Public Facilities and Services Element. The other elements of open space within the Plan are described in the subsections which follow.

The largest categories of open space in the Plan Area are natural stream courses, the municipal golf course, landscaped corridors along arterial and collector streets, and open space within the powerline easement. Less extensive, but equally important, forms of open space are provided by parks, school playfields, common open areas within the various residential villages, and open space easement areas on individual lots.

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Table 6
Summary of Open Space Area by Category

<u>Open Space Use</u>	<u>Acres</u>
Municipal Golf Course	174.0
City wide Park	58.8
Park Reserve	30.0
Neighborhood/Community Parks	76.0
Schools (K-6)	42.0
School (7-8)	18.0
High School	42.0
Floodway	28.5
Powerline Easement	65.0
	====
Total Open Space Area	492.3

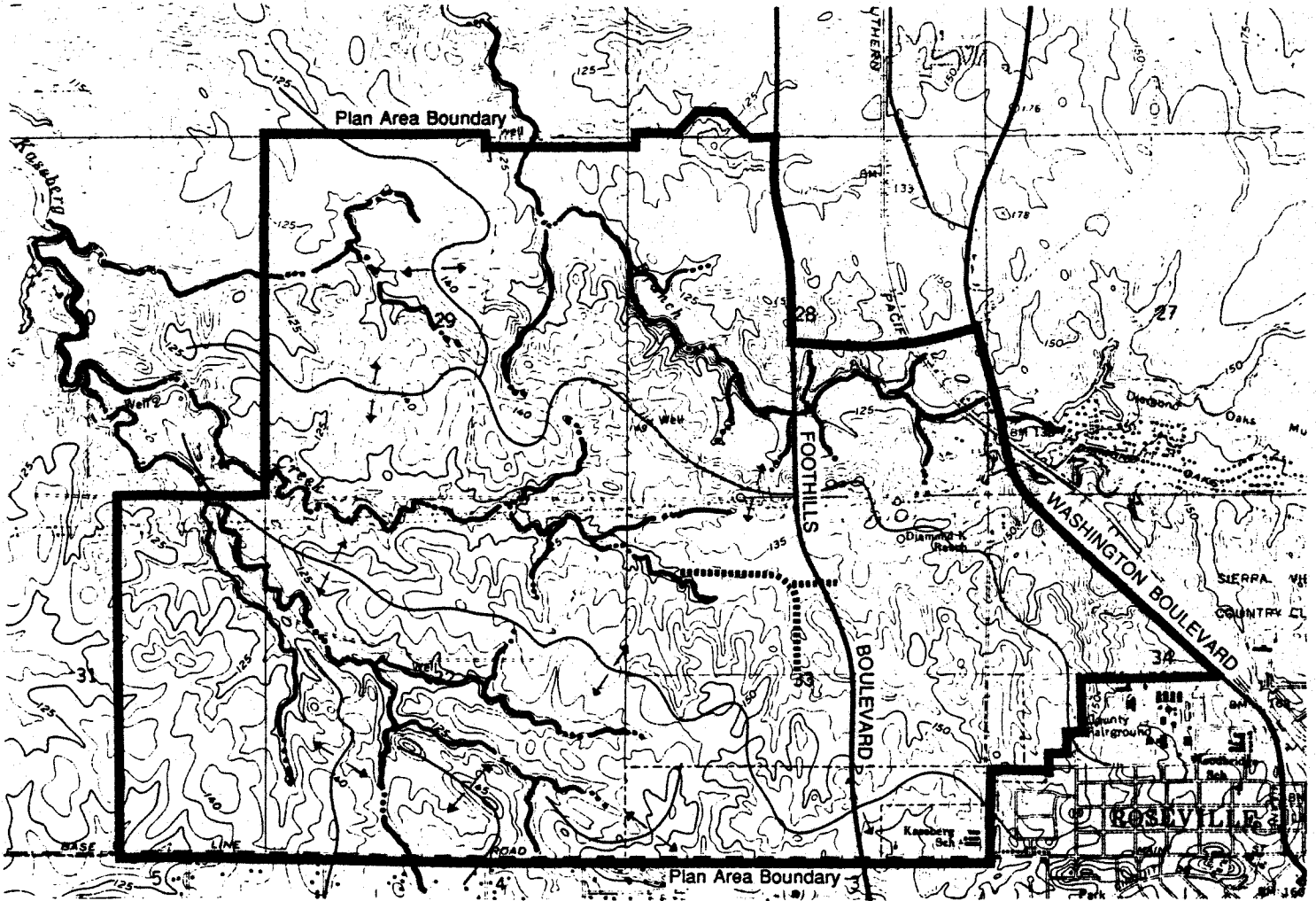
The linear open space areas will be a dominant feature of the urban setting in the Plan Area when it is fully developed. The drainage courses and power line easement will establish a strong perception of the separation of urban areas from one another, and the inclusion of a prevalent natural environment within the Plan. The open space plays an important role, along with the arterial streets, in defining the bounds of the residential neighborhoods, a primary feature of the Northwest Specific Plan land use pattern.

Drainage Courses

As described in Section 6, the Public Facilities and Services Element, major storm drainage conveyance will be by means of open, natural stream courses in the South Branch of Pleasant Grove Creek and in the unnamed channel under the powerline easement. These stream courses will constitute a form of linear open space suitable for passive recreation activities such as hiking and bicycling, as further described in the Circulation Element of this Plan.

The natural drainage channels in the Northwest Plan Area flow north and west to join the main channel of Pleasant Grove Creek approximately three miles beyond the Plan Area boundary. The projected 100-year floodplain for the Pleasant Grove Creek drainage is identified in the Supplemental Floodplain Study, (Nolte and Associates, 1986) and illustrated on the Primary Drainage Courses, Figure 16. The other drainages within the Plan Area were considered minor, and were not mapped in the Nolte study. The flood plains associated with these drainage courses will serve to protect areas of riparian habitat and some adjacent oak woodland. Minor channel modifications may be required in some limited areas; however, the intent is to provide for efficient movement of storm drainage in natural channels.

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THIS MAP HAS BEEN FORMALLY
SUBMITTED FOR APPROVAL BY
THE CITY OF HOESVILLE

- ← → Direction of Surface Drainage
- ~~~~~ Summit Line
- Natural Drainage Course
- - - - - Existing Storm Drain



WADE ASSOCIATES
PLANNING ENGINEERS ARCHITECTS

Primary Drainage Courses
Figure 16

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The City of Roseville has identified a strategy for managing storm water flows from the various watersheds that funnel through the City. In part, this strategy involves passing the storm waters of the Pleasant Grove Creek drainage through quickly. The lands in the Northwest Plan Area are not part of the Dry Creek watershed; however, slowing of natural runoff on the west side of the City in this drainage area would potentially cause a backwater effect in the city center as floodwaters reach their peak. Consequently, no delay or retention of storm waters is recommended in this watershed, and no stormwater retention facilities are planned within the Specific Plan area.

The floodplain and drainage courses are protected in two ways. A significant portion of the Pleasant Grove Creek drainage is dedicated to the City for recreation access. The floodway creates a greenbelt buffer which is sufficiently wide to accommodate pedestrian paths and bikeways. Approximately 17 acres are designated as floodway with recreational use.

That portion of the drainage between Foothill Boulevard and Pleasant Grove Boulevard will be within a floodway maintenance easement granted to the City. These open space corridors will be retained in private ownership and incorporated into the site design of adjoining uses. Consideration of public use will be subject to future discussion of the City and the property owners.

Additional information relative to storm drainage is contained in the Public Facilities and Services Element.

Golf Course

The 174 acre municipal golf course located at along Pleasant Grove Creek is a significant element of open space for the City residents who utilize the course, for passersby along the major roads that flank the course, and for the residential neighborhoods bordering it. Residential developments abutting the golf course will be designed to be incorporated with the golf course design.

School Playfields

A total of 101.1 acres of land are designated for school sites. Each school site will include turf and hard-surface areas which will constitute an element of open space within the Plan Area. While intended primarily for use by school children, non-school time use by surrounding residents is anticipated. In addition to providing space for recreation, school sites contribute a sense of openness in areas of higher residential density. The schools in the Plan are adjacent to City parks that will accommodate joint City and school district use of recreation facilities.

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Powerline Easement

A powerline easement 375 feet in width transects the entire Plan Area from east to west for a distance of 11,500 feet, or a little more than two miles. Development is precluded from this area, resulting in a greenbelt nearly 100 acres in size. Portions will be incorporated into the individual project site design, as parking areas, private recreation areas, or as common open space within multi-family residential developments.

The easement will include a pedestrian/bike path intended to facilitate off-street travel within the Plan Area. The pedestrian/bikeway will be incorporated in a linear parkway of varying width, but not more than 150 feet wide, which will be developed to connect the designated parks with the bikeways along arterial corridors designated in the Circulation Element. (See Figure 14, Bikeway Master Plan).

The easement also serves to accommodate a natural drainage course in the west end of the Plan Area. The drainage is incorporated in a designated park and will not require channelization to continue to perform as a storm drainage channel.

Much of the powerline easement will be utilized for private recreation. This includes a private racquet club located on 12 acres within the easement just west of Country Club Drive. There is no public access to the private land in the powerline easement except in those areas designated for parking in public areas, such as the business-professional office uses.

Acquisition by the City of portions of the powerline easement for public access use is anticipated only for parking areas, tennis courts and similar uses in conjunction with the development of City parks.

Parks and Nature Study Areas

The Specific Plan includes a total of seven parks and designated nature study or preserve areas in 161 acres. These include native oak woodlands and grasslands encompassing a vernal pool preserve area that will be left in nearly the existing condition.

Landscape Corridors

In addition to the natural open space retained in various forms throughout the Plan Area are the landscaped corridors that flank the major boulevards and arterial streets within the Plan. Although these corridors will be formally landscaped, they will add to the sense of openness and the visual amenity that will be characteristic of the fully developed Plan. The corridors will provide setback buffers along the major streets of 15 to 50 feet that incorporate a maintained landscape of trees and ground covers. In addition, the corridors will include pedestrian/bikeways that link the schools, parks and other open space features, and provide for alternative circulation throughout the Plan Area.

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5.1.1 Open Space Management Policies

1. Open space areas shall be incorporated into all multi-family projects and commercial projects.
2. Special areas of riparian or other botanical habitat shall be preserved by incorporating the open space into specific project designs or by dedications of open space.
3. Whenever possible, the City shall utilize parks, drainageways and utility easements in a comprehensive trail system.
4. No habitable structures other than those necessary to accommodate and/or promote the agricultural and open space use of the urban reserve shall be permitted.
5. Street and other public infrastructure improvements shall be sited so as to minimize intrusion upon open areas, particularly stream courses.
6. Open spaces shall be visually and physically linked to the maximum extent possible.
7. The powerline easement area may be developed with private recreation facilities, plant nurseries, landscape corridors, parking area or on-site landscaping, or other similar uses.
8. Commercial, business-professional and planned development residential projects adjacent to open space shall, where feasible, merge the adjacent open space into the site design to avoid creation of distinct boundaries.
9. Development within the 100-year floodplain shall be prohibited through one or more of the following measures:
 - a. The City may acquire an irrevocable offer to grant a conservation and floodway easement for the area within the 100 year floodplain and riparian habitat as permanent open space.
 - b. The City may acquire title to the floodway, or to drainage, floodway maintenance, or access easements over such lands.
 - c. The City will specifically prohibit construction of habitable structures, fill which would cause an increase in the up and downstream (off plan site) flood surface elevation, and structures intended to dam the flow of water.

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10. Street and other public infrastructure improvements required within the floodplain and riparian habitat shall be designed and sited to minimize the impact on the natural environment. This will be achieved by observing the following guidelines:

- a. Minimize the number of trees removed.
- b. Promptly revegetate cleared areas with native species.
- c. Place foot and bike paths/trails so that snags and trees favored by raptors are avoided.
- d. Locate creek crossings and sewer interceptors so that they minimize intrusion into riparian vegetation areas.
- e. Minimize the number of paths/trails.
- f. Design all stream crossings to permit movement of wildlife beneath them.
- g. Design all stream crossings for 100-year event.
- h. Design stream crossings such that approaches are as close to a right angle as possible.
- j. Require specific erosion and sediment control plans for all construction activity.
- k. Limit construction activities in channel to the summer, low-flow period.
- l. Require input from biologists when designing any improvements/structures intended to occur or be developed within areas identified in the project EIR as riparian habitat areas.

5.2 Vernal Pool Preserves

Vernal pools are naturally occurring depressions in soils containing a hardpan or other impermeable layer. The depression retains rainwater or surface drainage longer than the adjacent ground surface and consequently, the pools support rare and unusual fauna and flora in the spring as the accumulated water evaporates.

The Northwest Specific Plan Area contains approximately 321 vernal pools. Vernal pools are most abundant in the northeast quadrant of the Plan Area, north of the electricity transmission line corridor and east of Foothills Boulevard. Pool density is generally greatest in a wide band of about 3,000 feet that crosses the Plan Area east to

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west through its midsection. The general location of the vernal pools is illustrated in Figure 6, the Vegetation Habitat Diagram.

Bogg's Lake hedge hyssop (listed by the state as endangered) and dwarf downingia and vernal pool brodiaea (both on the California Native Plant Society List 4) occur in the Plan Area. Bogg's Lake hedge hyssop occurs in one pool and dwarf downingia occurs in three pools, including the one with the hedge hyssop. One vernal pool brodiaea was found in the annual grassland. Although suitable habitat is present for the tiger salamander, it is not present. (Stromberg, July, 1987).

The Specific Plan incorporates two methods of reducing the impact of development in the vicinity of the vernal pools. Avoidance (mitigation) is to be accomplished by establishing two vernal pool preserve areas within which no existing pools would be disturbed. Partial restoration of values lost due to the destruction of pools not preserved (compensation) is to be accomplished by enhancing poor-quality pools and creating new pools in the preserves.

Two areas containing vernal pools will be left intact and undisturbed in natural annual grassland surroundings. The limits of these areas are set so that they will include several sites at which new pools may be created, and so that each preserve is large enough to contain a sufficient hydrologic buffer area.

The larger area is located at the extreme south end of the golf course, just north of Pleasant Grove Boulevard. The Golf Course Preserve pools include the very high quality pool that contains both dwarf downingia (*Downingia humilis*) and the state listed Bogg's Lake hedge hyssop (*Gratiola heterosepala*). The golf course design has been adjusted to accommodate approximately 14 acres encompassing 25 existing vernal pools. Tees, greens, fairway, and other managed features could be constructed around the preserve as long as the potentially adverse impacts of irrigation, runoff, and the application of chemical fertilizers are avoided.

A second area of approximately 5 acres will be located in a neighborhood park immediately south of Pleasant Grove Boulevard and east of Country Club Drive. The park preserve will contain four pools, including one extremely large, apparently man-made pool at the south end of the park and three shallow "satellite" pools.

Several existing pools will be enhanced and others created in each preserve to produce added vernal pool values without adversely affecting the hydrology of the existing pools. In some cases, enhancement would involve only introducing seed collected from pools to be destroyed. Not all pools require seeding but could benefit from it. Some are poor quality pools deep enough to provide sufficiently long inundation but lack a well developed pool flora. Others are shallow pools which could be improved by increasing their depth and/or their outlet elevations, thereby increasing the depth and duration of

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inundation. These pools would be seeded to accelerate the development of species not originally present.

Pool creation may occur at locations selected on the basis of overall preserve topography, local microtopographic variation, and the distribution and observable hydrologic connections among existing pools. At least nine sites were identified in the Golf Course Preserve, and four sites in the Park Preserve where it appears feasible to create vernal pools. These sites are tentative and borings to characterize the subsurface conditions in existing pools and at proposed sites would be necessary to determine whether the impervious layer that perches water and causes ponding are present.

5.2.1 Vernal Pool Policies

The following standards shall apply and shall be incorporated as a condition of project approval for any project, including roadways or other infrastructure, adjacent to the vernal pool preserve:

1. A chainlink fence shall be installed along the boundary of the vernal pool preserve prior to construction, grading the movement of material or machinery onto the site, approval of improvement plans or the issuance of any permits. The fencing shall not be removed until the completion of construction activity. Written release from the Planning Department must be received prior to the removal of any fencing. No activity of any type, except for that approved by the Planning Commission, shall occur within the preserve area
2. A minimum 12" X 12" sign shall be erected along every 50 feet of fencing or portion thereof. The sign shall indicate that the area is a vernal pool preserve and that unauthorized trespassing is prohibited. The appropriate City Code section shall be referenced.
3. A minimum \$10,000 bond or other security deemed appropriate by the Planning Commission and the City Attorney shall be posted to insure the preservation of the vernal pools during construction. Each occurrence of violation of any condition regarding vernal pool preservation shall result in forfeiture of the security.
4. The Vernal Pool Preservation Areas designated on Figure __ shall be dedicated to the City for protection and enhancement.
5. A vernal pool analysis shall be prepared by a qualified plant ecologist identifying any additional mitigation measures which should be incorporated during project construction. This report shall be submitted concurrently with development plans for Planning Commission review and action.

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6. A vernal pool enhancement and creation plan shall be prepared by a qualified plant ecologist to direct the implementation of a specific City preservation and maintenance program.

5.3 Oak Woodlands

Oak woodlands within the Northwest Specific Plan Area include scattered Valley oak (*Quercus lobata*) and interior live oak (*Quercus wislizenii*) among the open grasslands. The oak woodland becomes much more dense along the drainage way of Pleasant Grove Creek Blue oak and adjacent minor tributary swales immediately adjacent to the primary drainage. Blue oak, a common specie found in over three million acres in the California foothill range, is the dominant specie in the wooded areas.

This Specific Plan recognizes the importance of these trees in the ecosystem of the area in providing habitat for numerous small animals and birds, and as a significant visual asset to the community. The Plan establishes detailed guidelines and policies for the future development and conservation of the areas that include the oak woodlands.

5.3.1 Oak Woodland Policies

The City of Roseville Tree Ordinance, when adopted, will apply to the Northwest Roseville Specific Plan. In addition the following standards shall apply. Where inconsistencies exist between the two, the more restrictive shall apply.

1. The cutting or removal of trees prior to specific development plan approval shall be prohibited. The sole exceptions shall be for City-approved roadways, sewer and utility extensions, removal suggested by an arborist, public health and safety or for other reasons as shall be determined by the City. An arborist's report submitted concurrently with development plans is required for all projects with trees on the subject property. At the time of development plan submittal to the City, all trees 6 inches or greater in diameter at 48" above ground will be mapped. Those to be removed shall be identified and their removal shall be approved by action of the Project Review Commission, Planning Commission or the City Council, or as otherwise required by local ordinance or regulation.
2. The arborist's report and mapping shall serve as the basis for preparation of a plan to protect trees. The plan shall contain any recommendations from the required arborist's report as well as the policies expressed here.
3. Submittal of a bond or other security from the developer's contractor in a form and amount approved by the reviewing City body shall be required for all development projects to ensure replacement of trees damaged or destroyed during construction. The amount of bond or security shall relate to the value and number of trees on the site.

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4. Chain link fencing shall be installed one foot outside the driplines of trees identified to be preserved on the property prior to project construction, grading, the movement of materials or machinery onto the site, the approval of improvement plans or the issuance of any permits, to avoid damage to the trees and their root systems. Fencing shall not be removed until the completion of construction activity. Written release from the Planning Department must be received prior to the removal of any fencing. During the period of road construction all trees within the road right-of-way or abutting the road right-of-way which are threatened by construction or related activities and identified by the reviewing City body to be preserved shall be fenced in accordance with the above requirement.

Prior to commencement of any road construction, the developer must receive written release from the Planning Department that all trees identified to be preserved are properly protected.

5. Paving within the driplines of trees identified to be protected shall be stringently minimized. When determined to be absolutely necessary by the reviewing City body, porous materials shall be used along with aeration systems where appropriate.

6. Signs, ropes, cables, and other items shall not be attached to trees identified to be preserved.

7. No employee vehicles, construction equipment, mobile offices, supplies, materials, or facilities are allowed to be parked, stockpiled, or located within the driplines of trees identified to be preserved.

8. No artificial irrigation within the driplines of indigenous oak trees shall be permitted unless recommended by a licensed arborist. Irrigation of planted oak trees in new landscape areas may be acceptable as determined by a licensed Landscape Architect or certified arborist.

9. Landscaping beneath indigenous oak trees may include non-plant materials such as boulders, cobbles, etc. Plant species planted within the driplines of indigenous oak trees shall be generally limited to those which are tolerant of the natural semi-arid environs of the trees.

10. Native trees six inches in diameter or greater at 48 inches above grade which are approved for removal shall be replaced on a two-for-one basis. Replacement shall be by use of a tree size determined appropriate by the reviewing City body in consideration of the soil conditions, the availability of water, and the ability of trees to survive transplanting. The standard shall prevail as amended by City ordinance. Replacement locations shall include the City parks, along the bikeway/pedestrian path in the powerline easement corridor, and along public rights-of-way and adjacent landscape corridors.

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11. Soil disruption within the dripline of trees shall be avoided. In those cases where it is determined by the reviewing City body that disruption is absolutely unavoidable, the following guidelines along with arborist recommendations, shall apply:

- a. Soil surface removal shall not occur within the driplines of trees identified to be preserved.
- b. Earthen fill shall not be placed within the driplines of trees identified to be preserved.
- c. If cuts or fills are made near trees identified to be preserved beyond their dripline, adequate drainage and/or supplemental irrigation shall be provided to mitigate the adverse effects caused by elevation changes.
- d. No trenching shall be allowed within the driplines of trees identified to be preserved. If it is absolutely necessary to install underground utilities within the dripline of such trees, a single trench for all utilities should be either bored or drilled, but not within six feet of tree trunks. After trenching within the dripline the tree should be pruned to remove canopy material proportional to the roots damaged or lost.
- e. Where soil compaction occurs within the dripline of a tree identified to be preserved, measures as recommended by an arborist shall be taken to restore soil condition and integrity.

12. Once construction is completed and bond or other security released, no tree identified for preservation in approved plans may be removed or significantly altered without approval by the Planning Department.

13. Tree preservation and site development policies set forth herein shall be incorporated into Covenants, Conditions and Restrictions (CC&Rs) for all subdivisions within the Plan Area to ensure that subsequent property owners are apprised of the obligation to preserve natural site features.

14. The residential lot pattern and street alignments shall relate to the natural topography and vegetation cover of the woodland area.

5.4 Soil Protection

The predominant soil in the Northwest Plan Area is the Cometa-Fiddyment complex. Typically the areas include a mixture of approximately 35% Cometa soils, 35% Fiddyment soils, and 30% sandy loam, loams, and scattered clay. The Cometa soil is generally deep, extending to approximately 18 inches in depth, consisting of a surface

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layer of brown sandy loam formed of alluvium, mainly from granitic sources. The subsoil is composed of brown clay which extends to approximately 29 inches in depth. The Cometa soil is described as well drained with very slow permeability, slow surface runoff, and slight hazard of erosion. Fiddyment is described as a well drained soil that is moderately deep formed over a hardpan. Similar to Cometa soil, permeability of the Fiddyment soil is very slow, surface runoff is slow, and erosion hazard is slight.

The Cometa Ramona sandy loam occurs as isolated areas in the southwestern corner of the Plan Area on low terraces associated with the Kaseberg Creek drainage. The soil is a deep, well drained clay pan soil that formed in alluvium, mainly granite. Permeability of this soil is considered very slow, largely as a result of the dense clay subsoil. Surface runoff is slow and the erosion hazard is slight.

In general the erosion potential within the Plan Area is slight, however, exposure of the soils could result in erosion if not carefully managed during the construction period. Consequently, this Plan establishes policies for the maintenance of soil stability in the area.

5.4.1 Soil Protection Policies

1. Specific erosion control measures shall be adopted for all development plans. These measures shall include, but not necessarily be limited to, seeding of graded areas, watering during grading activities to reduce wind erosion, and use of hay bales and filter cloth to prevent siltation of stream courses.
2. Site grading for structures and streets shall be controlled. Natural landforms shall be preserved in the development process to the maximum extent possible. Construction techniques including, but not limited to, stepped footings and retaining walls shall be employed as a means of preserving native topography.
3. Slopes with finish grades in excess of 20% shall be encumbered by open space easements and not developed.
4. Slopes shall be rounded and tapered to blend with existing on-site topography, contours on adjacent sites and roadways. Steep slopes and retaining wall should be avoided when feasible.
5. Implement grading in a manner which minimizes disruption to existing natural features such as trees and other vegetation, natural ground forms, water courses and views.
6. Grading within the dripline of trees shall comply with the standards contained in Section 5.3, as well as any recommendations of a corresponding arborist report.

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5.5 Water Quality

Development within the Plan Area will increase the impervious surfaces where soil permeability is naturally very slow. The rate of storm runoff will increase as a result of the increase in impervious surface area, however, the storm drainage will be conveyed to the natural stream channels by a master storm drainage system. Water quality is of concern in areas where urban runoff is allowed to enter natural drainage courses from either rainfall or landscape irrigation. This Plan establishes guidelines for the management of urban runoff through design of drainage systems and land use regulations.

5.6 Air Quality

Air quality in the Sacramento Valley is recognized as a significant environmental concern which influences the quality of life for all residents. Vehicle trips are a major factor in the deterioration of air quality, and new development can influence the degree to which air quality is affected in the region. New development merely provides accommodations for people who already exist, but the location of new residential and employment areas and the spatial layout of communities can play a role in the effectiveness of efforts to maintain air quality over a period of many years.

The Plan describes a land use pattern which provides housing to support nearby employment opportunities and public services. This land use pattern will help reduce automobile traffic and exhaust emissions within the Plan Area associated with daily routines. Retail goods and business-professional services are provided within the Plan Area for the convenience of residents and to induce residents to limit the length and number of trips, thereby reducing the average daily vehicle miles traveled (VMT) throughout the region.

In addition, the Plan provides for alternative transportation modes, including public transit, pedestrian and bikeways, and Transportation Systems Management (TSM) which will also serve to reduce automobile trips. Although the Plan does not anticipate other transportation modes, alternatives such as light rail, could potentially be accommodated within landscape corridors adjacent to major arterials.

The City of Roseville adopted an Air Quality Plan in 1983, pursuant to adoption of the Regional Air Quality Plan. The City is a participant in the 1988 update of the Regional Air Quality Plan through funding contribution to the Phase 1 Study; through representation on the Technical Advisory Committee; and through the contribution of in-kind staff services. Upon adoption of the 1988 Regional Air Quality Plan, the City will amend the current air quality plan.

5.6.1 Air Quality Policies

This Specific Plan shall be amended upon the completion and adoption of the City of Roseville Air Quality Plan, and shall be in conformance with the City Plan.

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5.7 Energy Conservation

The measures designed to help reduce the number and length of vehicle trips can also be effective in reducing the amount of energy required by residents and workers within the Plan Area. In addition, energy conservation measures required by Title 24 will reduce heating and air conditioning requirements as well as water heating for domestic purposes. The Plan establishes energy conservation policies that augment the statutory requirements.

5.7.1 Energy Conservation Policies

1. All inhabitable structures shall be designed and oriented to maximize potential for energy conservation wherever feasible. Such measures shall address, but not necessarily be limited to, utilization of solar energy.
2. Water conservation shall be encouraged through use of efficient plumbing fixtures, including flow restricting devices, and the use of native, drought-resistant landscaping. Landscape irrigation should incorporate water conserving techniques such as low precipitation spray heads and drip irrigation wherever feasible.
3. Trees shall be planted and maintained in all non-residential parking areas to ensure that, within 15 years of planting, at least 50 percent of the parking area is shaded at mid-day during the summer season in order to reduce solar gain.
4. Throughout the Plan Area deciduous trees, which aid summer cooling and allow solar gain for winter heating, shall be included and appropriately sited relative to all habitable structures.
5. All developments within the Plan Area shall adhere to the alternative transportation programs and policies set forth in the Circulation Element of this Plan.
6. As a method of reducing solar gain which may increase interior air conditioning requirements, trees shall be planted and maintained in all parking areas to ensure that, within 15 years of planting, at least 50 percent of the parking area is shaded at mid-day during the summer season.

5.8 Historic Preservation

A cultural resource investigation was conducted as part of the process of preparing the Northwest Specific Plan (Public Anthropological Research, January, 1986). One

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eligible National Register of Historic Places property, the Diamond K Ranch complex, was noted during the survey. Two buildings in particular, a circa 1852 brick house and the 1892 Kaseberg victorian-style mansion, contain architectural value and have local significance, however, the complex is within an area already developed and will not be affected by proposed development within the Specific Plan.

Four historic and four prehistoric isolated artifacts or features were recorded during the survey. In addition, one previously recorded historic homesite was revisited. The isolated artifacts are not considered unique due to their isolated nature, and no further resource management is recommended.

5.8.1 Historic/Cultural Resource Protection Policies

- 1. Where test excavations or any excavation work results in discovery of cultural resources, work shall halt immediately for a distance of 100 feet from the discovery site and a qualified archaeologist shall be consulted for on-site evaluation.**
- 2. Any artifacts discovered which can be relocated shall be dedicated to the City for inclusion in the Maidu Park Native American Center, if approved by a tribal representative.**

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6 □ PUBLIC FACILITIES AND SERVICES ELEMENT

The Northwest Specific Plan Area will provide a full range of urban public services and facilities to serve Plan Area.

Public facilities and services addressed in this element include:

- fire protection
- police protection
- elementary schools
- high schools
- recreation and parks
- libraries
- waste disposal
- electricity
- gas
- water
- sewer
- storm drainage systems

This element describes the general location, useage and capacities of existing and projected public services and facilities requirements.

The location of facilities and services are shown in the Public Facilities and Services Plan (Figure 17). Plan Area water, sewer and storm drainage systems are shown in Figures 18, 19 and 20, respectively.

6.1 Fire Protection

Fire protection is provided throughout the city of Roseville by the City Fire Department from three existing fire stations. Each station is fully manned to provide first response protection to a subarea of the City. As further growth occurs in the City, additional stations will be located in accord with an overall plan to provide overlapping response areas.

A fire station required to serve the northwest quadrant of the City encompassing the Plan Area has been constructed on one acre of land designated for this purpose on Junction Boulevard, just west of the intersection of Foothills Boulevard. This site is centrally located to provide direct access to all portions of the Plan Area. No additional fire station sites will be required in the Plan. A fourth station planned within the North Central Specific Plan Area near the intersection of Roseville Parkway and Pleasant Grove Boulevard will provide back-up response in the Plan Area.

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6.2 Police Protection

The Northwest Specific Plan Area is located entirely within the city of Roseville, and will be served by the Roseville Police Department. No police substations are anticipated at this time.

6.3 Elementary Schools

The Specific Plan Area encompasses portions of two elementary school districts, the Roseville City School District, east of Foothills Boulevard, and the Dry Creek School District, west of Foothills Boulevard. The District's boundary was amended to this location in 1987. Each district will require new school facilities to accommodate the student enrollment anticipated in the Plan Area.

The Roseville City School District encompasses the smaller portion of the Plan Area, and accounts for 2,452 dwellings, or 30 percent of the dwelling units within the Plan Area. The District currently operates Kaseberg Elementary School in the southeast corner of the Plan Area, adjacent to Baseline Road. This school has a total capacity of 600 Kindergarten through 6th grade students on a site encompassing approximately 20 acres. Kaseberg School serves students on the west side of the City, including students from existing residential areas within the Specific Plan area.

ROSEVILLE CITY SCHOOLS K-8

Land Use	Units	Ratio	Yield Rates	Students
R-3 to R-5	1,249	100%	0.5186	648
R-6 to R-8	214	50%	0.5186	55
		50%	0.2611	28
R-10 to R-12	0			0
R-14 to R-16	416	30%	0.2611	33
		70%	0.1740	51
R-20	573	100%	0.1740	100
	2,452			914

The Roseville City School District has indicated that one additional school will be required to serve Kindergarten through 6th grade students north of Junction Boulevard, and east of Foothills Boulevard. A 10 acre site has been designated on the Specific Plan Land Use Map (Figure 7) adjacent to a 10 acre park site.

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The Dry Creek Elementary School District will serve the students from 5,742 dwelling units through the Plan Area west of Foothills Boulevard. The District has determined that it will require a total of three schools to meet this need; two elementary schools, and one junior high school, or intermediate school. The elementary school sites are 10 acres in area, and the intermediate school is 18 acres.

Each of the elementary school sites is located adjacent to a City park so that the school recreation facilities may be augmented by City facilities. An aggregate total of 60.2 acres, including the existing Kaseberg School have been designated as school sites required to serve the elementary school age population within the Plan Area.

The school sites are located with consideration of the possible health effects of exposure to

DRY CREEK JOINT ELEMENTARY SCHOOL DISTRICT K-8

Land Use	Units	Yield Rates (K - 6)	field Rates (7 - 8)	Students (K - 6)	Students (7 - 8)
Single Family R-3 to R-5	4,108	0.35	0.10	1,438	411
Multi Family	1,634	0.30	0.08	490	131
Totals	5,742			1,928	542

the electro-magnetic fields emanating from high tension power lines. Although information on the effect of exposure over a period of time is not conclusive, there is sufficient concern to justify extra precaution in locating school facilities. Consequently, all school sites within the Plan Area are located such that there is a buffer of not less than 150 feet from the edge of the power line easement to the boundary of the active portion of any school site.

6.4 High School

The Roseville High School District serves the entire Northwest Plan Area. The District has determined that a new high school will be required to serve the students on the west side of the City. The high school should be of sufficient size to accommodate an ultimate enrollment of up to 1,800 students, and a full athletics program. Consequently, a 41.6 acre site has been designated on the Specific Plan Land Use Map on the west side of the Plan Area. This site is located at the intersection of two major streets and is on gently rolling terrain that will facilitate the design and construction of a large, spacious campus.

6.5 Recreation and Parks

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ROSEVILLE JOINT UNION HIGH SCHOOL DISTRICT

Land Use	Units	Ratio	Yield Rates	Students
R-4	1,943	100%	0.3	583
R-5	2,922	100%	0.3	877
R-7	1,160	50%	0.3	174
		50%	0.1	58
R-8	64	50%	0.3	10
		50%	0.1	3
R-15	350	30%	0.15	16
		70%	0.08	20
R-20	1,755	100%	0.08	140
TOTALS	8,194			1,880

The Northwest Specific Plan Area will ultimately be the home to nearly 20,000 residents. In order to meet the recreation needs of this population and provide for a high level of visual open space the Specific Plan provides for substantial park area.

The City standard for recreation facilities is established in the General Plan adopted in 1977. The standard requires a total of 9 acres of parkland per 1,000 residents allocated among three park types: neighborhood, community and city-wide. The standard and the park area required for each park type is summarized in Table 7.

Table 7
Summary of General Plan Park Area Requirements

<u>Park Type</u>	<u>Service Area</u>	<u>Acres/1000 Population</u>	<u>Acres Required</u>
Neighborhood	3/4 -1 mile	2.5	12-16
Community	1-2 miles	1.5	20-30
City-wide	Total City	5.0	100
		====	====
TOTAL		9.0	

The standard of nine acres of parkland per 1,000 residents is significantly greater than that required by most other jurisdictions in the post-Proposition 13 era, and indicates the special value given to active recreation, and the substantial, long-term commitment of the City of Roseville to the recreation needs of the community.

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The City standard, although adopted in 1977, has not been applied throughout the City until the use of Specific Plans and the attendant development agreements has provided a means of acquiring the necessary parkland.

In the Northwest Plan Area a substantial amount of land has been developed pursuant to the approval of subdivision maps under land use allocated in the 1985 version, or earlier versions, of the General Plan. Under the provisions of the Subdivision Map Act these subdivisions are required to meet a park area requirement of only 5 acres per 1000 residents. In all instances within the Northwest Plan Area these requirements were met by payment of fees, rather than the dedication of park land. Consequently, the only park area that predates the Plan is the site adjacent to Kaseberg School which was expanded to a total of 16.7 acres in 1988. The residential projects developed or approved pursuant to the 1985 General Plan are consistent with the provisions of that Plan within the statutory authority of the City to exact parkland dedications or in-lieu fees.

The park area within the Northwest Specific Plan is provided within those parcels that are subject to the provisions of the Specific Plan. Land area in excess of the standard of 9 acres per 1000 residents is set aside within these parcels to meet the needs of the entire Plan Area.

6.5.1 Park Concept and Goals

The park and recreation needs in the Plan Area are met with a combination of a single large park, and a number of small neighborhood parks.

The Northwest Specific Plan Area will provide for a total of 12 designated park sites, including one large community park, and 11 neighborhood parks totalling approximately 131 acres. In addition to these designated park sites a park reserve site of 30 acres is designated for potential expansion of the community park to serve as a city-wide park. These facilities are supplemented by the open space corridors created by the powerline easements, the landscaped corridors along the major boulevards drainages, recreation facilities at the school sites, and the significant area dedicated to the use of a municipal golf course.

6.5.1 Community Park

A city-wide park is intended to provide for very active recreation that requires extensive land area and generates high levels of noise, traffic and lighting in the evening hours. The Specific Plan designates a 58 acre park site at the west boundary of the Plan Area with an additional 30 acre park reserve area. This park is intended to serve not only Plan Area residents, but also other residents in the northwestern section of the City. Facilities can be expected to include lighted baseball diamonds and tennis courts, hard surface areas for basketball and active play, play structures, turfed playfields and a swimming pool. Picnic, restroom and on-site parking facilities will also be provided in sufficient quantity to meet projected user demand.

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This park can also be expected to provide a location for certain public services such as youth and senior centers, and possibly day care facilities. A public library will be located within this park.

6.5.2 Neighborhood Parks

Neighborhood parks are intended primarily for use by residents of the immediate neighborhoods and include primarily passive recreational facilities not conducive to large organized sporting events and the associated noise and vehicle traffic. Neighborhood parks will include turfed lawn areas suitable for picnics and casual activities, in addition to children's play equipment.

6.6 Municipal Golf Course

A special feature of the Northwest Specific Plan Area is the proposed Municipal Golf Course. The course is to be developed on land dedicated to the City specifically for that purpose. The 18 hole course will be developed along the South Branch of Pleasant Grove Creek, and will benefit from the amenity of the heavily oak-wooded, gently rolling terrain. The course will be directly accessible from Pleasant Grove Boulevard and Cook-Riolo Road, and thus, will be easily reached via the Highway 65 Bypass, Foothills Boulevard, and existing Highway 65. The course may provide full service facilities, including a driving range, practice putting greens, a clubhouse, pro shop, and restaurant.

Surrounding land uses are to be predominantly single family dwellings.

Approximately 174 will be required to accommodate these facilities. The actual area required is dependent upon preparation of a final design for the course and auxiliary facilities.

6.7 Public Libraries

A City branch library will be located within the city-wide park at the intersection of Pleasant Grove Boulevard and Cook-Riolo Road.

6.8 Solid Waste Disposal

Solid waste disposal for Plan Area development is provided by the Regional Landfill Authority at a landfill site northwest of the City. This site has a remaining collection life expectancy of about thirty-five years.

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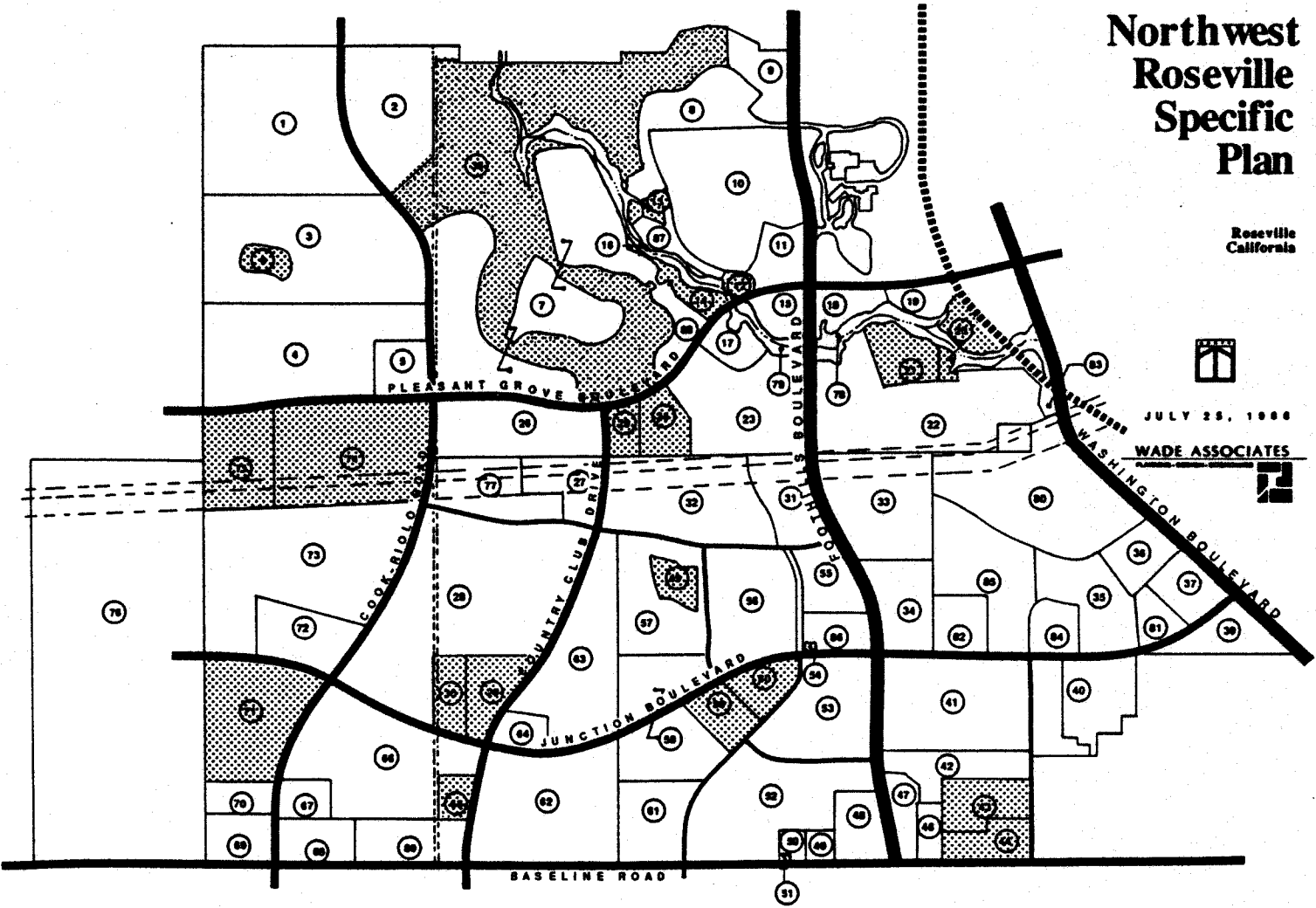
Northwest Roseville Specific Plan

Roseville
California



JULY 25, 1988

WADE ASSOCIATES



Public Facilities and Services Plan
Figure 17

Proponent Draft

6.9 Water Supply

The City of Roseville obtains its water from Folsom Lake under a contract with the Federal Bureau of Reclamation, which has guaranteed water rights to 36,000 acre feet per year. This equates to 32 million gallons per day (mgd). The current city-wide usage is around 8,000 acre feet per year or 7.15 mgd.

The City water treatment plant is designed to expand up to 40 mgd. Current capacity is 24 mgd. Present peak usage is around 10 mgd.

The City of Roseville has extended water mains to the Plan Area from Baseline Road on the south to Blue Oaks Road on the north. The 24 inch trunkline water main in Foothills Boulevard will supply water to the Plan Area via a series of 10 and 12 inch lines as shown on the Water Plan (Figure 18).

Water lines will be installed in accordance with the Public Infrastructure Phasing Plan contained in the Implementation Plan.

6.10 Sewage Disposal

Sewage services are provided by the Northwest Roseville-Rocklin Sewer Assessment District through access to the Roseville Sewage Treatment Plant. The plant has a 11.75 mgd treatment capacity. Currently less than 6.0 mgd is being processed daily.

A 15 inch sewer forcemain, located near the future alignment of Cook-Riolo Road, crosses the Plan Area in a north/south direction. Two other sewer lines exist in the northern section of the Plan Area, in the vicinity of the golf course site and a third is oriented in an east/west direction, connecting Foothills Blvd. with the Cook/Riolo alignment.

As shown in the Sewer Plan (Figure 19), 10 to 18 inch sewage trunk lines will be installed from east to west across the Plan Area and connect to an existing pump station. From the pump station, sewage flows south, via Brady Lane, to the City's Sewage Treatment Plant .

Extension of sewer service from the existing trunk lines will be accomplished as development occurs in accordance with phasing described in the Public Infrastructure Phasing Plan contained in the Implementation Plan, herein.

6.11 Storm Drainage

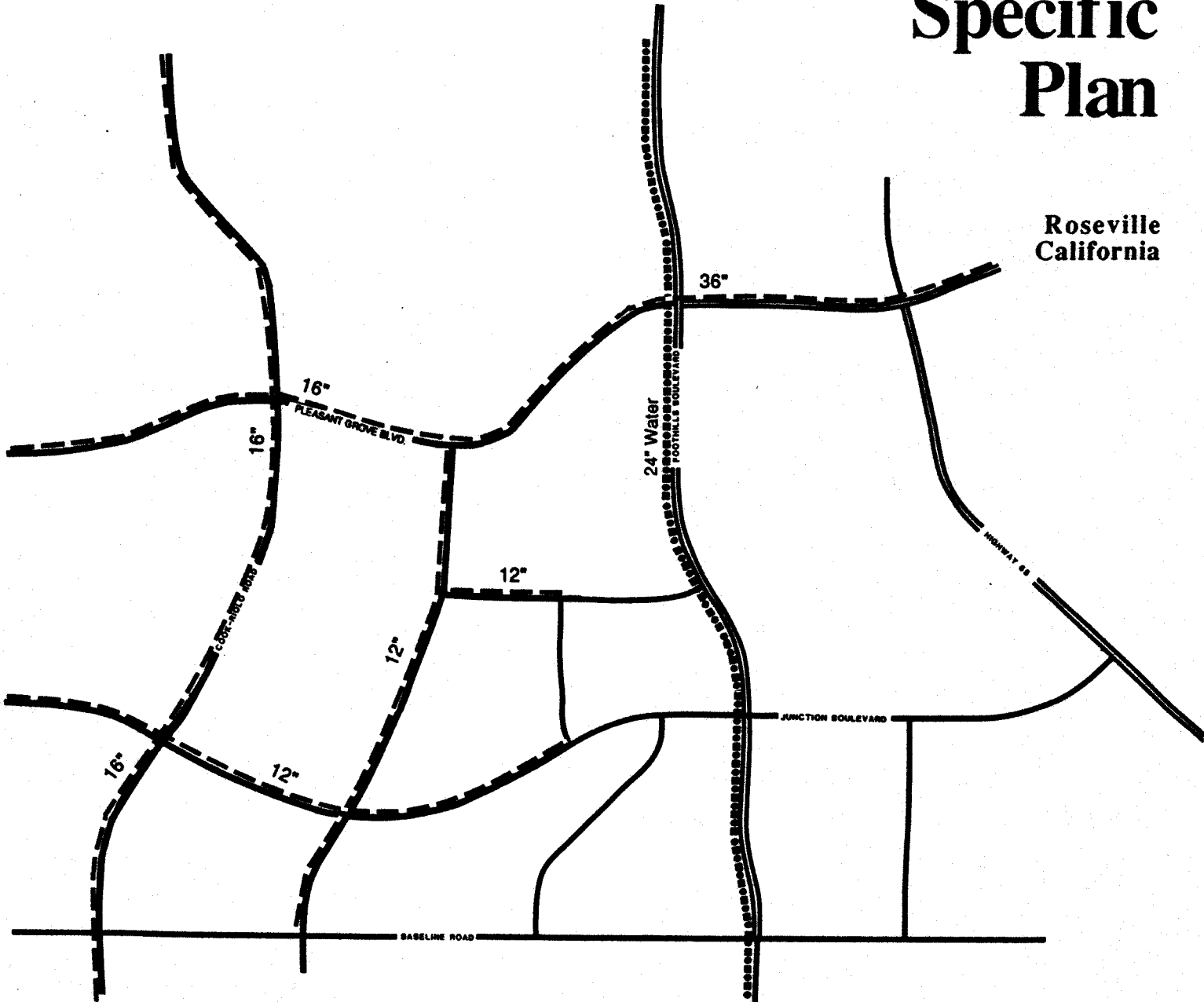
Storm drainage within the Plan Area is presently accomplished within natural drainage channels. In some instances run-off from streets is collected at catch basins and emptied into these natural drainageways.

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Northwest Roseville Specific Plan

Roseville
California



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New 
Existing 24" 

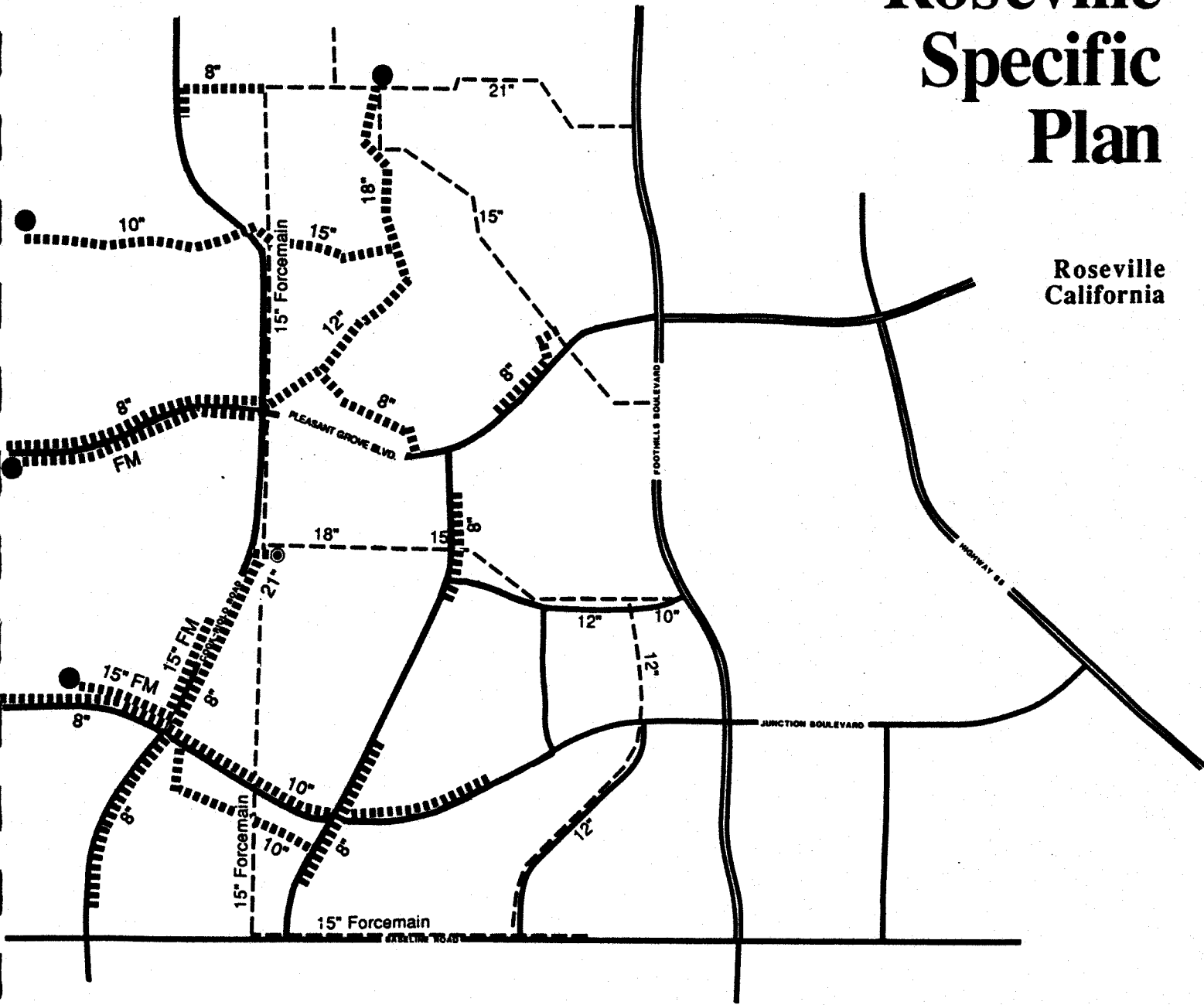
Water Plan
Figure 18

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Northwest Roseville Specific Plan

Roseville
 California



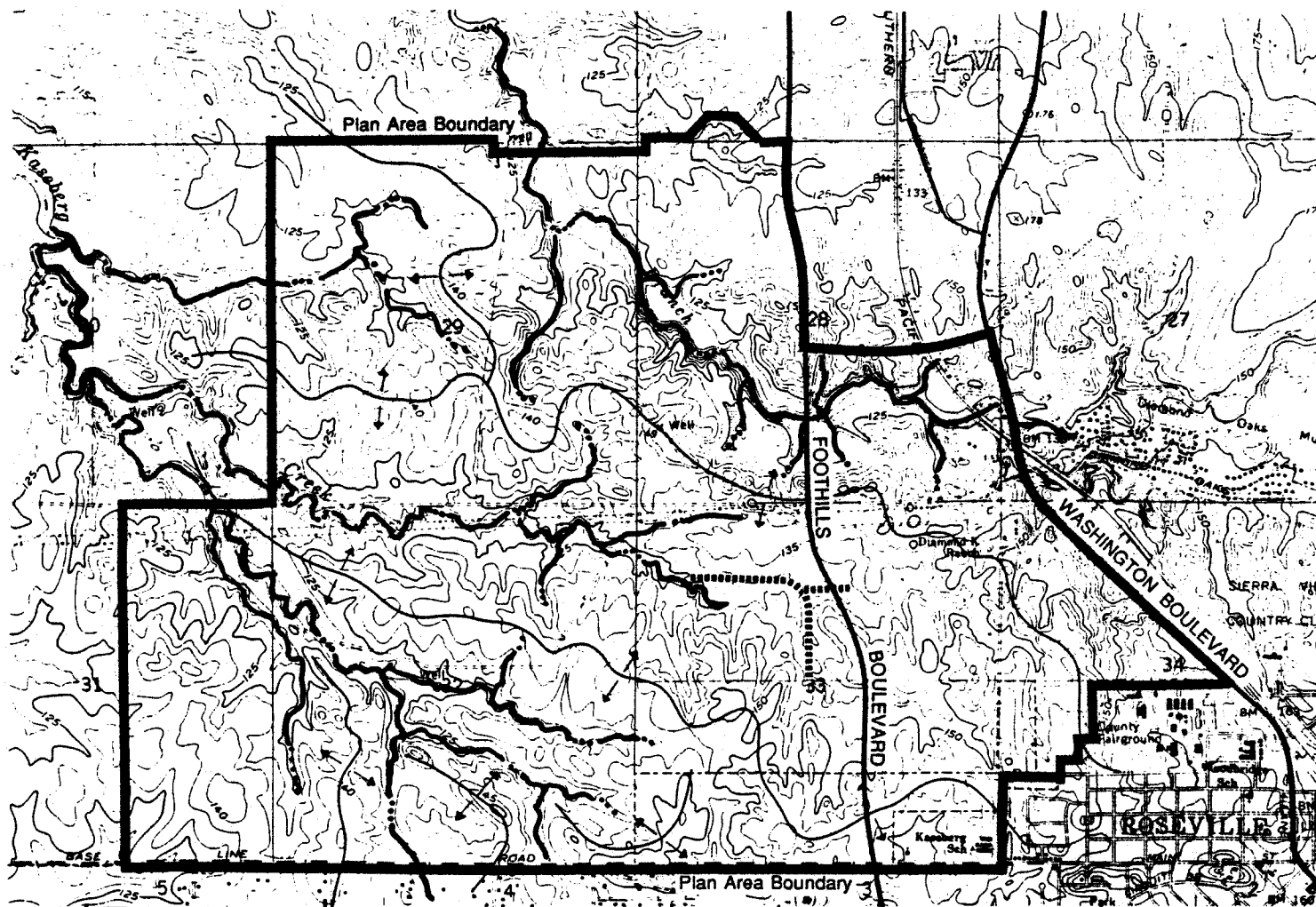
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- Existing - - - - -
- New - - - - -
- Lift Station (existing) ●
- New Lift Station (Proposed) ●

Sewer Plan
 Figure 19

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- ← → Direction of Surface Drainage
- ~~~~~ Summit Line
- - - - - Natural Drainage Course
- Existing Storm Drain



Storm Drainage Plan
Figure 20

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7. IMPLEMENTATION ELEMENT

The Implementation Element addresses the enforcement of standards, the funding of capital improvements, and the phasing of development.

7.1 Public Land Use Regulation

7.1.1 Zoning

All land within the Plan Area shall be zoned in accordance with zoning districts described in the Roseville Zoning Ordinance.

7.1.2 Development Agreements.

The property owners within the Plan Area will execute a revised development agreement in accordance with Ordinance No. 802. Such agreement will set forth the infrastructure improvements, public dedication requirements, landscaping amenities and other contributions to be made by a property owner in return for guarantees by the City that certain land uses and densities in effect at the time of agreement execution will be allowed.

7.1.3 Easements.

Open space areas, other than public parks and floodway dedicated to the City, will be privately owned. Dedication of public access easements will be required to assure right of access by the general public for passive recreation activities specified in the Open Space Element and, in the case of non-dedicated drainageways, for routine maintenance by City personnel.

Pedestrian pathways, where not located within a street right-of-way, shall be located on private property encumbered by a public access easement. Easements for public utilities access and maintenance may be acquired by the City.

7.2 Maintenance of Common Facilities

Private common areas in commercial and multi family developments and other open space areas will be maintained by a homeowner's association. Landscape setback areas along arterial streets will be maintained by the City using funded provided by an assessment district created for this purpose.

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7.3 Public Facility Financing

Public facilities will be provided through a variety of mechanisms including land dedications, reimbursement agreements and assessment districts as described below.

7.3.1 Land Dedication.

Land for streets and parks will be dedicated to the City. School sites will be acquired by the districts through provisions of California statutes.

7.3.2 Assessments Districts.

Assessment districts have been formed for the purpose of financing sanitary sewer and water improvements and the construction of Foothills Boulevard. Additional assessment districts or Mello-Roos districts may be formed to fund sewer, water, drainage and street improvements.

7.3.3 Developer Financing.

Street, street light, major water trunkline (and possibly major sanitary sewer trunkline) construction will be financed by the developer subject to, if appropriate, reimbursement agreements administered by the City or the developer. These development agreements will require subsequent developers within and outside of the Plan Area to reimburse the master developer for a portion of the initial installation cost based on a "fair share" formula to be established. The specific provision of these methods as applied to the Specific Plan Area are detached in the Development Agreements.

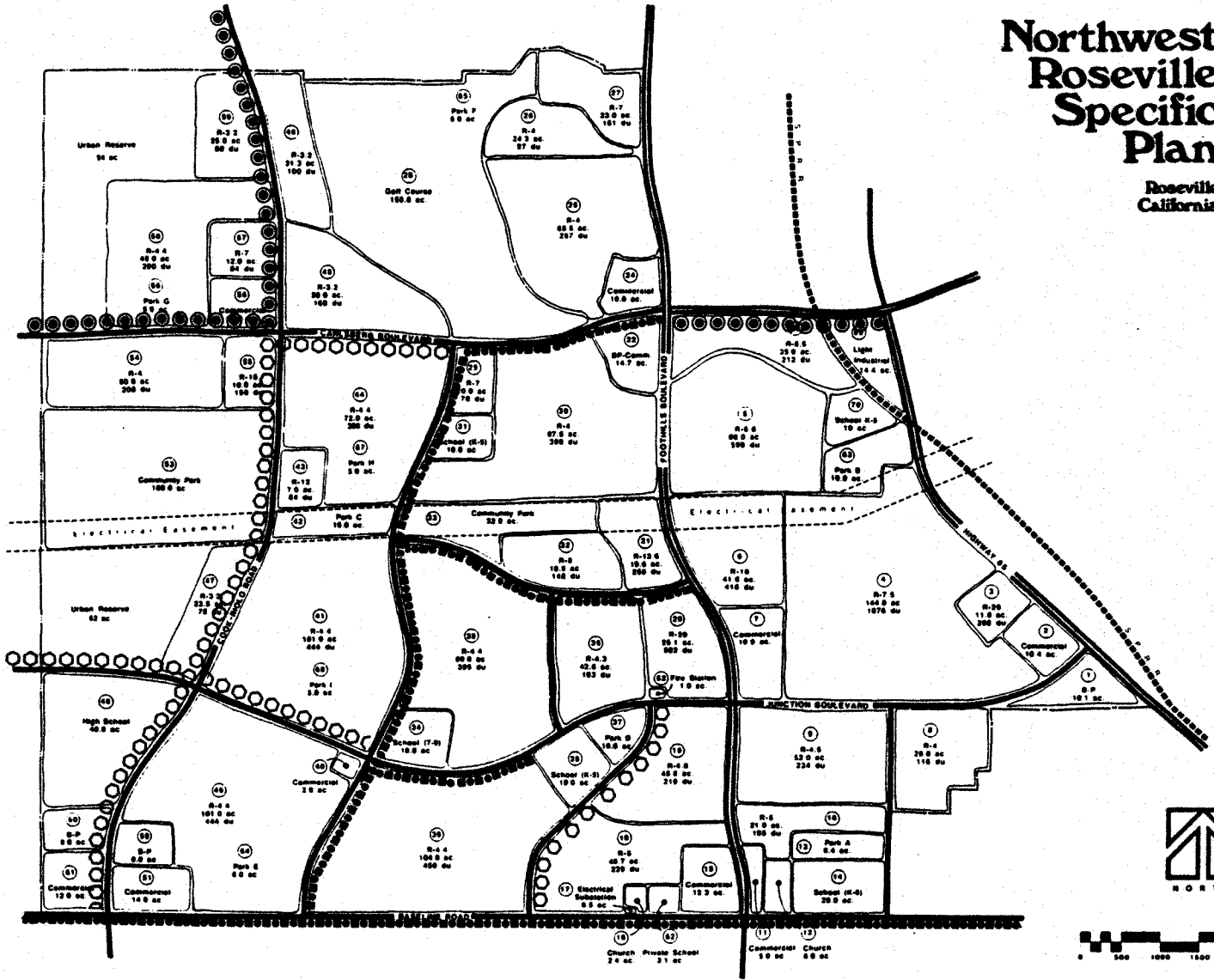
7.4 Phasing

It is intended that all basic infrastructure required to support the land use shown on the Specific Plan Land Use Map be constructed as a single phase. The funding of such infrastructure will be provided by a single benefit assessment district.

Once the major arterial and collector streets have been installed additional collector and local streets will be able to connect and penetrate into nearby properties. Street construction within each phase described below includes paving, curbs, gutters and sidewalks, except as noted. Right-of-way landscaping, as described in the Design Standards, and street lighting will also be installed in conjunction with street construction. Installation of walls and fences along arterial and collector streets will occur incrementally in conjunction with adjacent residential development.

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Northwest Roseville Specific Plan Roseville California



- Phase 1
- Phase 2
- Phase 3

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WADE ASSOCIATES
PLANNING DESIGN ECONOMICS

Phasing Plan
Figure 21

Proponent Draft

8 □ URBAN DESIGN GUIDELINES

Urban Design is the fabric that binds together all the physical elements of the built community, both the man-made environment and the natural environment. These elements include:

- site design
- architecture (building form and style)
- landscaping
- screening/ fencing
- lighting
- signage
- street furniture

The Urban Design Guidelines provide a level of consistency throughout the Plan Area for design elements that are common aspects of many of the proposed land uses. The consistency in urban design is intended to serve many specific purposes, but the fundamental purpose is to provide a sense of continuity and identity in the Plan Area.

This section of the Specific Plan is organized around the elements of urban design rather than specific land uses. Each subsection addresses one of the design elements. The subsection begins with general guidelines and objectives. Applications of the design guidelines on specific land uses are described as subheadings to the design element. This approach to organizing this section reflects the primary emphasis on the common themes in the design guidelines rather than land use types. The emphasis in urban design is toward individual design features that are common throughout the Plan Area.

The Design Guidelines presented in this section overlap with the guidelines presented in the Land Use Element, Section 2. The land use and the urban design guidelines have certain similarities, however, the emphasis in the land use section is oriented to the relationship of land uses to one another, and to the design of land use as a distinct pattern, as in the single family neighborhood patterns. There is also overlap with the design guidelines relating to oak woodland preservation, erosion control and the use of open space presented in the Open Space and Resources Management Element, Section 5. The design of the circulation elements, including street patterns and the bikeways and pedestrian paths are addressed in the Circulation Element, Section 4. Bus stops and other street furniture are addressed in this Section.

In the Northwest Specific Plan Area there is no unique natural feature or historic setting that would dictate a particular theme or selection of materials and architectural style. However, there are climatic and terrain features, and the dense oak woodland areas that

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suggest an approach to community design. Furthermore, there is an intent in this Plan to establish an identity for the area that will distinguish it from other areas in the City. Design emphasis in the Plan is given to the enhancement of the character of the Plan Area in gently rolling topography and oak-studded countryside.

The Guidelines are intended to serve as an evaluative aid to the City of Roseville's Project Review Commission, Planning Commission and City Council in the review of individual Planned Developments within the Plan Area. These Guidelines were created to express "intent" rather than "absolutes", thereby allowing flexibility and the ability to provide other solutions which may fulfill the intended design. Used in conjunction with Specific Plan policies described in the Plan, these Guidelines are intended to promote creativity and innovation as well as consistent quality.

The Urban Design Guidelines are intended to promote high quality development, a sense of place, convenient vehicular/non-vehicular access, and an aesthetic community environment for the residents of the Plan Area.

The General Goals inherent in these Urban Design Guidelines are:

1. Building densities and designs which reflect the suburban character of the Northwest Roseville Specific Plan Area.
2. Building form and layout which emphasizes architectural harmony in detail, materials, landscaping and signage within an individual project and within the larger community.
3. A built-environment that minimizes disruption of existing natural features and blends with the natural environment and topography.
4. Integration of the built-environment and open space systems to enhance living and working spaces.
5. Maximum potential for energy conservation through building design and landscape designs which recognize the climatic conditions in the area.
6. High quality and aesthetically superior development.
7. Safety and convenience for all residents and visitors in the Plan Area.

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8.1 Site Design

8.1.1 Single Family Neighborhoods

1. Where the center-line of a street alignment does not vary by more than four feet along the frontage of eight or more adjacent single family parcels, the front yard setbacks of not less than thirty percent of the dwellings on each side of the street shall vary from the standard front yard setback by a minimum of two feet.

8.1.2 Attached and Multi-Family Housing:

1. Separate vehicular and pedestrian circulation systems should be provided which minimize auto and pedestrian contact.
2. Plan common open space areas with specific functions in mind. Such areas should not be "left-over" after building design. Integrate open space areas through on-site pedestrian circulation systems.
3. Use open space areas to preserve existing natural features when present. When adjacent to existing open spaces corridors, orient towards and incorporate such corridors into project design.
4. Provide recreational facilities such as pools, tennis courts, tot-lots and picnic areas in a quantity reflective of the projected needs of the project population.
5. If private open space is provided, it should be directly accessible from adjacent unit, should be large enough to allow standard outdoor activities and should reflect wind and sun orientation.
6. Provide sufficient buffering between multi-family development and major roadways or non-residential uses.

8.2 Architecture (Building Form and Style)

The architectural aspect of these Design Guidelines is intended to provide a general guideline for architectural approach rather than strict design standards. It is recognized that architecture is a subjective matter that is open to broad interpretation. Consequently, design directives that would specify the use of certain materials or forms is not appropriate. However, the climate, topography, and the presence of significant stands of oak trees suggest that adherence to basic design guidelines is in order for all buildings within the Plan Area. These include:

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1. Use of broad overhangs to shelter and shade walls of buildings, notably on the west and south facing sides.
2. Use of materials that will withstand the extreme seasonal variation in temperatures that occur in the area.
3. Use of light colored building materials and finishes that complement the sense of open space and light that characterize the existing environment.
4. Use of stark white finishes and mirrored glazing is discouraged.
5. Site design that allows the built-environment to be incorporated in the oak woodlands without damaging the trees. The Open Space and Resources Management Element (Section 5) provides detailed guidelines directed to complying with this guideline.

8.2.1 Single-family detached housing:

1. Within individual subdivisions building elevations, heights, roof lines, color schemes and setbacks should vary within a consistent design theme to insure visual variety and interest.

8.2.2 Attached and Multi-Family Housing:

1. Architectural treatment and detail should be consistent among buildings, but should create visual interest through orientation, form and alignment of individual buildings.
2. Parapet walls, when required, should be treated as an integral part of building design. Such walls should not appear as unrelated visual elements.

8.3 Commercial Site Planning Guidelines

The quality and function of each structure are influenced by the location of open space, the distance between adjacent buildings, the ease of access for autos or pedestrians, and energy efficiency through climatic responsiveness to sun and wind patterns.

Commercial projects shall be designed to address the following considerations:

1. Provide safe and convenient pedestrian pathways separated from auto and truck traffic.
2. Centralize and share parking facilities. Maximize the use of joint-access driveways. Encourage parking lot design that provides for good aisle circulation, minimization of conflicts and ease.

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3. Provide opportunities for outdoor and indoor public activity spaces (i.e., fountains indoors and out of doors; plazas for special promotional events, etc.).
4. Provide solar access, wind protection, and shade, depending upon the time of year, to enhance the quality of outdoor space.
5. Establish for each commercial and business-professional use a unified architectural, landscaping, lighting, and signage treatment to create a desirable, attractive and safe shopping environment.
6. Design commercial centers and multi-tenant parcels to have unified design utilizing consistent building materials, architectural styles, textures, detail, colors, landscaping and signage. "Trade-mark" type buildings are generally discouraged.
7. Utilize unique architecture, staggering of building and roof-lines, variations in building orientations and layouts to create interesting projects.
8. Orient parking along the sides and/or rear of structures rather than in front, when practical.
9. Incorporate varied textures, materials, colors and landscaping to identify project entrances and break-up paved areas.
10. Provide visually separated service entries for the delivery of merchandise.
11. Provide appropriate buffering between residential and commercial properties through the use of dense landscaping and/or well designed soundwalls.
12. Mechanical and utility service equipment on buildings should be designed as part of the structure. Unsightly elements, such as loading and storage areas should be screened from view offsite.
14. Screens, fences and accessory structures should be compatible in material, color and texture with the main buildings.
15. The buildings should be designed to fit into natural and man-made surroundings using landscape and earthworks where feasible. When adjacent to open space areas, orient towards and incorporate such areas into project design.
16. Buildings should be sited with consideration given to noise, safety and privacy.

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8.4 Business Professional Guidelines

1. Buildings shall be of an architectural design and character compatible with other buildings in the Specific Plan Area in order to provide the quality image desired by corporate and professional users. Business-Professional buildings are to have unified design utilizing consistent building material, architectural style, textures, detail, landscaping and signage.
2. Diverse building layouts and orientations, varying setbacks, building heights and bulk, staggering of buildings and roof-lines, and distinct architectural forms are encouraged to create visual interest.
3. Compatible building materials, textures, detail, colors, roof-treatment and landscaping are to be used on all sides of building visible from roadways, adjacent properties or the general public.
4. All buildings, structures, paved areas, building materials, color schemes and landscape elements shall be designed and constructed to create a desirable environment for the intended use, and to relate harmoniously to other business-professional buildings and adjacent residential neighborhoods.
5. Location of taller buildings should relate to project scale with lower profile structures adjacent to street frontages.
6. Orient buildings adjacent to roadways with rear and/or side parking when practical.
7. All building and project entries should be well defined and afford a sense of entry.
8. Incorporate pedestrian plazas with landscaping, seating, drinking fountains and points of interest such as water elements or art sculptures into project design.
9. Provide secured bike storage, exercise and jogging facilities, lockers, showers, and outdoor eating and seating areas for employee utilization.

8.5 Guidelines for Other Public Uses

1. Park and Ride lots shall be designed, landscaped and buffered using the same criteria regulating other parking areas within the Commercial Land Uses.
3. Any additional public uses shall utilize the same general standards as incorporated in adjacent uses or projects.

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8.6 Landscape Guidelines

8.6.1 Street Landscaping

1. Street trees should be located along major thoroughfares to provide shade, foliage to soften the hard streetscape, and a canopy "ceiling" to help define a more intimate pedestrian scale. Although a variety of trees can survive as effective street trees, it is recommended that a single species of tree be used on a particular street for visual continuity and harmony.
2. Landscaped setbacks shall be created along all arterial streets to shield private spaces and help create a sense of unity along the street and within the community.
3. Landscaping should include mounding and berming as a means of adding visual interest.
4. All landscaping should be maintained by automatic irrigation systems.
5. Drought resistant species should be used wherever possible.
6. Special paving treatment such as precast hexagonal concrete pavers on concrete or sand should be used where special character paving emphasis is desired such as at crosswalks and intersections, and major entrances to developments.
7. A six-foot solid masonry wall shall be provided along single family residential areas adjacent to arterials and a six foot solid wood fence with masonry pilasters adjacent to collector streets, to provide a visual and acoustical barrier.

8.6.2 Open Space Corridor Landscaping

Open space corridors will occur primarily along stream courses and within the powerline easement. These areas have been designated to remain as permanent open space. This network provides an excellent opportunity to blend the landscape system with planned urban landscape.

1. Increased runoff will require erosion control techniques which need to be integrated with the overall landscape design. Drainage channels should conform to the natural character of the landscape and minimize change to the existing state creek channel where feasible.
2. Earthen berms should be used as a land-use buffer.
3. Open space/floodway corridors should be accessible from residential or employment

Proponent Draft

areas.

4. Land uses should be oriented toward the riparian creek corridor rather than toward the street where feasible.
5. Multiple housing or business park open spaces are encouraged to connect to the corridor and related paths.
6. Tree plantings should be extended from the corridor into adjacent land use sites.
7. Accent trees should be used to frame views into floodway corridors.
8. New planting should draw upon native and non-native riparian species.

8.7 Screening Guidelines

1. Walls or fences at least 6 feet in height, constructed of wood or masonry should be provided along all arterials adjacent to single family residential areas as a sound and visual buffer.
2. Screen and orient other visually undesirable elements such as trash enclosures, loading areas and service yards from public view.
3. Ground mount mechanical equipment when practical. If not ground mounted, such equipment must be screened from view of streets, adjacent properties and the general public through the use of parapet walls, roof wells or other means incorporated as an integral part of building design.
4. Locate all utility lines and connections underground. Screen and orient from public view transformers, terminal boxes, meters, fire risers, backflow preventers and other similar facilities except as required by City or public utilities.
5. Ground mount and screen from public view satellite dishes and similar structures.
6. Insure compatibility of all screens, fencing and retaining walls in material, color and texture with related buildings.

8.8 Lighting Guidelines

1. Provide exterior lighting for safety and security as well as to enhance building design and landscaping.
2. Design lighting so as not to create glare for project occupants or neighboring properties.

Proponent Draft

3. The style and design of lighting fixtures should be compatible and consistent with building design.
4. Utilize energy efficient lighting types.
5. Low pressure sodium vapor lights should be employed within cutoff-style fixtures to improve energy efficiency and reduce glare impacts.

8.9 Sign Guidelines

The following policy statements shall guide the development of sign programs submitted contemporaneous with site development plans:

1. Relate all signs to their surroundings in terms of size, shape, color, texture and lighting so that they are complementary to the overall design of the building and are not in visual competition with the building or other conforming signs in the area.
2. Insure that the signing is subtle and unobtrusive, conveys its message clearly and legibly, is vandalproof and weather resistant, and if lighted, not unnecessarily bright.
3. Arrange any external spot or flood sign lighting so that the light source is screened from direct view, and so that the light is directed against the sign and does not shine into adjacent property or blind motorists or pedestrians.
4. Plan evergreen shrubs around the base of any freestanding sign to integrate the sign with the ground plane and screen out any low level flood lights. The freestanding sign should be low profile wherever site and visibility conditions allow.
5. Avoid using struts, braces, kickbacks or guy wires to support signing.

8.10 Street Furniture

1. Benches should be located along arterials, particularly at bus stops, to allow comfortable seating.
2. Bus shelters should be designed for minimal interference with pedestrian flow. In such instances there should be minimal structural support, no walls, and benches only where sidewalk widths are adequate.
3. For street intersections and streets with heavy vehicular use, an integrated system of street furniture which combines lighting, traffic control devices, signs, and other elements is recommended.

Northwest Roseville Specific Plan
Initial Study





CITY OF ROSEVILLE

316 VERNON STREET • ROSEVILLE, CALIFORNIA 95678 • PHONE (916) 781-0200

NOTICE OF PREPARATION

Date: May 17, 1988

From: Roseville Planning Department
316 Vernon Street
Roseville, CA 95678

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report on the Northwest Roseville Specific Plan

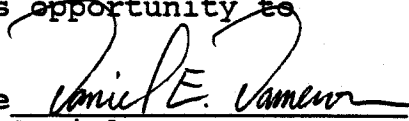
The City of Roseville will be the lead agency in preparing an Environmental Impact Report (E.I.R.) for the Northwest Roseville Specific Plan pursuant to the California Environmental Quality Act (C.E.Q.A.) Guidelines, 14 California Administrative Code, Section 15000 et seq.

The project description, location and probable environmental impacts of the proposed project are identified in the attached Initial Study. We would appreciate receiving your comments on any additional considerations that should be addressed in the E.I.R. Please forward any comments or suggestions to the City within thirty (30) days. Please address all comments to the Roseville Planning Department at the above address.

The E.I.R. consultant, R. C. Fuller Associates, may contact NOP respondents for assistance in preparing the Draft E.I.R. The City would appreciate the respondents' cooperation with the E.I.R. consultant.

Please contact Daniel E. Dameron at (916) 781-0276 if you have any questions. We hope you take advantage of this opportunity to participate in the preparation of the E.I.R.

Signature


Daniel E. Dameron

Title

Associate Planner

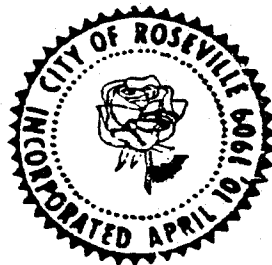
Date Comments Due: June 17, 1988

INITIAL STUDY

**NORTHWEST ROSEVILLE
SPECIFIC PLAN**

PREPARED BY

**CITY OF ROSEVILLE
PLANNING DEPARTMENT**



TECHNICAL ASSISTANCE

RC FULLER ASSOCIATES

WADE ASSOCIATES

PROJECT DESCRIPTION

A. BACKGROUND

In November of 1985, the Roseville City Council adopted by resolution an amendment to the Land Use Element of the General Plan. This amendment approved tentative land use for three (3) distinct sections of the City including the Northwest Plan Area. The land use allocations were made contingent upon approval of a Specific Plan and development agreement for each of the areas. The Northwest Roseville Specific Plan is being prepared to carry out the intent of the City Council for one of the areas identified in the November, 1985 action.

A Notice of Preparation was previously prepared for this project in August of 1986, and a Draft Environmental Impact Report circulated in August of 1987. Since this time, some refinements have occurred to the Specific Plan and modifications have been made to the Draft E.I.R. analysis. These refinements relate to the shifting of land uses resulting in modifications primarily to the circulation analysis of the E.I.R. This Initial Study is being prepared consistent with the provisions of the California Environmental Quality Act for recirculation of the Draft Environmental Impact Report.

B. PROJECT LOCATION

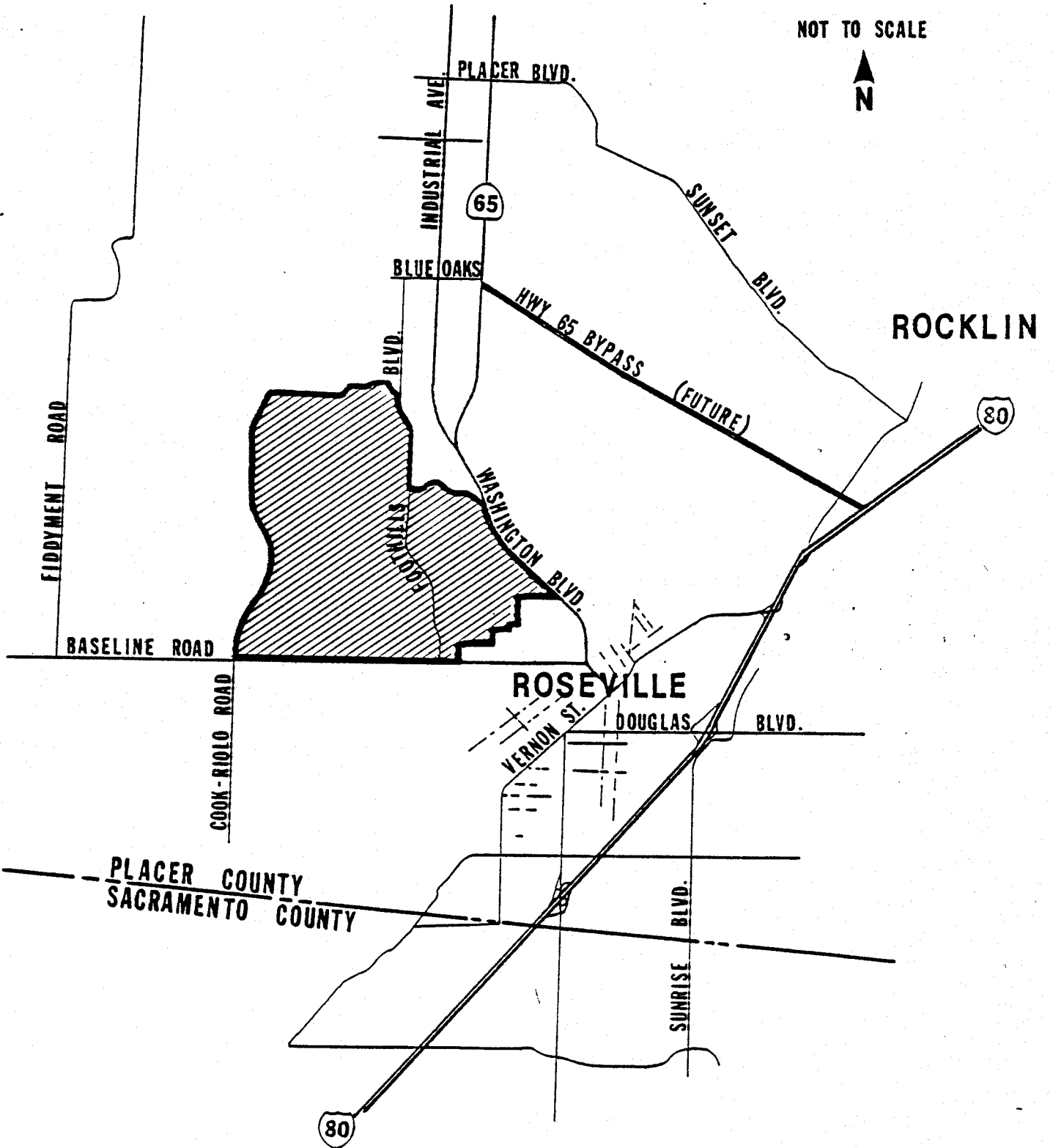
The Northwest Roseville Specific Plan Area consists of approximately 2,300 acres of developed and undeveloped land located northwest of the historic center of the City of Roseville. (See Figure 1.) The Plan Area is bounded on the north by the North Roseville Industrial area, on the east by Washington Boulevard and the Southern Pacific Railroad line, on the south by Baseline Road, and on the west by a section line located approximately 800 feet west of the intersection of Cook-Riolo and Baseline Roads.

The Northwest Plan Area is surrounded by a variety of land uses. To the north is a large area of light industrial and industrial land uses anticipated to provide a significant number of job opportunities into the future. Existing businesses located in this area include Hewlett Packard, NEC, American Olean Tile, Latham Lumber and H. B. Fuller. Immediately east of the Plan Area is existing Highway 65 that, along with the Southern Pacific Railroad line, separate the area from existing residential areas to the east. To the south is a mix of older, and new, residential neighborhoods with large lot residential areas south of Baseline Road in the unincorporated area of Placer County. The property to the west of the Plan Area consists of undeveloped grasslands with scattered oak woodlands. The area is used primarily for cattle grazing and is designated with urban reserve land use.

C. PLAN AREA SETTING

The Northwest Roseville Specific Plan Area consists of open grassland interspersed with groves of native oaks and clusters of limited riparian vegetation along water courses. Much of the area has been utilized for grazing. Topography is gently rolling in character with elevations ranging from 100 to 155 feet above mean sea level. The principal

FIGURE 1



LOCATION MAP

FIGURE 1



drainage features in the Plan Area consist of a network of drainage swales which connect with Kaseberg Creek and the South Branch of Pleasant Grove Creek. Both creeks are part of the Pleasant Grove Drainage Basin and water flow in these tributaries is intermittent.

The geologic formations in the Plan Area include alluvium fan deposits, terrace deposits, Vicor and Valley Springs sandstone, and Laguna siltstone. No active faults are located in or near Roseville and the area is in a "Low Severity" earthquake zone. The four soil types in the Plan Area (Cometa-Fiddymont Complex, the Cometa-Romona Sandy Loam, the Fiddymont Loam, and Xerofluvents) are generally considered firm soil layers which possess high runoff potential and low expansion and compressibility characteristics.

The Plan Area, in common with much of Roseville, encompasses vernal pools, small depressions, underlain by hardpan, that fill with water during rainy periods and dry up in the spring. These pools often support unusual and sometimes rare plants and animals. Riparian woodland vegetation is found upstream in tributaries of Kaseberg Creek and in the South Branch of Pleasant Grove Creek. This vegetation is composed of trees which include Valley Oak, Blue Oak, Black Oak, Live Oak, Scrub Oak, Willow and Cottonwood. The under story vegetation consists primarily of grasses, herbs, blackberry, miner's lettuce, and buck brush.

Wildlife in the Northwest Plan Area is typical with that found in the region. Species associated with the grassland areas include pocket gophers, black-tailed jack rabbits, meadowlarks, horned larks, and other species adapted to open habitats. Wildlife associated with the oak woodland and riparian areas include small mammals, lizards, red-tailed hawk, woodpeckers, mourning dove, yellow-billed magpie and common crow. The relatively thick vegetation along the stream course areas provide forage and cover for these species.

Portions of the Specific Plan Area are developed or were approved for development prior to the inception of the Specific Plan process. Although these projects are within the Plan Area, they are essentially exempt from the Specific Plan process. In total, approximately 2900 units have been approved within the Northwest Plan Area with approximately 1300 of these units, and a 12-acre retail commercial site, constructed or under construction. Major roadways previously implemented in the Plan Area include Foothills Boulevard and Junction Boulevard from Washington Boulevard to a point approximately 2500 feet west of Foothills Boulevard. The site is bisected by a 450-foot wide high voltage transmission line easement which presents a constraint to development.

SPECIFIC PLAN CHARACTERISTICS

A. INTENT

It is the intent of the Specific Plan process to establish a framework which will direct development within the Northwest Plan Area. Buildout of the Plan Area is anticipated over the next 25 to 40 years. The process permits the City to plan, implement, monitor and coordinate development within the Plan Area over the long term. The Specific Plan process also presents the opportunity for Roseville to insure implementation of its General Plan policies in a manner which is responsive to the localized needs and environment of the Northwest Plan Area. All development within the Plan Area will be required to comply with the provisions set forth in the Northwest Roseville Specific Plan.

B. PLAN ELEMENTS

The Northwest Roseville Specific Plan will contain the following major elements:

1. A detailed discussion of the opportunities and constraints inherent to the property and the methodology used in developing the Plan.
2. Specific Plan Elements and policies describing the location and extent of all land uses in the Plan Area along with a land use diagram. All elements will contain policies and detailed implementation measures.
3. Specific Plan elements and policies describing the location and extent of major components of public infrastructure and services required to support the proposed land uses. Such infrastructure and services include roadways, schools, libraries, parks, fire stations, police service, water systems, sewer systems, storm drainage, street lighting, electricity, natural gas and telephone service. All elements will contain policies and detailed implementation measures.
4. A development and infrastructure phasing plan.
5. Design and landscaping guidelines established to address specific development conditions and building types expected within the Plan Area.
6. A discussion of implementation techniques including zoning, C, C & R's, development agreements and project financing.

It is intended that rezoning and approval of development agreements for the affected properties will occur as part of the Specific Plan process.

C. SPECIFIC PLAN DESCRIPTION

The Northwest Roseville Specific Plan Area encompasses a total of approximately 2,300 acres. The Plan is proposed to be primarily residential with 8,679 units and various support uses and facilities. The land uses proposed within the Plan Area are listed in Table 1 and

are illustrated on the Northwest Roseville Specific Plan Land Use Map (Figure 2). The primary characteristics of the Plan are summarized below:

Residential: The Northwest Roseville Specific Plan proposes a total of 8,679 units, with maximum allowable densities ranging from 3.2 to 20 units per acre. Utilizing an average of 2.60 persons per dwelling unit, this would result in an ultimate buildout population of 22,565 residents. It is envisioned that the Plan Area will be organized into a series of identifiable "neighborhoods" or "villages" separated by arterials, easements or open space. The residential nature of the Plan Area is intended to complement the large employment center located immediately to the north. The Northwest Plan will include provisions to meet City affordable housing goals.

Commercial: 106.9 acres of commercial land use are proposed in the Plan Area. This allocation includes both community and neighborhood centers intended to serve the needs of the Plan Area residents. All the commercial land use within the Northwest Plan Area is proposed to be retail in nature.

Business Professional Office: The Northwest Plan proposes 48.1 acres of Business Professional Office land use. This designation will provide professional services to Plan Area residents and is not intended to be utilized as corporate headquarters or by high-employee intensive uses.

Light Industrial: One (1) parcel totaling 14.4 acres has been designated for Light Industrial use.

Urban Reserve: The Specific Plan designates approximately 208 acres for urban reserve. These areas will be retained in open space, although they may be considered for urbanization sometime in the future. Additional analysis would be required before such areas could be granted alternative land use.

Golf Course: Approximately 174 acres of land are designated in the northern portion of the Plan Area for a City-owned and -operated golf course. This course is proposed to be interrelated with adjacent residential units to form a golf-course-oriented community.

Parks: Over 124 acres have been designated as City parks. These include a system of neighborhood and community level parks to serve the residents of the immediate area. This allocation includes a 64.7-acre City-wide park designated within the Plan Area. A portion of the Pleasant Grove floodway has been proposed as natural preserve park.

Schools: A total of six school sites have been designated within the Northwest Plan Area. These include two K-6 elementary school sites and an intermediate school site for the Dry Creek School District, and two elementary school sites for the Roseville City School District. In addition, a 41.6-acre high school site has been designated for the Roseville Joint Union High School District.

Library: A branch of the Roseville City Library is proposed within the 64.7-acre City-wide park site.

TABLE 1

Northwest Roseville Specific Plan Land Use Summary

A. Non-Residential Land Use		Acres	
<u>Business/Commercial Uses</u>			
Business Professional		48.1	
Commercial		106.9	
Light Industrial		14.4	
	<i>Sub-Total</i>	169.4	
<u>Parks</u>			
Parks A-I		59.4	
Floodway/Fringe Areas		40.4	
City Wide Park		64.7	
Golf Course		174.0	
	<i>Sub-Total</i>	338.5	
<u>Other</u>			
Electrical Substation		0.5	
Fire Station		1.0	
Private School		3.1	
Schools (K-6)		30.0	
School (7-8)		18.0	
High School		41.6	
Church		8.4	
	<i>Sub-Total</i>	102.6	
	TOTAL	610.5	
B. Residential Land Use		Acres	Dwellings
R-3.2	129.8	415	
R-4	266.3	1,070	
R-4.3	42.6	183	
R-4.4	473.5	2,115	
R-4.5	85.5	389	
R-4.8	45.6	219	
R-5	69.7	321	
R-6	90.0	810	
R-7	45.0	315	
R-7.5	144.0	1,076	
R-8	18.5	148	
R-10	41.6	416	
R-12	7.0	84	
R-13.6	19.6	266	
R-15	16.5	150	
R-20	36.1	702	
TOTAL	1,531.3	8,679	

May, 1988

Fire Station: A City fire station site exists within the Plan Area and is intended to serve the full needs of the built-out Plan.

Churches: 8.4 acres have been designated for church sites.

Utilities: The extension of new lines and connection to existing trunk lines will be required due to development of the Plan Area. Water, sewer and electric services as well as solid waste disposal will all be provided by the City of Roseville. Natural gas will be provided by Pacific Gas and Electric and telephone service by Roseville Telephone.

Circulation: The Specific Plan will include an extensive system of arterial, collector and local roadways. These include the existing Foothills Boulevard, the extension of Junction Boulevard west to the edge of the Plan Area, a new east/west arterial in the northern portion of the Plan Area, and the northern extension of Cook-Riolo Road through the Plan Area and north into the adjacent industrial area. Landscape parkways are proposed along all major roadways. Provisions are also to be included for both on-road and off-road bicycle and pedestrian systems, bus service and other alternative transportation systems.

D. IMPLEMENTATION:

Full implementation of the land uses proposed in the Northwest Roseville Specific Plan would include the following approvals:

1. E.I.R. certification
2. Specific Plan Approval/General Plan Amendment
3. Rezone Approval
4. Approval and execution of development agreements
5. Subdivision of the property consistent with the approved land use and zoning designations
6. Approval of specific site review, use permits or subdivision maps for the individual projects. This may include additional State or Federal required permits for the individual projects.
7. Issuance of building permits for the individual projects.
8. Issuance of occupancy permits for the completed projects.

Any future modifications to the Specific Plan would require full processing as a General Plan Amendment.

PROJECT IMPACTS

A. IMPACTS

The enclosed Environmental Checklist Form has identified a number of potential impacts which could be associated with this project. These include potential impacts relating to Geology and Soils, Air Quality, Hydrology and Water Quality, Vegetation and Wildlife, Noise, Land Use, Population, Housing, Transportation/Circulation, Public Services, Energy, Utilities, Aesthetics, Recreation, Cultural Resources and Fiscal Impacts. The Environmental Checklist Form details these potential impacts and includes a short explanation for each.

B. DETERMINATION:

In accordance with the findings of the enclosed Environmental Checklist form, it is determined that the project may have a significant effect upon the environment. The preparation of an Environmental Impact Report is, therefore, required. This report will address the impacts identified in the Environmental Checklist Form, as well as any others discovered during the E.I.R. process. The E.I.R. will also be required to address the cumulative impacts of the proposal as well as feasible alternatives to the project.

ENVIRONMENTAL CHECKLIST FORM

I. BACKGROUND

1. Name of Proponent Wade Associates
2. Address and Phone Number of Proponent
735 Sunrise Avenue
Roseville, CA 95678
(916) 783-8980
3. Date of Checklist Submitted May 17, 1988
4. Agency Requiring Checklist City of Roseville
5. Name of Proposal, if applicable Northwest Roseville Specific Plan

II. ENVIRONMENTAL IMPACTS

(see below for explanations of all "yes" and "maybe" answers.)

1. Earth. Will the proposal result in:	Yes	Maybe	No
a. Unstable earth conditions or, in changes in geologic substructures?	___	___	<u>X</u>
b. Disruptions, displacements, compaction or overcovering of the soil?	<u>X</u>	___	___
c. Change in topography or ground surface relief features?	<u>X</u>	___	___
d. The destruction, covering or modification of any unique geologic or physical features?	___	<u>X</u>	___
e. Any increase in wind or water erosion of soils, either on or off the site?	___	<u>X</u>	___
f. Changes in deposition of erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	___	<u>X</u>	___
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	___	<u>X</u>	___

ENVIRONMENTAL IMPACTS (continued)

	YES	MAYBE	NO
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	<u>X</u>	—	—
b. The creation of objectionable odors?	—	—	<u>X</u>
c. Alteration of air movements, moisture or temperature or any change in climate, either locally or regionally?	—	—	<u>X</u>
3. Water. Will the proposal result in:			
a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters?	—	—	<u>X</u>
b. Changes in absorption rates, drainage patterns or the rate and amount of surface water runoff?	<u>X</u>	—	—
c. Alterations to the course or flow of flood waters?	<u>X</u>	—	—
d. Change in the amount of surface water in any water body?	—	<u>X</u>	—
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	—	<u>X</u>	—
f. Alteration of the direction or rate of flow of ground waters?	—	<u>X</u>	—
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	—	<u>X</u>	—
h. Substantial reduction in the amount of water otherwise available for public water supplies?	—	<u>X</u>	—
i. Exposure of people or property to water related hazards such as flooding or tidal waves?	—	<u>X</u>	—

II. ENVIRONMENTAL IMPACTS (continued)

	YES	MAYBE	NO
4. Plant Life. Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	<u>X</u>	—	—
b. Reduction of the numbers of any unique, rare or endangered species of plants?	—	<u>X</u>	—
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	—	<u>X</u>	—
d. Reduction in acreage of any agricultural crop?	<u>X</u>	—	—
5. Animal Life. Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	—	<u>X</u>	—
b. Reduction of the numbers of any unique, rare or endangered species of animals?	—	<u>X</u>	—
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	—	<u>X</u>	—
d. Deterioration to existing fish or wildlife habitat?	—	<u>X</u>	—
6. Noise. Will the proposal result in:			
a. Increases in existing noise levels?	<u>X</u>	—	—
b. Exposure of people to severe noise levels?	—	—	<u>X</u>
7. Light and Glare. Will the proposal produce new light or glare?	<u>X</u>	—	—
8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?	<u>X</u>	—	—

II. ENVIRONMENTAL IMPACTS (continued)

	YES	MAYBE	NO
9. Natural Resources. Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	___	___	<u>X</u>
b. Substantial depletion of any nonrenewable natural resource?	___	___	<u>X</u>
10. Risk of Upset. Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset condition?	___	<u>X</u>	___
b. Possible interference with an emergency response plan or an emergency evacuation plan?	___	___	<u>X</u>
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	<u>X</u>	___	___
12. Housing. Will the Proposal affect existing housing, or create a demand for additional housing?	<u>X</u>	___	___
13. Transportation/Circulation. Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	<u>X</u>	___	___
b. Effects on existing parking facilities, or demand for new parking?	<u>X</u>	___	___
c. Substantial impact upon existing transportation systems?	<u>X</u>	___	___
d. Alterations to present patterns of circulation or movement of people and/or goods?	<u>X</u>	___	___
e. Alterations to waterborne, rail or air traffic?	___	<u>X</u>	___
f. Increase in traffic hazards to motor vehicles, bicycles or pedestrians?	<u>X</u>	___	___

II. ENVIRONMENTAL IMPACTS (continued)

	YES	MAYBE	NO
14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire Protection?	<u>X</u>	___	___
b. Police Protection?	<u>X</u>	___	___
c. Schools?	<u>X</u>	___	___
d. Parks or other recreational facilities?	<u>X</u>	___	___
e. Maintenance of public facilities, including roads?	<u>X</u>	___	___
f. Other governmental services?	<u>X</u>	___	___
15. Energy. Will the proposal result in:			
a. Use of substantial amount of fuel or energy?	<u>X</u>	___	___
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	___	___	<u>X</u>
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
a. Power or natural gas?	<u>X</u>	___	___
b. Communications systems?	<u>X</u>	___	___
c. Water?	<u>X</u>	___	___
d. Sewer or Septic tanks?	<u>X</u>	___	___
e. Storm water drainage?	<u>X</u>	___	___
f. Solid waste and disposal?	<u>X</u>	___	___
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	___	<u>X</u>	___
b. Exposure of people to potential health hazards?	___	<u>X</u>	___

ENVIRONMENTAL IMPACTS (continued)

	YES	MAYBE	NO
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	<u>X</u>	—	—
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	<u>X</u>	—	—
20. Cultural Resources.			
a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?	—	<u>X</u>	—
b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	—	<u>X</u>	—
c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	—	<u>X</u>	—
d. Will the proposal restrict existing religious or sacred uses within the potential impact area?	—	<u>X</u>	—
21. Mandatory Findings of Significance			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	—	<u>X</u>	—
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (a short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)	—	<u>X</u>	—

ENVIRONMENTAL IMPACTS (continued)

YES MAYBE NO

- c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.) X
- d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? X

EXPLANATION OF "YES" AND "MAYBE" ANSWERS:

1.(b)(c) The proposal will require grading to prepare individual sites within the plan area for development.

1.(d) No known unique geologic or physical features will be destroyed, covered, or modified by implementation of this project, however, should any such features be found on the site, appropriate disposition will be identified.

1.(e)(f) It is likely that soil erosion within the plan area will increase during the period when individual projects are under construction.

1.(g) Development of the site will result in increased persons and property on the site which could be affected by geologic hazards. No site specific geologic hazards have been identified.

2.(a) The proposal will result in a concentration of motor vehicle traffic on the site. The resulting air emissions will be greater than at present.

3.(b)(c) Implementation of the plan will result in the addition of impervious surfaces in the form of roadways, driveways, and rooftops to the area. This will cause an increase in the amount of runoff flowing from the site, and a decrease in the time required to reach peak flow volumes.

3.(d)(e) Implementation of the proposal is likely to result in changes in both water quality and quantity in the streams which flow through and are downstream of the plan area.

3.(f)(g) It is likely that the rate and location of groundwater recharge will be altered by implementation of the plan.

3.(h) Implementation of the plan will result in an increase in the volume of domestic water utilized within the City.

3.(i) Implementation of the plan presents the possibility that persons or property could be exposed to flooding of the streams within the plan area. Alterations to drainage courses within the plan area could also result in additional downstream flooding.

4.(a)(b) Implementation of the plan will result in a significant alteration of the existing vegetation conditions on the site. It is possible that rare, unique, or endangered plants could be affected.

4.(c) The implementation of the plan will result in the addition of domestic trees and shrubs as part of landscaping throughout the site. Replenishment of existing species could be affected.

4.(d) The area is not a prime agricultural area. Current use is primarily low intensity grazing, with a minor amount of dry land grain cropping. Implementation of the plan will result in the eventual replacement of these uses with urban uses.

5.(a) Implementation of the plan will result in substantial alterations of wildlife habitat conditions within the plan area, with resulting changes in species composition.

5.(b) It is possible that rare, unique, or endangered species of animals could be affected by the proposal.

5.(c) Implementation of the proposal will result in the introduction of domestic pets into the area in greater numbers than at present. This could have a negative effect upon existing indigenous species.

5.(d) It is possible that both aquatic and terrestrial habitat could deteriorate as a result of the proposal.

6.(a) Noise levels within and adjacent to the plan area will increase, due to the increased level of human occupation.

7. New light and glare will be produced by the proposal.

8. Implementation of the proposal will result in a substantial change from the existing low intensity use of the major portion of the plan area. No substantial changes from planned land uses are anticipated.

10.(a) The volume of potentially explosive or hazardous substances utilized within the plan area will increase both temporarily during construction activities and permanently with the changed land uses anticipated.

11. The proposal will result in a substantial increase in the human population of the site.

12. The proposal will both create a demand for housing and provide housing.

13.(a) The proposal will result in a substantial increase in the amount of motor vehicle traffic within and surrounding the plan area.

13.(b) The proposal will increase demand for parking within the plan area.

13.(c)(d) Implementation of the proposal will result in a substantial impact upon existing regional transportation systems and will alter present patterns of circulation and movement of people and goods.

13.(e) It is likely the proposal will alter local rail traffic to some extent.

13.(f) The increase in traffic resulting from the project will result in an increase in traffic related accidents within the plan area.

14.(a-f) Implementation of the proposal will result in the need to furnish all major governmental services to the site.

15.(a) The proposal will result in a substantial increase in the amount of energy utilized within the plan area.

16.(a-f) Implementation of the proposal could result in the need for new or substantially altered systems for provision of all of the major utilities.

17.(a)(b) Implementation of the proposal could create or expose people to health hazards.

18. Implementation of the proposal will result in a substantial alteration of the existing aesthetic environment of the plan area. This change will be aesthetically offensive to some persons and pleasing to others.

19. The proposal will result in the need for additional recreational facilities.

20.(a-d) Implementation of the proposal carries the potential for the alteration or destruction of items of historic, archaeological, or cultural value.

21.(a-d) Implementation of the proposal could potentially degrade the quality of the environment, could potentially achieve short term environmental goals at the expense of long term goals, potentially has effects which are cumulatively considerable, and could potentially have substantial direct or indirect adverse effects on human beings.

IV. DETERMINATION

On the basis of this initial evaluation:

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

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED.

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

Date May 17, 1988

Janis E. James
(Signature)

For City of Roseville

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Superintendent,
Dry Creek School District 2955 PFE Rd., Rsvl 95678

Superintendent,
Roseville Elementary School Dist. 1000 Darling Way, Rsvl 95678

Superintendent,
Roseville Joint Union HSD 120 Main St., Rsvl 95678

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- . Department of Transportation Planning
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- . Regional Water Quality Control Board

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Department of Housing & Urban Dev. 777 12th St., Sacto 95814

Environmental Protection Agency, 215 Fremont St., S.F. 94105
Region IX

U.S. Army Corps of Engineers 650 Capitol Mall, Sacto 95814

U.S. Fish & Wildlife Service 2800 Cottage Way, RM E-1803,
Sacto 95825

U.S. Post Office, Postmaster 324 Vernon St., Rsvl 95678

OTHER AGENCIES

American Lung Association	909 Twelfth St., St.100, Sacto 95814
California Native Plant Society	4701 Minnesota Ave. Fair Oaks 95628
Friends of the RSVL Parkway	1411 VinMar Ct. Rsvl 95661
Granite Bay Association, Sandra Harris	5911 Reba Dr., Granite Bay 95661
Pacific Gas & Electric	1050 High St., Auburn 95603
Placer Indian Association	891 Indian Rancheria Rd., Auburn 95603
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Sacramento Audubon Society	555 Audubon Pl., Sacto 95814
Sacramento Bee, Placer Co. Editor	10 Fullerton Ct., Sacto 95825
SMUD Land Dept., Keith Shorey	P.O. Box 15830, Sacto 95813
Sacramento Regional Transit	P.O. Box 2110, Sacto 95810
Sage Institute, Dr. Joel Kirschenstein	2835 Townsgate Rd. #208 Westlake Village 92362
Sierra Club, Sac Valley Group	1360 Perkins Way, Sacto 95818

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Roland Bergthold, Sierra College	5000 Rocklin Rd., Rocklin 95677
Bill Zisk	205 Thomas, Rsvl 95678

PROJECT PROPONENTS/CONSULTANTS

H.C. Elliot, Inc. (Russ Davis, Bob Holmes)	11093 Sun Center Dr., R.C. 95670
Sammis Co. (Ron Alverado, Frank Anderson)	1451 River Park Dr. St.110 Sacto 95815
Southmark Pacific Corp.	1398 Blue Oaks Blvd., Rsvl 95678
PAMA Development (Mark Cunningham)	9719 Lincoln Village Dr. #409 Sacto 95027
John Mourier Construction	1830 Vernon St. #8, Rsvl 95678
Americana Partnership (Bill Rutherford)	11275 Sunrise Gold Cr. #Q R.C. 95670
R.C. Fuller Assoc.	5908 Fair Oaks Blvd., Carmichael 95608

Wade Associates	735 Sunrise Ave. Ste. 145, Rsvl 95678
Morton & Pitalo, Inc. (Ken James)	1430 Alhambra Blvd. #200 Sacto 95816
Fehr & Peers Associates	3685 Mt. Diablo Blvd., Ste.200 Lafayette 94549
Larry Stromberg	1048 Santa Fe Ave., Albany 94706

**Northwest Roseville Specific Plan
Vernal Pool Inventory**



APR 21 1988

Laurence P. Stromberg, Ph.D.

Consulting Plant Ecologist

1048 Santa Fe Avenue, Albany, CA 94706

(415) 524-8537

April 20, 1988

Mr. Ronald Alvarado
Vice President
The Sammis Company
1451 River Park Drive, Suite 110
Sacramento, CA 95815

SUBJECT: NORTHWEST ROSEVILLE URBAN RESERVE VERNAL POOL SURVEY

Dear Ron:

In my previously submitted report of the survey of the vernal pools in the urban reserve area in the northwest corner of the Northwest Plan Area I indicated that an additional field visit would be undertaken to determine the taxonomic identity of some grasses which were unidentifiable at the time the survey was conducted. Although I considered the probability low, my concern was that they might be orcuttia seedlings. Orcuttias are typically late-germinating species which, should they be present, would have been in the seedling stage at the time of the first field visit.

I made the additional visit to the site last Friday, April 15. I checked all the pools which contained grass seedlings and found that enough additional growth had occurred for them to be identifiable. They are not orcuttia but rather Lemmon's canarygrass (Phalaris lemmonii) and Howell's foxtail (Alopecurus howellii). No orcuttia is present. Hoover's spurge (Chamaecyse hooveri), also a late-germinating species, is sensitive. At the same time I checked for the oprcuttia I checked to see whether or not any spruge was present and found none.

This visit, therefore, concludes the necessary rare plant survey of the vernal pools in the previously unsurveyed portion of the Northwest Specific Plan Area. No additional mitigation is warranted elsewhere in the Plan Area because of the presence of these pools.

Sincerely,



Laurence P. Stromberg, Ph.D.
Consulting Plant Ecologist

Laurence P. Stromberg, Ph.D.

Consulting Plant Ecologist

1048 Santa Fe Avenue, Albany, CA 94706

(415) 524-8537

**VERNAL POOL MITIGATION
NORTHWEST ROSEVILLE SPECIFIC PLAN AREA
ALTERNATIVE RECOMMENDATION**

1.0 INTRODUCTION

At the request of Mr. Ron Alvarado, I visited the offices of The Sammis Company on several occasions to discuss vernal pool preservation at Woodcreek Oaks, the proposed project area north of the east-west transmission line through the center of the Northwest Roseville Specific Plan Area. The purpose of the meetings was to determine how impacts on vernal pools could be minimized through avoidance and preserves other than those recommended in my July 1987 report. The request was made in part because of changes in the proposed alignment of Carlsberg Road and surrounding uses. Our attention was focused primarily on the golf course, included and adjacent residential areas, and adjacent park sites.

In May of 1988 I met with Mr. Alvarado and Mr. Anthony Guzzardo, the land planner for the Specific Plan Area, to discuss pool preservation within the context of the most recent golf course plan prepared by John Muir Graves (dated April 25, 1988). The following mitigation recommendations are based upon that plan. The alternative mitigation recommendation, which actually includes both mitigation (avoidance) and compensation, would accomplish equivalent reduction in impacts on vernal pools in the Northwest Roseville Specific Plan Area. Over 80 percent of the pools in the Specific Plan Area would still be destroyed and, even with the alternative mitigation, they would remain significant.

2.0 ORIGINAL MITIGATION RECOMMENDATIONS

In my July 1987 report I recommended two preserves (see Figure 5 of that report) in the center of the Specific Plan Area between the transmission line and Carlsberg Blvd. Preserve 1 encompassed a small basin near the divide between Kaseberg and Pleasant Grove Creek watersheds. Preserve 2 contained pools on a south-facing slope adjacent to a 32-acre community park proposed in the easement.

The pools in the original preserves, and "pool 71", which I recommended be preserved in the northwest corner of the golf course, are among the highest-quality pools in the Specific Plan Area. Preserve 1 would have been approximately 33 acres and would have contained 10 vernal pools. Preserve 2 would have been

approximately 18 acres and contained 19 pools. Approximately 10 pools would have been preserved in the golf course. Together, the preserves and golf course would have contained approximately 12 percent of the pools in the Northwest Specific Plan Area.

3.0 ALTERNATIVE MITIGATION RECOMMENDATION

This alternative plan to impact reduction includes both mitigation and compensation. Avoidance (mitigation) would be accomplished by establishing two vernal pool preserve areas within which no existing pools would be disturbed. Partial restoration of values lost due to the destruction of pools not preserved (compensation) would be accomplished by enhancing poor-quality pools and creating new pools in the preserves.

Pool creation and enhancement details provided below are preliminary. Additional details would have to be developed and a preserve management plan would be necessary before the recommended mitigation could be implemented.

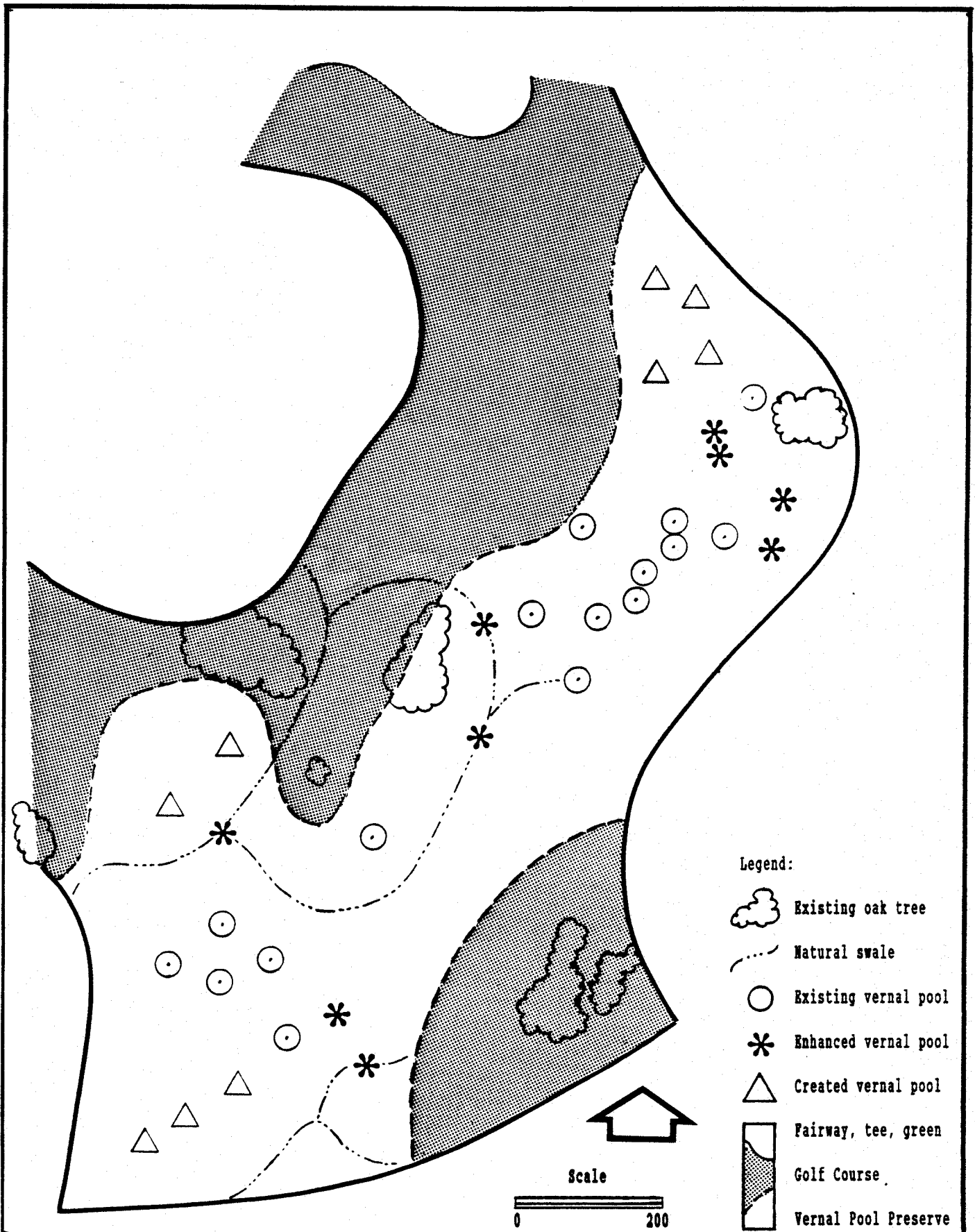
3.1 Mitigation (Preserves)









Two areas containing vernal pools would be left intact and undisturbed in natural annual grassland surroundings. The limits of these areas were set so that they would include the same number of existing pools as the original preserves, several sites at which the potential exists to create new pools, and so that each preserve would be large enough to contain a sufficient hydrologic buffer area.

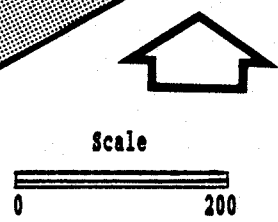
The larger area (the Golf Course Preserve) would be at the extreme south end of the golf course (Figure 1). The smaller area (the Park Preserve) would occupy part of a small neighborhood park across Carlsberg Blvd. from the Golf Course Preserve (Figure 2). The locations of the two preserves are shown on the Specific Plan.

The Golf Course Preserve would be approximately 14 acres and contain 25 existing vernal pools. The Park Preserve would be approximately five acres and would contain only four pools, one of which is an extremely large, apparently man-made pool at the south end of the neighborhood park. The combined area of the preserves would be 19 acres, depending on the size of the park.

The Golf Course Preserve would require the redesign of at least the 14th and 15th holes and potentially others, and require land

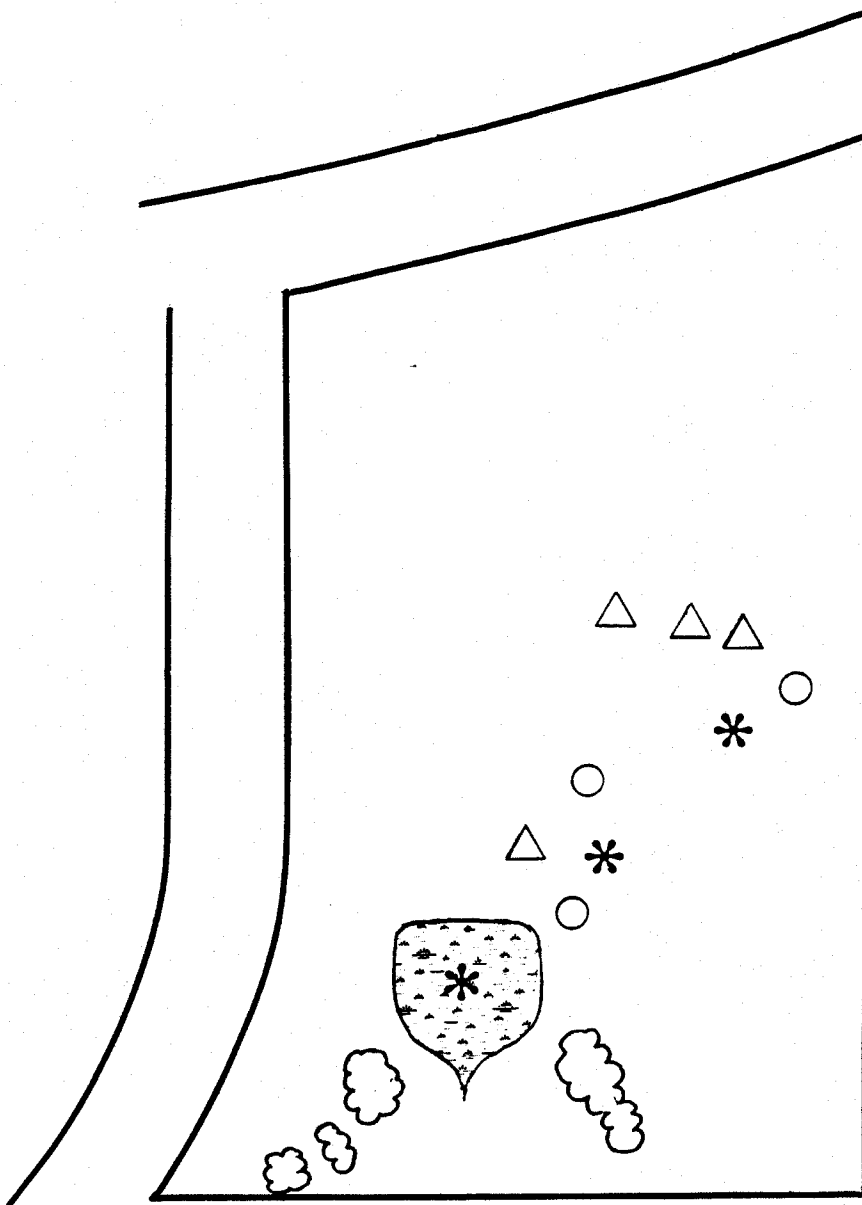


- Legend:
-  Existing oak tree
 -  Natural swale
 -  Existing vernal pool
 -  Enhanced vernal pool
 -  Created vernal pool
 -  Fairway, tee, green
 -  Golf Course
 -  Vernal Pool Preserve

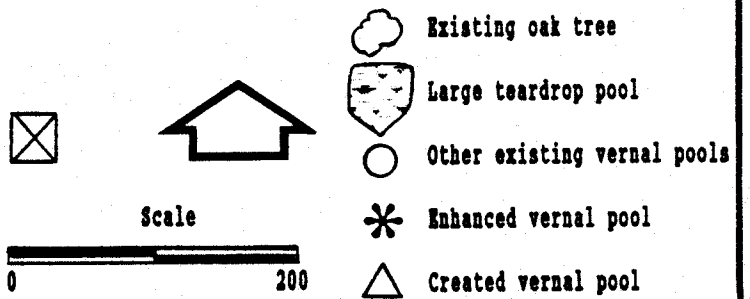


Laurence P. Stromberg, Ph.D.
 Consulting Plant Ecologist

Figure 1. Golf Course Preserve



Legend:



Laurence P. Stromberg, Ph.D.
 Consulting Plant Ecologist

Figure 2. Park Preserve

on the east side of the preserve for which residential lots are currently proposed. Tees, greens, fairway, and other managed features could be constructed around the preserve as long as the potentially adverse impacts of irrigation, runoff, and the application of chemical fertilizers, etc. on the pools in the preserve are avoided (discussed below).

The Park Preserve could require an increase in the size of the proposed neighborhood park of which it would be a part. Within the preserve only "linear" recreation facilities such walking paths and par courses, which don't require blocks of area, could be constructed. The constraints identified for the Golf Course Preserve apply to the Park Preserve; potential hydrologic impacts would have to be avoided.

The Golf Course Preserve would contain all of the pools in the "bowl" circumscribed by original Preserve 1 and would extend northeast to include several other pools on level terrain near the Kaseberg Creek-Pleasant Grove Creek watershed divide. Among these pools is the very high-quality pool that contains both dwarf downingia (Downingia humilis) and the state-listed Bogg's Lake hedge hyssop (Gratiola heterosepala). The Golf Course Preserve also contains the swale which connects pools near the watershed divide with those in the bowl.

The Park Preserve would contain three small, shallow "satellite" pools at the northeast margin of a large teardrop-shaped pool at the lower end of the preserve. The pools are relatively rich floristically.

Descriptive details on the vernal pools in the two new preserve areas are contained in Table 1. Overall, the pools in the two preserves are moderately deep, of average size, and of better-than-average floristic quality. Average pool size in the preserve is inflated because of the large pool; the satellite pools are actually quite small.

3.2 Compensation

3.2.1 Pool Enhancement

To compensate for impacts on vernal pools, several existing pools would be enhanced and others would be created in each preserve. Vernal pool creation and enhancement are not the equivalent of avoidance because of the lack of documented success and risk of failure, and the absence of values during the period over which

Alternative Mitigation
May 25, 1988

the flora and microfauna are developing in the new pools. Nevertheless, each preserve offers opportunities for creation and enhancement which can be exploited to produce added vernal pool values (and compensate for filled wetland pools, as the U. S. Army Corps of Engineers may require to obtain a permit to discharge the into vernal pools and other on-site wetlands) without adversely affecting the hydrology of existing pools.

Figures 1 and 2 show the existing vernal pools in the Golf Course Preserve, and identify those which would be enhanced as well as the sites at which, based on a preliminary assessment of site conditions, it appears possible to create others. Table 1 indicates the number of pools to be enhanced and created.

In some cases, enhancement would involve only introducing seed collected from pools to be destroyed. Not all pools require seeding but many could benefit from it. Some are poor-quality pools deep enough to provide sufficiently long inundation but, for some reason, lack a well-developed pool flora. Others are shallow pools which could be improved by increasing their depth and/or their outlet elevations, thereby increasing the depth and duration of inundation. These pools would be seeded to accelerate the development of species not originally present.

Topographic position, the balance between pool volume and available water, and the depth to the impervious subsurface layer determine whether or not enhancement of a particular pool could succeed and what physical modifications enhancement would require. Shallow pools on level ground, ie. those near the watershed divide in the northeast part of the Golf Course Preserve, that could store additional water if they were deeper, could be excavated if the hardpan or impervious layer is deep enough. Repeated spilling prior to enhancement indicates potentially "unused" available water". A deep hardpan indicates that excavation would not critically reduce the post-ponding period of soil saturation.

On sloping terrain and in swales, enhancement could be accomplished by either raising the pool outlet elevation and/or by excavating to lower the bottom of the pool. Outlet elevations can be raised in pools situated in swales or on slopes by constructing a small soil berm or barrier of soil imported from another site or excavated behind the barrier. In swales, the method of choice would depend upon the surface gradient and width of the swale; on

TABLE 1.
COMPARISON OF ORIGINAL AND REVISED
VERNAL POOL MITIGATION RECOMMENDATIONS

Original recommendation:

	<u>Preserve 1</u>	<u>Preserve 2</u>
Preserve area (acres)	33	18
Average pool depth (inches)	4.5	6.0
Average pool size (square feet)	399	501
Number of existing pools	10	19
Approximate total pool area (acres)	0.09	0.22
Average number of vernal pool species/pool	17.3	17.5
Number of pools created	0	0
Number of pools enhanced	0	0
Preserve area/pool area ratio	366	82

Revised recommendation:

	<u>Golf Course Preserve</u>	<u>Park Preserve</u>
Preserve area (acres)	14	5
Average pool depth (inches)	5.1	4.6
Average pool size (square feet)	774	5481
Number of existing pools	25	4
Approximate total pool area (acres)	0.44	0.50
Average number of vernal pool species/pool	15.9	17.8
Number of pools created	9	4
Approximate area of created pools (acres)	0.16	0.05
Number of pools enhanced	9	3 or 4
Preserve area/pool area ratio	32	10

The pool area used to calculate the preserve area/pool area ratio does not include the area of any created pools, or account for possible pool filling which may be necessary to increase depth and duration of inundation in one large pool in the Park Preserve.

upland slopes it would depend upon slope gradient and pool shape and depth.

Deepening would not be the only method used to enhance pools. The large teardrop-shaped pool at the southern margin of the Park Preserve be too large to fill completely on a regular basis. Given the same input from direct precipitation and overland flow, the depth of inundation could be increased by decreasing pool volume. That would be accomplished by building islands in the pool. Elevation of the pool outlet barrier may or may not be necessary.

3.2.2 Pool Creation

The sites at which pool creation is proposed were selected on the basis of overall preserve topography, local microtopographic variation, and the distribution and observable hydrologic connections among existing pools. At least nine sites were identified in The Golf Course Preserve and four sites in Park Preserve at which it appears feasible to create vernal which pools. Most of these sites are slight surface depressions or are in areas characterized by the mound-and-depression microtopography in which the well-developed pools occur. In both settings, the depressions typically contain species such as Mediterranean barley (Hordeum geniculatum) and perennial ryegrass (Lolium perenne), which are found more typically in vernal pools than in the surrounding grassland and indicate site wetness. Some also contain coyote thistle (Eryngium vaseyi), a common vernal pool species found also in swales and depressional terrain.

Pools would be created only where they would not truncate the surface watershed tributary or intercept surface water that flows into existing downslope pools. Construction of a pool which would capture water that originally flowed into a natural pool would not constitute compensation if, in capturing the water, it deprived the natural pool of water and caused it to decline in value.

The pool creation sites shown in Figures 1 and 2 are tentative. Borings to characterize subsurface conditions in existing pools and at proposed sites would be necessary to determine whether or not the impervious layer that perches water and causes ponding in the existing pools are present at the sites where the new pools are to be created. Where such conditions are not present but the site location is suitable because of its hydrologic isolation from existing pools, (imported) bentonite could be mixed with the subsoil to create an impervious layer.

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If, under section 404 of the Clean Water Act, the Corps of Engineers requires an individual permit for the discharge of fill into the vernal pools and other waters on the project site, the permit would almost certainly require mitigation and/or compensation. It is also possible that both could be required even if the fill is permitted under Nationwide Permit 26.

Independent of 404 permit requirements, the plan to enhance and create pools to compensate for lost values would require at least the following provisions:

1. seed would be collected (vacuumed) from pools that would be destroyed. Based on the original 1987 report, those pools which are known to be floristically rich but to contain little or no Carter's buttercup (Ranunculus bonariensis var. trisepalus) (undesirable when present in great abundance because it forms mats which exclude other species). The top two inches of soil would also be excavated from pools to be destroyed and be stockpiled. (Dwarf downingia seed would be collected separately and be seeded into existing pools which appear similar in size, depth, and hydrologic regimen to those from which it was collected);
2. borings would be made in existing pools and at each site at which a new pool would be created to characterize subsurface conditions (soil texture and depth, hardpan presence and permeability, etc.).
3. the volume (depth, topographic configuration, and area) of created pools would be determined on the basis of additional limited hydrologic analysis and the results of the borings. The hydrologic analysis would also produce data useful in determining how created and existing (enhanced) pools might be hydrologically connected where the connection would beneficially increase the size of the tributary watershed and the supply of water;
4. newly constructed pools would be inoculated with the collected seed. Seed mixtures and seeding rates would be based on the amount of seed collected and the total area of pools created. Some seed would be sown into existing pools to enhance their floristic richness;
5. hydrologic monitoring would be conducted in created and enhanced pools to assess the adequacy of the water supply

and, in created pools for which an impervious layer was constructed, to determine whether or not it is functioning as required. Monitoring results would be used to determine what corrective action (partial filling, raising or lowering of outlet elevations, creation or elimination of surface hydrologic connections, etc.) would be required to improve pool water balances;

6. water quality monitoring would be conducted in selected pools to determine pH, specific conductance, and nutrient, fertilizer, and herbicide levels. Results would be used to assess the performance of grass-lined swales, french drains, charcoal filters, and other features and facilities intended to control the quality and quantity of surface and subsurface waters entering the preserve from the golf course, park, and adjacent residential lots and to determine what corrective actions would be necessary if excess levels are present;

7. biological monitoring would be conducted to assess the rate of establishment of vernal pools plant species and aquatic invertebrates in created pools and to determine the response of existing pools to enhancement. Monitoring in enhanced pools would begin before the existing pools are modified. Monitoring would also be conducted to compare the populations or plant species and aquatic invertebrates with those in other existing pools used as controls;

3.3 Preserve, Golf Course, and Park Management

A plan will eventually be required to document the management practices required both within the preserves and in adjacent areas of the golf course and neighborhood park to implement the mitigation plan and ensure the long-term viability of the vernal pools. The plan should be completed in concept and detail before development of the golf course, neighborhood park, or surrounding residential areas begins to ensure that adequate time is available for seasonally-dependent seed collection and soil salvage to take place and to initiate baseline monitoring. The plan would necessarily provide for the following:

1. the sprinkler system in the golf course and in the non-preserve portion of the neighborhood park must be designed so that no direct irrigation of any portion of the preserve results. Grass-lined swales must be constructed at the margins of all turfed and irrigated areas that slope toward the preserves to intercept irrigation water and surface water

runoff and prevent flow into the preserves;

2. no concentrated runoff may be released from the above artificial swale networks into any natural swale that carries water to vernal pools unless it has been treated to remove herbicides, fertilizers, and excess nutrients;

3. no alteration in existing subsurface water regimes would be permitted unless detailed site-specific hydrologic analysis indicates that the alteration would not adversely affect vernal pool water balances. Wherever the direction of groundwater flow from an irrigated area would be toward the preserve, the irrigation system must be designed to continuously monitor soil moisture in the root zone, prevent excess watering, and automatically shut off before subsurface water movement is induced. As an alternative, a french drain may be installed to prevent subsurface flow from irrigated areas into the preserve. The hydrologic analysis should determine whether or not water captured by the french drain must be released to the pools during the rainy season to maintain their water balances. If release is necessary, the water must be treated to remove fertilizers, pesticides, and excess nutrients. Any system designed to permit rainy-season release must prevent all subsurface water derived from golf course irrigation from reaching the pools;

4. the golf course or City must have a plan to ensure that the facilities installed, including permanent monitoring equipment, to preserve pool water balances and water quality continue to properly perform their required functions. The plan should include regular inspection and maintenance of the facilities and equipment;

5. no mowing would occur in the preserve or in any adjacent areas of the golf course where turf management is not necessary;

6. surface water runoff from Carlsberg Blvd. or any paved surface would not be directed into any intermittent tributary or swale which carries water to any vernal pool;

7. a french drain should be installed around the perimeter of any lot or series of adjacent lots from which the direction of groundwater flow would be toward the preserve. A hydrologic analysis would be conducted prior to construction to design the drain and determine whether or not the water it

would capture should be released to the pools to maintain their water balances. If water must be released during the rainy season to meet that requirement, the water must be treated to remove fertilizers, pesticides, and excess nutrients. Any system installed to permit rainy-season release must be designed to prevent summer groundwater from reaching the pools;

8. a low fence of wood or any other combination of materials that is visually appealing and compatible with the surrounding golf course or park features would be constructed around each preserve. The fence and pedestrian entry points should be designed to prevent access by dirtbikes and other motorized vehicles;

9. each preserve area should be signed to state its purpose and to explain the unique values of the vernal pool resource.

10. Golf cart paths and paved foot paths would be allowed in the preserves. Where the design allows, these paths can cross natural drainage swales at the outlet points of pools to be enhanced by outlet barrier elevations. Where paths are used to elevate outlet barriers provisions must be made to prevent erosion in the swales on the downstream side of the path;

11. the natural drainage swale crossed by the dirt road through the Golf Course Preserve would be reconstructed without lowering the outlet elevations of pools 17 and 18 (refer to Figure 1).

3.4 Preservation of "Pool 71"

The large vernal pool ("pool 71") in the northwest corner of the golf course would not be in a designated preserve. Because of its topographic position and the importance of surface runoff and groundwater from the east to its water balance, special precautions must be taken to protect its integrity.

The general direction of groundwater movement in the vicinity of the pool is likely from the east, across the terrace and the long axis of the pool, toward Pleasant Grove Creek. The east boundary of the pool occurs right at the abrupt break in slope (at the foot of the terrace). It likely receives surface water runoff from the slope and groundwater from some undefined subsurface watershed to the east.

Unless it is controlled, excess late-spring and summer irrigation water from turfed areas on the higher terrace could end up in the pool, carrying with it fertilizers, pesticides, and excess nutrients. Continued addition of contaminated dry-season water would convert the vernal pool into a less ephemeral freshwater wetland, destroying the unique values we seek to preserve. If groundwater does contribute significantly to the water balance of this pool, it would be necessary to design facilities which would preserve the required rainy-season contribution of groundwater (free of contaminants) and prevent any dry-season flow to protect its integrity. A mechanism to ensure that the facilities are maintained and that they continue to perform their desired function throughout the life of the project (golf course) would also be necessary.

Several conditions must be met if Pool 71 is to be protected. They include the following:

1. no turf must be installed within 50 feet of the pool's north, west, and south boundaries; the unturfed intervening area must remain in undisturbed annual grassland;
2. on the west and north side of the pool, a grass-lined swale or equivalent water conveyance system must be constructed between and turfed and irrigated features and the pool to intercept surface runoff and direct it away from the pool. Sprinkler heads installed to irrigate any turf in the vicinity of the pool must be sized, located, and operated so that no unturfed area (between the artificial swale and the pool) receives water;
3. annual grassland between the artificial swale (or equivalent) and turfed features may be mowed but no mowing can be allowed between the swale and the pool. No mowing is to be allowed on the slope to the east of the pool;
4. no turf may be installed west of the top edge of the terrace east of the pool. A hydrologic study should be conducted to determine the relative contribution of direct precipitation, surface water runoff, and groundwater to the pool water balance. If groundwater from the turfed area is found to contribute significantly, facilities must be designed to ensure that the quality, quantity, and seasonal variation in groundwater remain unaltered. The hydrologic study should include an investigation of the effects of using

a combined swale-french drain system to reroute all surface and subsurface water from the turfed area away from the pool. If rerouting would have a negligible impact on the pool water balance, such a system could be installed to prevent impacts.

5. the depth and duration of inundation and water quality must be monitored to ensure that they are not adversely modified and that any swales, french drains, or other facilities installed to control impacts continue to properly perform their intended purpose. If they do not, corrective action must be taken; among them must be considered modification of the golf course features with which the impacts are associated. The implications of potential course modification (ie., fairway shortening, tee relocation) should be taken into consideration at the time the course is designed.

3.5 Timing of the Hydrologic Analysis

The hydrologic analyses required to ensure that the impacts on pool water quantity and quality are controlled should be conducted before construction begins. The analyses should include field measurement of existing conditions and the conduct of any soils and groundwater investigations necessary to provide site-specific data to the golf course designer and the engineer that designs the facilities required to control hydrologic impacts. Because the hydrologic investigation and monitoring must take existing rainy-season conditions into consideration, monitoring equipment should be in place and operational by the end of September of the year prior to the construction.

4.0 COMPARISON OF ORIGINAL AND ALTERNATIVE MITIGATION

Although the combined area of the Golf Course and Park Preserves is less than that of the originally proposed pair of preserves, the alternative and original "mitigation" are essentially equivalent.

Compensation is required as part of the alternative plan because, in spite of the similarities in the quality of the existing pools, the larger preserve is more linear in shape, considerably less buffer would be available. The risk that the proximity and potential hydrologic effects of the surrounding land uses could eventually adversely affect the quality of water that enters the pools and upset their seasonally extreme hydrologic regimes is considerable.

Alternative Mitigation
May 25, 1988

15

Table 1 summarizes the differences between the recommendations. The combined area of the Golf Course and Park Preserves would be approximately 19 acres and the combined area of the original preserves would be approximately 51 acres. Generally, the pools in the Golf Course and Park Preserves are similar in terms of their species richness and are slightly larger (discounting the influence of one large, 20,000-square-foot pool on average pool size in the Park Preserve). On the other hand, they are also slightly shallower. The differences in the ratio of preserve area to pool area indicates that equivalent or greater pool values would be preserved (and created) with less land withdrawn from residential and other proposed uses under the proposed alternative.

RECEIVED APR 07 1988

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April 5, 1988

Mr. Ronald Alvarado
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**SUBJECT: VERNAL POOL SURVEY, URBAN RESERVE, NORTHWEST ROSEVILLE
SPECIFIC PLAN AREA**

Dear Ron:

Here in the form of a letter report that can be appended to the EIR for the Plan Area. This report presents essentially the final results of the survey of the vernal pools in the Urban Reserve area of the Northwest Roseville Specific Plan Area that went unsurveyed last year because of changes in the plan area boundary made subsequent to the field survey. I am forwarding copies of this report to R. C. Fuller and David Wade.

As I indicate below, an additional field visit will be necessary to survey a single pool on another occasion when currently unidentifiable grass seedlings have matured and can be accurately identified. Other than this last field visit, no additional field work will be necessary to evaluate the pools. If no sensitive species is found, the evaluation can be considered complete and no additional mitigation other than that which has already been recommended for the Northwest Specific Plan Area will be necessary. Continued planning and interaction is necessary, however, before the recommended preservation and protection of vernal pools in the golf course can be ensured.

METHODS

Several physical and biological variables were used to characterize and evaluate the pools in the unsurveyed portion of the Specific Plan Area.

The biological variables were:

1. number of vernal pool species present
2. number of non-vernal pool (weedy, introduced) species
3. presence and abundance of rare, threatened, or endangered plant species

and the physical variables were:

5. pool size (surface area) and depth
6. pool boundary distinctness
7. pool density (number of pools per acre)
8. pool coverage (percent area occupied by pools)
9. soil type and associated topography

Past and current disturbance was also used.

This report presents results in generally the same format that was used in the previous reports for the Northwest and North Central Specific Plan Areas. The same methods were used and, as the above list indicates, the same types of data were collected. Please refer to the original reports for discussions of the methods.

The vernal pool survey was conducted on April 2-3, 1988, to provide the informational base necessary to evaluate the pools relative to others in Roseville and to determine whether or not they contain any threatened or endangered or otherwise sensitive plant species. The sensitive species for which the survey was conducted are listed in Table 1 on the following page.

Although normally two additional field visits would be necessary to characterize the pools, the early-blooming species were still identifiable and most of the late-blooming species were developed well enough to be identifiable and the single visit can be considered sufficient and conclusive for all but a single pool. An additional visit will be made to one pool to confirm the identity of grass seedlings which had just germinated at the bottom of the pool but were not yet identifiable.

A survey for the tiger salamander was considered unnecessary because the pools are very shallow and have been disturbed. Surveys conducted last year both in the North Central and Northwest Roseville Specific Plan Area (by Dr. Theodore Papenfuss) and on Stanford Ranch in nearby Rocklin produced no observations of the species. Dr. Papenfuss characterized the pools in the Northwest Plan Area as being generally unsuitable because they are so shallow.

Specifically, the objectives of the field survey and this report are to:

1. obtain information on the pools I identified as being in the previously unsurveyed area using the same methods I employed last year in surveying the pools in the two Plan Areas and to

TABLE 1

SENSITIVE PLANT SPECIES THAT COULD OCCUR
IN THE NORTHWEST ROSEVILLE SPECIFIC PLAN AREA

Species: Common Name (Scientific name)	Status			Observed On Site
	Federal	State	CNPS	
Sacramento Orcutt grass (<u>Orcuttia viscida</u>)	C1	E	1b	No
Slender Orcutt grass (<u>Orcuttia tenuis</u>)	C1	E	1b	No
Greene's tuctoria (<u>Tuctoria greenei</u>)	C1	E	1b	No
Hoover's spurge (<u>Chamaesyce hooveri</u>)	-	-	1b	No
Bogg's Lake hedge hyssop (<u>Gratiola heterosepala</u>)	C2	E	1b	No
Greene's legenere (<u>Legenere limosa</u>)	C2	-	1b	No
Dwarf downingia (<u>Downingia humilis</u>)	C3c	-	4	No
Red Bluff rush (<u>Juncus leiospermus</u>)	C2	-	4	No
Bogg's Lake dodder (<u>Cuscuta howelliana</u>)	C3c	-	4	No
Vernal pool brodiaea (<u>Dichelostemma lacuna-vernalis</u>)	-	-	4	No

The above species are listed by the California Department of Fish and Game Natural Diversity Data Base as of October 1985 or by the California Native Plant Society.

Status Notes:

Federal status - C1 species are candidates which have not yet been listed by the federal government; C2 species are those for which data regarding distribution or threat is inadequate to support listing; C3c species are those which are too widespread and/or are not seriously enough threatened to support listing.

State status - E indicates that the species is listed by the State as endangered.

CNPS status - List 1b species are considered rare and endangered in California and elsewhere; List 4 species are on the "watch list" and are of sufficiently limited distribution to warrant continued monitoring.

use the data collected to compare these pools with other areas of pools in Roseville;

2. evaluate the pools in the surveyed area to determine which are most valuable;
3. determine whether or not any rare, threatened, or endangered plant species occur in any of the pools in the surveyed area;
4. since the Urban Reserve designation implies no near-term development and no impacts can be assessed determine whether or not the pools possess values which indicate that they should be considered important enough to preserve given other recommended mitigation measures (preservation) in the Plan Area.

RESULTS

Forty eight (48) are present in the area surveyed (the previous unsurveyed area, the proposed Urban Reserve) and another 12 are present in the adjacent area to the south. This report presents the results of the survey of the 48.

As was the case with the pools in the portion of the Northwest Roseville Specific Plan Area surveyed last year, many are outside the limits of the SWAs mapped by Holland and WESCO. The pools in the Urban Reserve area extend well south of the limits of SWA 20 and as a group exceed by about 50 percent the number of pools that are within the limits of that SWA as it was originally mapped. For purposes of this report, however, the pools are, as a group, labelled SWA 20.

The 1988 growing season began normally but, because February and March were essentially rain-free, the growing season was compressed. Two consecutive dry winters (1987 was characterized by lower-than-normal winter rainfall) have resulted in lower-than-normal germination and establishment of vernal pool species and the second dry year increased the encroachment of non-vernal pool species into the pools from the adjacent annual grassland. As a result, comparisons of pools surveyed this year with pools surveyed last year requires some subjective interpretation and "adjustment" if those surveyed this year are not to be unnecessarily undervalued.

SENSITIVE SPECIES

Table 1 lists the plant species for which the sensitive plant survey was conducted and indicates their status within the surveyed area. The first field survey for these species was conducted in conjunction with the physical measurement and botanical survey of the pools for the pool evaluations described above.

No sensitive species were found in any of the pools and no vernal pool brodiaea was found in the surrounding annual grassland. However, grass seedlings of were identified on the still wet and muddy bottom of the largest pool. Experience in the adjacent pools surveyed last year and the general character of this single pool indicate that it is not likely that these seedlings belong to the genus Orcuttia but an additional field visit will be necessary for confirmation. This visit will be conducted in the middle or toward the end of April.

GENERAL POOL EVALUATION

The locations of the pools have been mapped on the large-scale topographic map. I have forwarded this map to R. C. Fuller Associates with a copy of this report.

General Topography

Approximately half of the pools occur on relatively level high ground and approximately half are arrayed in series in the shallow ephemeral swales that drain the area generally to the south and southwest toward Kaseberg Creek. The extent to which discing operations associated with dryland wheat farming may have reduced the mound-and-depression microrelief is unknown but the area was farmed for several decades and although discing does not involve the movement of mush soil from location to location, the effect appears to have been a general levelling or smoothing, the mounds lowered somewhat and the depressions made slightly shallower.

Physical Pool Features

Table 2 summarizes the physical and biological data collected. The average area of the pools is approximately 1330 square feet and the average depth is approximately 3.5 inches. Two thirds of the pools are over 1000 square feet in area and none are under 100 square feet. The largest is slightly over 3000 square feet and the smallest is about 400 square feet. Most (94 percent) are

between five inches or less in depth and almost two thirds are three inches deep or shallower. One pool is seven inches deep. Based on the standards used in the previous reports, these pools are relatively large but only moderately deep.

The pools in SWA 20 are also characterized by very weak topographic definition. Most have very indistinct boundaries and, while they are recognizable as depressions (in large part due to the different vegetation and the appearance it imparts), they are not well-defined vernal pools.

Botanical Characterisrics

The dominant species in most of the pools are slender popcorn flower (Allocarya stipitata var. micrantha), Carter's buttercup (Ranunculus bonariensis var. trisepalus), and annual hairgrass (Deschampsia danthonioides). Ornate downingia (Downingia ornatis-sima) is common in several but it is dominant in none. Carter's buttercup is a relatively cosmopolitan species found in non-vernal pool depressions and other areas where water collects. Most pools also support a large number of non-vernal pool species. Among them the most common are filaree (Erodium cicutarium), dandelions (Microseris sp. and Hypochoeris glabra), Fitch's spikeweed (Hemizonia fitchii), and clovers (Medicago hispida and Trifolium spp.).

The total number of vernal pool species in the 48 pools is 24. An average of 8.1 vernal pool species are present per pool. The average number of non-vernal pool species per pool is 3.6 and the average ratio of vernal pool to non-vernal pool species is 2.8. These three figures indicate that the pools are relatively depauperate, rich neither in vernal pool species nor in species in general.

Comparison with Other Pool Areas

In terms of other areas of pools in the Northwest Specific Plan Area, they are larger than most but generally shallower. Table 3, which has been modified (from the table in the original reports for the two Specific Plan Areas) to include data from this survey, indicates that SWA 21 has a larger average pool size but the average of 3358 square feet is misleading because SWA 21 contain very few pools and one of them is over 14,000 square feet. Excluding that single large pool, the overall average is much lower. The pools in SWA 20 are, on the average, the largest in either the Northwest or North Central Specific Plan Area. They are, however, the shallowest, except for the very small pools on the Mehrten Formation in ASWA 21B.

The pools in SWAs 21 and 24 in the Northwest Specific Plan Area and the other SWAs in the North Central Plan Area are much better defined than those described in this report.

Compared with the other areas of vernal pools in the Northwest and North Central Specific Plan Areas, these pools are relatively species-poor. The low total number of species and the low number of vernal pool species per pool reflect both past dry-wheat farming and consecutive dry years. Data collected in last year's survey indicate that, compared with pools in the northeast quarter of the Specific Plan Area where no dry wheat farming took place, the pools in the western quarter and southern half of the Plan Area have been affected by agricultural operations. Table 3 shows the differences. The pools in SWA 20 surveyed this year are compositionally similar to those in SWA 25 and ASWA 21B and expectedly appear to exhibit the same kind of response to disturbance.

Table 2 shows that the three of the pool areas (ASWA 30B, ASWA 15B and SWA 15) are similar in their depauperate or species-poor condition. They possess similarly few vernal pool species and are characterized by equally low average numbers of vernal pool species per pool. Overall, the pools in SWA can be considered to rank among the bottom third of pool areas in the two Specific Plan Areas in terms of botanical values.

Table 2 also shows how SWA 20 compares in overall terms with the other pool areas in the Northwest Plan Area. SWA 20 is ranked in the middle of the five pool areas using both simple-sum and euclidian-metric measures. SWA 20 ranks third out of five pool areas. Although the simple sum and euclidian metric for SWA 20 suggest that the pools it contains are superior to those in many of the SWAs and ASWAs the North Central Plan Area, the measures can be compared with only those for other pool areas in the Northwest Plan Area.

MITIGATION RECOMMENDATIONS

On the basis of the data collected to date in the survey, no future preservation is recommended in the Urban Reserve area at the time development is proposed. No recommendation can be made for additional mitigation in the form of vernal pool preservation elsewhere in the Northwest Specific Plan Area. Nothing known to date about these pools leads me to change the recommendations I made in my previous report for the Plan Area. However, the sensitive plant survey should be concluded with the final visit in the middle or toward the end of April to determine whether or not

TABLE 2
RESULTS OF ASSESSMENT OF VERNAL POOL AREAS
NORTHWEST AND NORTHCENTRAL ROSEVILLE SPECIFIC PLAN AREAS

Pool Area (SWA or ASWA)	Ranking Factors																				
	Soil % divers.				Pool size and type		Species Diversity					Assigned Values for Ranking Factors					Totals		Pool Area Rank		
	No. Pools	Area in Soil	No. of types	Dis-turb-ance	Avg. pool area (sf)	Avg. pool depth (in)	Total no. of sp. in pool area	Average no. of sp./pool	Average pool ratio	No. pools per acre	% area in divers-ity	Dis-turb-ance	Pool size and diver-ty	Plant diver-ty	Simple Euclidian Sum	Euclidian Metric	Simple Euclidian Sum	Euclidian Metric			
<u>Northwest Roseville Specific Plan Area</u>																					
SWA 21	2.3	13.2	1	C	3358	5.0	36	32	16.0	11.0	2.33	9	16	3	8	16	16	68	19.3	2	2
SWA 24 (redefined)	3.0	7.2	2	C	1093	5.6	46	20	14.3	10.1	3.02	16	14	10	12	13	17	82	19.6	1	1
SWA 25 (redefined)	1.2	2.2	1	C,Ag	1207	4.4	21	13	8.3	4.0	2.07	3	6	4	11	13	10	47	14.0	5	5
ASWA 21A	1.9	3.2	2	C,Ag	759	3.6	26	19	7.3	4.1	2.31	7	11	10	8	9	6	51	12.5	4	4
SWA 20 (AREA IN URBAN RESERVE SURVEYED IN SPRING OF 1988) (redefined)	2.1	3.5	1	C,Ag	1330	3.5	24	18	8.1	3.6	2.80	8	11	4	8	14	10	55	14.9	3	3
<u>North Central Roseville Specific Plan Area</u>																					
SWA 15	2.5	2.3	1	C	401	3.9	20	7	8.0	3.8	2.96	11	7	4	12	4	3	41	13.0	7	7
SWA 13/14	3.4	3.7	2	C	408	4.3	26	12	10.1	3.5	4.49	12	10	10	12	4	8	56	14.2	3	5
SWA 28	2.5	6.5	3	C	1120	3.7	41	27	13.3	4.1	3.48	11	13	12	10	12	16	74	17.7	1	1
SWA 30	1.4	3.5	5	C	1075	5.7	34	18	12.5	3.5	5.72	4	10	16	10	14	11	65	17.5	2	2
SWA 31	2.9	2.6	1	C	428	4.9	40	23	11.1	3.9	4.50	13	8	4	10	6	15	54	16.1	4	3
ASWA 13/14B	1.1	2.1	2	C	878	3.8	39	29	10.3	3.1	5.05	3	6	8	10	10	13	50	13.9	5	6
ASWA 15B	3.2	3.1	2	C	469	4.3	21	8	9.1	1.7	8.31	15	9	8	10	6	8	56	15.6	3	4
ASWA 28B	1.5	1.1	2	C	350	2.2	24	15	7.7	4.9	2.33	4	3	8	8	2	4	29	9.0	8	10
ASWA 30B	1.9	3.7	2	C	623	3.3	20	10	12.5	3.0	5.67	7	10	8	8	8	6	47	11.2	6	9
ASWA 31B	1.0	1.4	2	C	581	4.7	31	16	8.2	3.8	2.92	2	4	8	9	8	10	41	11.5	7	8

Orcuttia is present. If it is occurs in the single pool which will be revisited, recommendations for mitigation may be modified.

The lack of any recommendation for preservation in the Urban Reserve Area is predicated on the assumptions that: 1) mitigation recommended elsewhere in the Northwest Specific Plan Area and tentatively incorporated into the plan by The Sammis Company will actually be incorporated into the project, and 2) the required avoidance, preservation of tributary watersheds, and prevention of the addition of irrigation waters, herbicides, and fertilizers into pools that are to be protected within the limits of the proposed golf course will take place.

Additional design work and further modification of the golf course plan with the assistance of a qualified biologist and groundwater hydrologist will be necessary before the required preservation and protection can be ensured.

I will report to you and to Richard Fuller the findings of the second field visit as soon as it has been completed. If you have any questions about the contents of this report as it stands, please let me know. If any revisions are necessary to improve its clarity or understandability I will make them as soon as possible.

Sincerely,



Laurence P. Stromberg, Ph.D.
Consulting Plant Ecologist

xc: R. C. Fuller, David Wade
attachment: topo map showing pool locations
(attached to the copy mailed to R. C. Fuller)

RC Fuller

R.C. FULLER ASSOCIATES
6000 Fair Oaks Boulevard
Carmichael, CA 95608

VERNAL POOL SURVEY AND EVALUATION
NORTHWEST ROSEVILLE SPECIFIC PLAN AREA
CITY OF ROSEVILLE, CALIFORNIA

DRAFT REPORT

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July 27, 1987

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DRAFT REPORT

VERNAL POOL SURVEY AND EVALUATION
NORTHWEST ROSEVILLE SPECIFIC PLAN AREA
CITY OF ROSEVILLE, CALIFORNIA

This report provides information that supplements a 1981 vernal pool inventory by WESCO and Holland (1982). Specific objectives of the report are to: 1) compare the pools in the Plan Area with other pool areas in the City of Roseville; 2) evaluate pool areas in the Plan Area and determine which areas are most valuable; 3) determine whether or not rare, threatened, or endangered plant species, or the tiger salamander (Ambystoma tigrinum), a candidate (C2) for federal listing as endangered, are present; 4) assess the impacts of project implementation under the proposed plan; and, 5) recommend measures which can be taken to mitigate these impacts.

Except for a narrow strip which was added to the western margin of the Plan Area after the field survey was completed, the entire Plan Area was surveyed between early April and mid June. The pool evaluation was conducted using the same procedures WESCO and Holland (1982) used. Precisely the same type of data and methods were used to compare pool areas with others in Roseville outside the North Central Specific Plan Area; additional data collected in a companion study in the North Central Plan Area were used to compare pool areas in the two adjacent Plan Areas.

The Northwest Specific Plan Area contains approximately 321 vernal pools. Of these, 281 occur in the area surveyed. Approximately 40 occur along the western margin of the Plan Area in the area that was not surveyed. Vernal pools are most abundant in the northeast quarter of the Plan Area, north of the transmission line corridor and east of Foothills Blvd. Pool density is generally greatest in a wide band (3000 ft) that crosses the Plan Area east to west through its midsection.

Bogg's Lake hedge hyssop (listed by the state as endangered) and dwarf downingia and vernal pool brodiaea (both on CNPS list 4) occur in the Plan Area. Bogg's Lake hedge hyssop occurs in one pool and dwarf downingia occurs in three, one of which contains the hedge hyssop. One vernal pool brodiaea was found in the annual grassland. Although suitable habitat is present for the tiger salamander, it is not present.

SWA 24 and SWA 21, which were redefined during the field study, contain large, deep, and floristically diverse pools that rank first and second when compared with pool areas in the North

Central Specific Plan Area. These pool areas also rank highly (upper third) when compared to pool areas elsewhere in Roseville. The other pool areas rank moderately when compared with pool areas anywhere else in Roseville.

In the absence of mitigation, the overall impacts of development in the Plan Area would be significant. Ninety (90) percent of the vernal pools would be destroyed by near-term development; many of the remaining pools in the Urban Reserve at the northwest corner of the Plan Area would be indirectly affected and all could be eliminated by presently unspecified future development. All the rare plant populations would be eliminated as a result of development as a result of proposed, near-term development. Proposed land uses that would have individually significant impacts include the golf course, four residential uses (parcels 29, 30, 31, and 44) between the existing transmission line and proposed Carlsberg Blvd., and the residential use (parcel 49) northeast of the Cook-Riolo Road-Base Line Road intersection.

Mitigation proposed to reduce impacts on vernal pools includes the establishment of two preserves between the electrical easement and proposed Carlsberg Blvd. and preservation of a small number of vernal pools in the proposed golf course. One large, unique pool (pool 71) should receive the highest priority for preservation within the golf course. The combined area of the two preserves would be approximately 51 acres. The area affected in the golf course should be between six and seven acres.

The pools in the two preserves and retained in the golf course are the most valuable pools in the Plan Area but preservation would require modifications to the Specific Plan. Proposed residential development would be prevented on one parcel and be cut back on two others. The K-5 school would have to be moved slightly and the connecting road between Base Line Road and Carlsberg Blvd. would have to be realigned slightly. Carlsberg Blvd. could be slightly realigned to minimize affects on the Plan.

1.0 INTRODUCTION

1.1 BACKGROUND

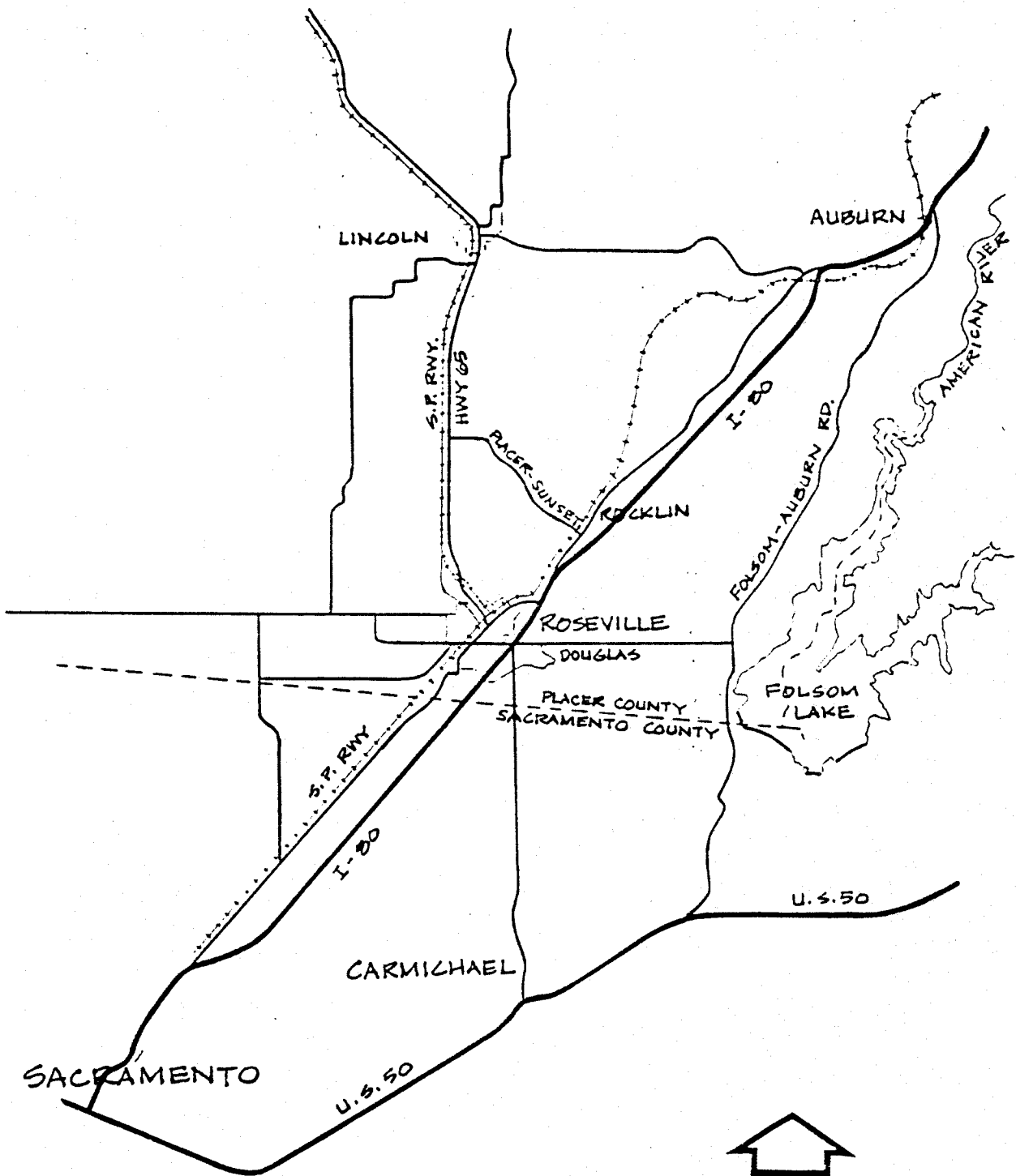
At the request of the City of Roseville, Western Ecological Services Company (WESCO) engaged Dr. Robert Holland, a vernal pool expert now employed at the State's California Natural Diversity Data Base (CNDDB), to conduct an inventory and evaluation of the vernal pool resources throughout the City of Roseville (Figure 1). Dr. Holland and his assistant used aerial photographs to identify areas of pools (referred to as Site Writeup Areas or SWAs), acquired permission to enter most of the properties containing them, and conducted the inventory in the spring of 1981 using a single transect in each SWA. The inventory results provided the basis for ranking individual areas of pools. These results are included in the report submitted to the City of Roseville by WESCO (WESCO and Holland 1982).

Five SWAs fall either partially or entirely within the limits of the Northwest Roseville Specific Plan Area (hereafter referred to as the Plan Area). The Plan Area and the locations of the SWAs as he mapped them are shown in Figure 2. Dr. Holland was not allowed access to four of these (no access response) and the fifth was found to contain no pools. Consequently, the report and City-wide rankings cannot be used to evaluate the pools in the Plan Area and compare them with other areas of pools within the City.

Although one rare plant species was found in one pool, the inventory did not include a rare plant survey (Holland personal communication). Consequently, not only did no information exist regarding relative pool resource values in the Northwest Specific Plan Area prior to this study, but none existed regarding sensitive plant species populations.

Experience elsewhere in Roseville, ie. the Northeast and Southeast Specific Plan Areas (Jones and Stokes 1986, Miller personal communication, Stromberg 1987a), has shown that the report by WESCO and Holland does not show all pool areas nor accurately show their distribution. The inaccuracies resulted from the scale of the City-wide inventory, the limited time available for field work, and the broader-scale perspective of the evaluation.

Vernal pool distributions within the SWAs, as they were originally mapped, are not uniform; some portions of the SWAs contain many pools and others contain none. For purposes of project planning, impact assessment, and development of a strategy for mitigating impacts, refined information is necessary, dictating possible

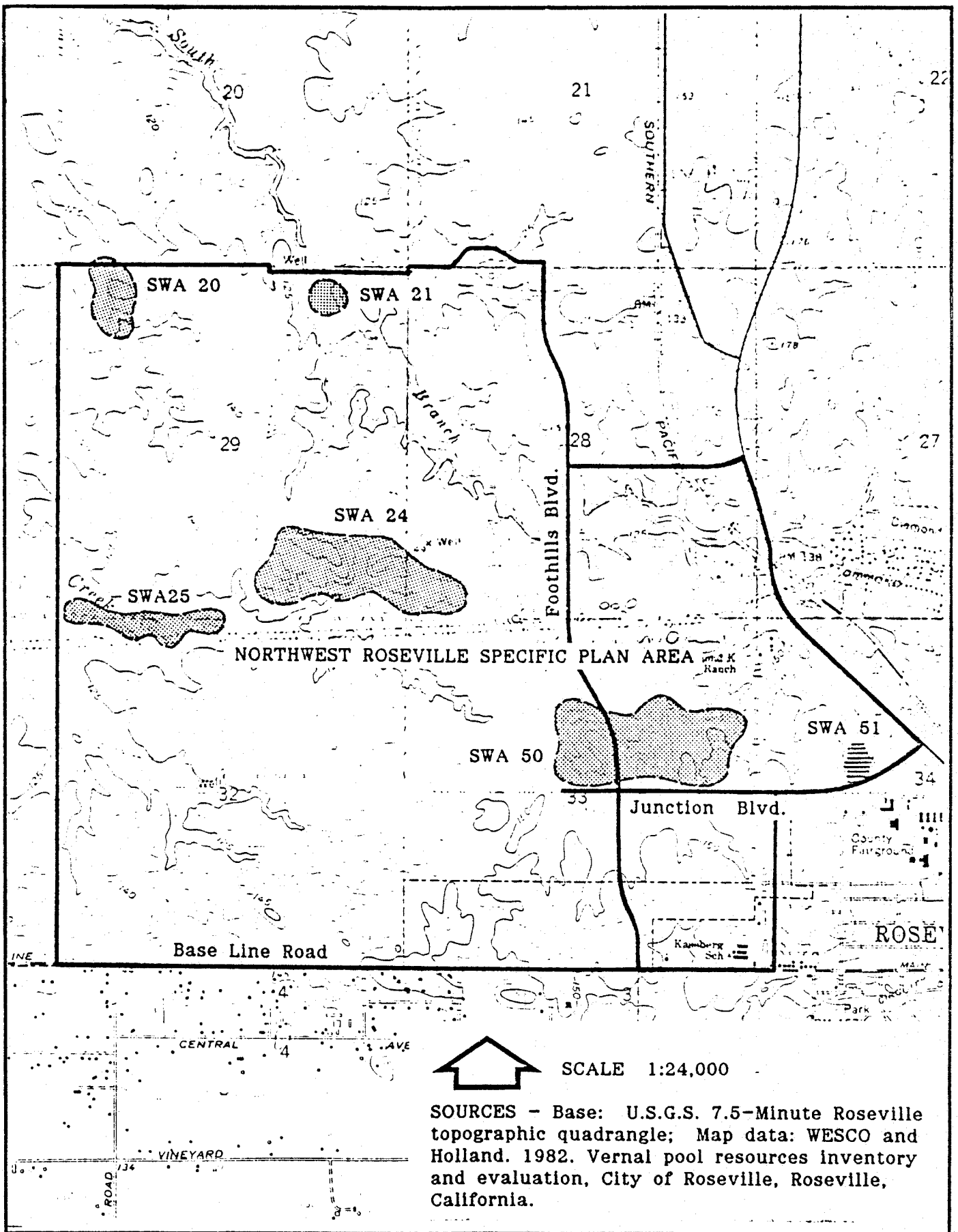


Scale: 1:250,000

Source: U.S.G.S. 1 x 2 degree Sacramento Area quadrangle.

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FIGURE 1. REGIONAL LOCATION MAP



SCALE 1:24,000

SOURCES - Base: U.S.G.S. 7.5-Minute Roseville topographic quadrangle; Map data: WESCO and Holland. 1982. Vernal pool resources inventory and evaluation, City of Roseville, Roseville, California.

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FIGURE 2. NORTHWEST ROSEVILLE SPECIFIC PLAN AREA AND ORIGINALLY DEFINED SWAS

redefinition of the original SWAs. Substantial numbers of pools may also occur outside the limits of the SWAs, indicating that additional or new SWAs should be identified, surveyed, and evaluated.

1.2 OBJECTIVES

The goal of this study was to supplement the report by WESCO and Holland and provide the informational base necessary to assess the impacts of development on vernal pools and associated threatened or endangered or otherwise sensitive plant species within the Plan Area. Although vernal pool brodiaea does not occur in vernal pools, as its name implies, it does occur in the annual grassland surrounding vernal pools and it was included as a target species in the sensitive plant survey. Because larger pools and drainage channels may offer suitable reproductive habitat for the tiger salamander (Ambystoma tigrinum), a amphibian candidate (C2) for listing as an endangered species by the federal government, they were also surveyed to determine whether or not the species is present.

Specifically the objectives of the field survey and this report were to:

1. obtain information on the SWAs mapped in WESCO's report using the methods employed by Holland and rank these areas of pools against other areas of pools within the City of Roseville;
2. evaluate each area of pools (identified as part of the survey) within the Plan Area to determine which area(s) are most valuable;
3. determine whether or not any rare, threatened, or endangered plant species or the tiger salamander occur in any of the pools (or other water features in the case of the tiger salamander) in the Plan Area;
4. assess the impacts of project implementation under the proposed plan; and,
5. recommend measures which can be taken to mitigate these impacts.

1.3 REVISIONS TO THE SPECIFIC PLAN

Revisions to the Specific Plan were made in July, 1987, well after the field survey was completed. The revised Plan showed a significantly different location for the western boundary of the Plan Area and several internal revisions. The internal revisions were of no consequence, but the addition of area at the western boundary did affect the completeness of the study. Parcels 60 and 61, most of parcel 48, the western halves of parcels 53, 54, and 58, the Community Park and both Urban Reserves are west of and outside the area surveyed.

Inspection of the 1985 aerial photographs shows that these parcels contain vernal pools, including all of SWA 20 and the western half of SWA 25. SWA 25 was originally surveyed and data were collected in this study on pools in the eastern half of SWA 25 as it was redefined (extended to the east). However, no information existed for SWA 20 at the start of this survey because it was not originally inventoried and evaluated by WESCO and Holland in 1981. By the time of the revision, the flowering season had long passed and it was not possible to collect complete general botanical information or determine whether or not any sensitive species are present. So, there is still no information on those pools.

2.0 METHODS

2.1 POOL DISTRIBUTION

Because many pools in the Plan Area were outside the boundaries of the SWAs as they were originally mapped by WESCO and Holland (1982) I redefined the existing SWAs and established new pool areas (referred to as Additional SWAs or ASWAs). In comparisons with other pool areas in Roseville, these new and redefined SWAs were used. Isolated individual pools and small pool clusters much smaller than those identified by WESCO and Holland were not compared.

The first step in comparing pool areas in the Plan Area and elsewhere in the City and in making internal comparisons within the Plan Area was to determine pool distribution. The determination began with a review of the map in the report by WESCO and Holland (1982) showing the locations of SWAs and of black and white aerial photographs (scale 1:5760) taken in October of 1981, and a survey of the Plan Area by helicopter to provide a current aerial perspective. Color photographs were taken from the helicopter with a 35-mm camera and a wide angle lens to supplement the 1981 photographs. In a field reconnaissance on March 25-27, 1987, additional pools were identified that were not visible or identifiable on the 1981 photographs. This process confirmed that many pools in the Plan Area are outside the SWAs mapped by WESCO and Holland and produced the set of vernal pools that would be subsequently surveyed.

The reconnaissance revealed that some changes had taken place since WESCO and Holland conducted their inventory. Part of SWA 50 west of Foothills Blvd. had either already been developed or was undergoing development (construction has begun) at the time of the initial visit. SWA 51 near the intersection of Junction Blvd. and Corporation Road had been partially extirpated and contained no pools.

2.2 POOL CHARACTERIZATION

Several physical and biological variables were used to characterize and evaluate existing SWAs and additional pool areas (ASWAs) not originally mapped as SWAs in the Plan Area.

The biological variables were:

1. number of vernal pool species present
2. number of non-vernal pool (weedy, introduced) species
3. presence and abundance of rare, threatened, or endangered plant species
4. presence of the tiger salamander

and the physical variables were:

5. pool size (surface area) and depth
6. pool boundary distinctness
7. pool density (number of pools per acre)
8. pool coverage (percent area occupied by pools)
9. soil type and associated topography

Past and current disturbance was also used.

2.2.1 Selection of Variables

Although species diversity is a superior measure of vernal pool value, it was not used because of the lower-than-normal winter rains this past season. In the strict ecological sense, assessment of species diversity requires quantitative relative abundance data for each species present. The response to the abnormally dry conditions was anticipated to be extreme, to far exceed normal fluctuations, making relative abundance data atypical and reducing the utility of species diversity measurements. In lieu of quantitative abundance data, I decided to determine the number of vernal pool and non-vernal pool plant species in individual pools and identify the dominants (those which were most abundant). The number of and balance between vernal pool and non-vernal pool species can indicate the variety in microhabitats present in the pools as well as signal the effects of past and current disturbance.

The presence of threatened or endangered or other sensitive plant species in the vernal pools is an important factor in ranking pool areas because of the importance of preservation and management in maintaining their limited numbers. Agricultural and current developmental pressures threaten many species that are restricted to pools. As pools have been graded or their surrounding ecosystems have been altered, these species and their habitat have declined and the least abundant species have become threatened or endangered.

The tiger salamander is an amphibious species known to inhabit slow-moving and ponded waters during its reproductive phase. Seasonal ponds and vernal pools are considered crucial habitat

elements (California Department of Fish and Game unpubl.). The tiger salamander's range extends from Kern County to Butte County, including annual grassland and foothill woodland habitat (California Department of Fish and Game unpubl.) along the eastern side of the Central Valley. Because it is a sensitive species and because vernal pools could provide crucial habitat for the species if it occurs in the Plan Area, its presence was considered in determining pool and SWA value.

Among the physical variables, pool size and depth are two permanent pool features which strongly influence long-term species diversity through their joint affect on the period of inundation. The distinctness of the vernal pool boundary can also indicate something about vernal pool species diversity. Shallow, "washy" pools are often characterized by indistinct boundaries and broad transitional zones in which both annual grassland and vernal pool species are present. Although such shallow pools represent the dry end of the vernal pool spectrum and possess their own inherent value, they tend to contain fewer vernal pool species and be less diverse than deeper pools with abrupt topographic and vegetational boundaries. Data collected on these three variables complement data collected on species abundance and together offer another index to species diversity and pool value.

Pool density and coverage are also meaningful indices to pool area value when taken from the perspective of overall system stability. Together, they integrate pool number and size. Given two sites of equal size and species diversity, the site characterized by greater pool density and coverage is likely more resistant to the effects of natural perturbations and adjacent land uses. Recovery from temporary reductions in numbers or local extinctions in a pool is more likely to occur and occur more rapidly if the number of other pools is greater and they are closer to one another. Number and proximity increase the opportunities for the reintroduction of seed necessary for reestablishment.

Pools are known to show compositional variation to differences in soil type and topography (Holland 1978). Both affect nutrient availability, surface water input and storage, period of inundation and anaerobic subsurface conditions, etc., all of which, in turn, affect species establishment and reproduction. Pools that span a wide range of soil types have the potential for exhibiting greater collective diversity than pools on a single soil type.

Pool size and type, pool density and coverage, soil type and topography, disturbance, and botanical composition were used by WESCO and Holland in the original pool inventory. These variables were used again in this study, this time with quantitative data

collected within individual pools and pool areas. Pool depth, boundary distinctness, and the presence of rare, threatened, or endangered species are additional variables not used originally.

2.2.2 Data Collection Methods

2.2.2.1 Pool Species Composition. The general botanical and sensitive plant species surveys were conducted in a series of site visits on the following dates: March 31 and April 1, April 7, April 11 and 12, April 23, April 28, May 7, and June 3. Each pool was visited on one or more of these visits. In each isolated pool outside established SWAs and ASWAs and in a subset of pools in each SWA or ASWA all species were identified and recorded and the most abundant were identified. Designations of species as pool and non-pool species were made on the basis of the ecological literature, species lists compiled for nearby pools (Holland 1981, Schlising and Sanders 1983), the report by WESCO and Holland, and conversations with vernal pool ecologists. The species list was augmented on each visit.

The data collected in individual pools were used to estimate the total number of vernal pool and non-vernal pool species present in each SWA or ASWA, as well as the average number of vernal pool and non-vernal pool species per pool, and the average ratio of the two.

Rare plant survey methods and the procedure used to survey for the tiger salamander are described below in sections 2.3.1 and 2.3.2.

2.2.2.2 Pool Size and Depth. The size of each pool measured was obtained by assigning the pool to a shape category (crescent, oval, round, triangular, linear, etc.) and then making two or more horizontal dimensional measurements that could be used to calculate pool area later in the office using the appropriate mathematical equation. A 150-foot fiberglass tape and/or pacing was used to measure the dimensions; pacing was used only after comparisons of paced and tape-measured lengths showed consistent similarity to (within five percent). Pool depth was measured using simple hand leveling techniques with a rod scaled in inches; measurements made in pools when water was present were made parallel to the pool water surface; visual estimates were used when depth measurements and visual estimates were consistently similar (again within five percent).

2.2.2.3 Pool Density and Coverage. The boundaries of each SWA were adjusted to account for the observed pool distribution in the field. SWA and ASWA areas were measured on the photographs or the U.S.G.S. 7.5-minute topographic quadrangle; boundaries were drawn

tightly around pool clusters to minimize the inclusion of land that does not contain pools.

The number of pools per acre (pool density) in each SWA or ASWA was determined by counting the pools present and dividing the total number by the area of the redefined SWA or (new) ASWA as determined on the 1981 black and white photographs. The percentage of the ASWA covered by vernal pools was estimated by summing individual pool areas measured in the field and dividing the cumulative total by the ASWA area.

The percent of the SWA or ASWA occupied by vernal pools (pool coverage) was made by either dividing the sum of individual pool areas by the SWA or ASWA area or multiplying the estimated average pool area by the estimated number of pools and dividing the product by the SWA or ASWA area.

Following the field survey and most data analysis, the western Plan Area boundary was moved. Initially, it coincided with the proposed northward extension of Cook-Riolo Road but was subsequently moved west several hundred feet. The added area contains pools not surveyed and for which no data exists. Pool density and coverage for SWA 25 were estimated using field-validated information for the eastern portion and photo-only information for the western portion that was not surveyed. Pool density in SWA 20 was determined using only photographs.

Pool coverage in SWA 25 was estimated by using the average pool area from the eastern part of the SWA and multiplying the average by the total number of pools present. Because no measurements were made in SWA 20, pool coverage was not estimated.

2.2.2.4 Pool Boundary Distinctness. Boundary distinctness was assessed using three classes. Boundaries were defined as being abrupt, gradual, or undefined based on pool margin microtopography and the width of the transition from predominantly vernal pool vegetation to annual grassland vegetation. A boundary was defined as abrupt (A) where the topographic and vegetational transitions occur within one foot, gradual (G) where the transitions occur within one to three feet, and undefined (U) where the transitions occur over three or more feet.

2.2.2.5 Soil type and associated topography. Information on soil type and variety and associated topography was obtained from the Soil Survey of the Western Part of Placer County (USDA Soil Conservation Service 1980) and the U. S. Geological Survey Roseville 7.5-minute topographic quadrangle. This information was supplemented by field observations.

2.2.3.6 Disturbance. Disturbance was assessed on the basis of physical evidence in and around the pools. Cattle hoof prints and trails, "cow paddies", and salt blocks indicate grazing; tire tracks can indicate dirtbike, truck, tractor, or construction equipment operation; depending upon their size and location, road berms and gulying suggest possible changes in surface hydrology; washboard microtopography is evidence of the dryland wheat farming operations. Surface disturbances were obviously associated with the construction of the transmission lines and the City water facilities. Information about agricultural operations (farming, chemical spraying, etc) was also obtained from grazing lessees or their range hands (Johnson personal communication).

2.3 POOL AREA EVALUATION AND RANKING

SWAs and ASWAs were evaluated (scored) and ranked using the same general procedure WESCO and Holland (1982) used. Two different rankings were made, one for comparison with other SWAs in Roseville, one for internal comparison (and comparison with SWAs and ASWAs in the North Central Specific Plan Area where the same data were collected). For comparisons with SWAs elsewhere in Roseville, the same data (pool density and coverage, disturbance, edaphic diversity, pool size and type, and species diversity) were collected (using essentially the same methods) and used in the evaluation. For comparisons within the Northwest Specific Plan Area, additional data, i.e. pool depth, pool boundary distinctness, and the presence of sensitive species, were used.

In each case, scores were assigned to each SWA or ASWA using the 20-point scale and the same mathematical calculations (simple sum and Euclidian metric) described by WESCO and Holland (1982) in their report. The scoring by WESCO and Holland was used to guide scoring in this analysis so that their report could provide context and the results would have similar meaning. The scoring and ranking using the additional data yields results that do not permit comparisons with other areas except the North Central Specific Plan Area because the level of incorporated detail differs substantially.

2.4 SENSITIVE SPECIES SURVEYS

2.4.1 Sensitive Plant Species Survey

Table 1 lists the plant species for which the sensitive plant survey was done and indicates their current status (California

TABLE 1

SENSITIVE PLANT SPECIES THAT COULD OCCUR
IN THE NORTHWEST ROSEVILLE SPECIFIC PLAN AREA

Species: Common name (Scientific name)	Status			Observed On Site
	Federal	State	CNPS	
Sacramento Orcutt grass (<u>Orcuttia viscida</u>)	C1	E	1b	No
Slender Orcutt grass (<u>Orcuttia tenuis</u>)	C1	E	1b	No
Greene's tuctoria (<u>Tuctoria greenei</u>)	C1	E	1b	No
Hoover's spurge (<u>Chamaesyce hooveri</u>)	-	-	1b	No
Bogg's Lake hedge hyssop (<u>Gratiola heterosepala</u>)	C2	E	1b	Yes
Green's legenera (<u>Legenera limosa</u>)	C2	-	1b	No
Dwarf downingia (<u>Downingia humilis</u>)	C3c	-	4	Yes
Red Bluff rush (<u>Juncus leiospermus</u>)	C2	-	4	No
Bogg's Lake dodder (<u>Cuscuta howelliana</u>)	C3c	-	4	No
Vernal pool brodiaea (<u>Dichelostemma lacuna-vernalis</u>)	-	-	4	Yes

Special-status taxa listed above are listed by the California Department of Fish and Game Natural Diversity Data Base (1985) or by the California Native Plant Society (1984).

Status Notes:

Federal status - C1 species are candidate species for federal listing but which have not yet been listed; C2 species are those for which data regarding distribution or threat is inadequate to support listing; C3c species are those which are too widespread and/or are not seriously enough threatened to support listing.

State status - E indicates that the species is listed by the State as endangered.

CNPS status - List 1b species are considered rare and endangered in California and elsewhere; List 4 species are on the "watch list" and are of sufficiently limited distribution to warrant continued monitoring.

Native Plant Society 1984, California Department of Fish and Game 1985). The survey for these species was conducted through a series of visits conducted on the following days: March 31 and April 1, April 7, April 11 and 12, April 23, April 28, May 7, and June 3. The survey was conducted in conjunction with the physical measurement and botanical survey of the pools for the pool evaluations described above. The visits were distributed throughout the growing season. The growing season began earlier and was compressed because of the lower-than-normal winter rainfall (resulting in a shorter period of pool inundation) and higher-than-normal temperatures (which caused more rapid pool evaporation and drying). The period of observation varied among pools and was extended later into the summer for the larger, deeper pools which contained standing water longer.

The rare plant survey was designed to cover the entire Plan Area, but, as indicated above in section 1.3, the Plan was revised as of July 14, 1987, and by that time it was too late to survey them. For this reason, the sensitive plant survey is not complete.

2.4.2 Tiger Salamander Survey

The survey for the tiger salamander was conducted on May 16-17 and May 23-24, 1987, by Dr. Theodore J. Papenfuss of the University of Museum of Vertebrate Zoology at Berkeley and Mr. Robert Macey of the University of California at Santa Cruz. The methods used are described in the report contained in Appendix A to this report.

2.5 IMPACT ASSESSMENT

Impacts were assessed in general terms by assessing direct Plan Area-wide loss and evaluating the potential indirect impacts on pools left intact. Pool locations and SWA and ASWA boundaries were transferred from the aerial photographs to a copy of the Specific Plan dated July 14, 1987, and data were analyzed by proposed land use to assess the effects development of each parcel would have in terms of the number and area of pools, pool quality, and sensitive plant species.

Variables in addition to those used in ranking SWAs and ASWAs were taken into consideration of the significance of impacts on pools. Vernal pools are associated with a variety of soil types, parent materials, and landscape features, some of which are more common than others. Pools associated with combinations that have been reduced greatly in abundance elsewhere are, in a regional sense, more threatened and worthy or greater attention when considering mitigation.

3.0 RESULTS

3.1 DISTRIBUTION OF VERNAL POOLS WITHIN THE PLAN AREA

3.1.1 General Distribution within the Plan Area

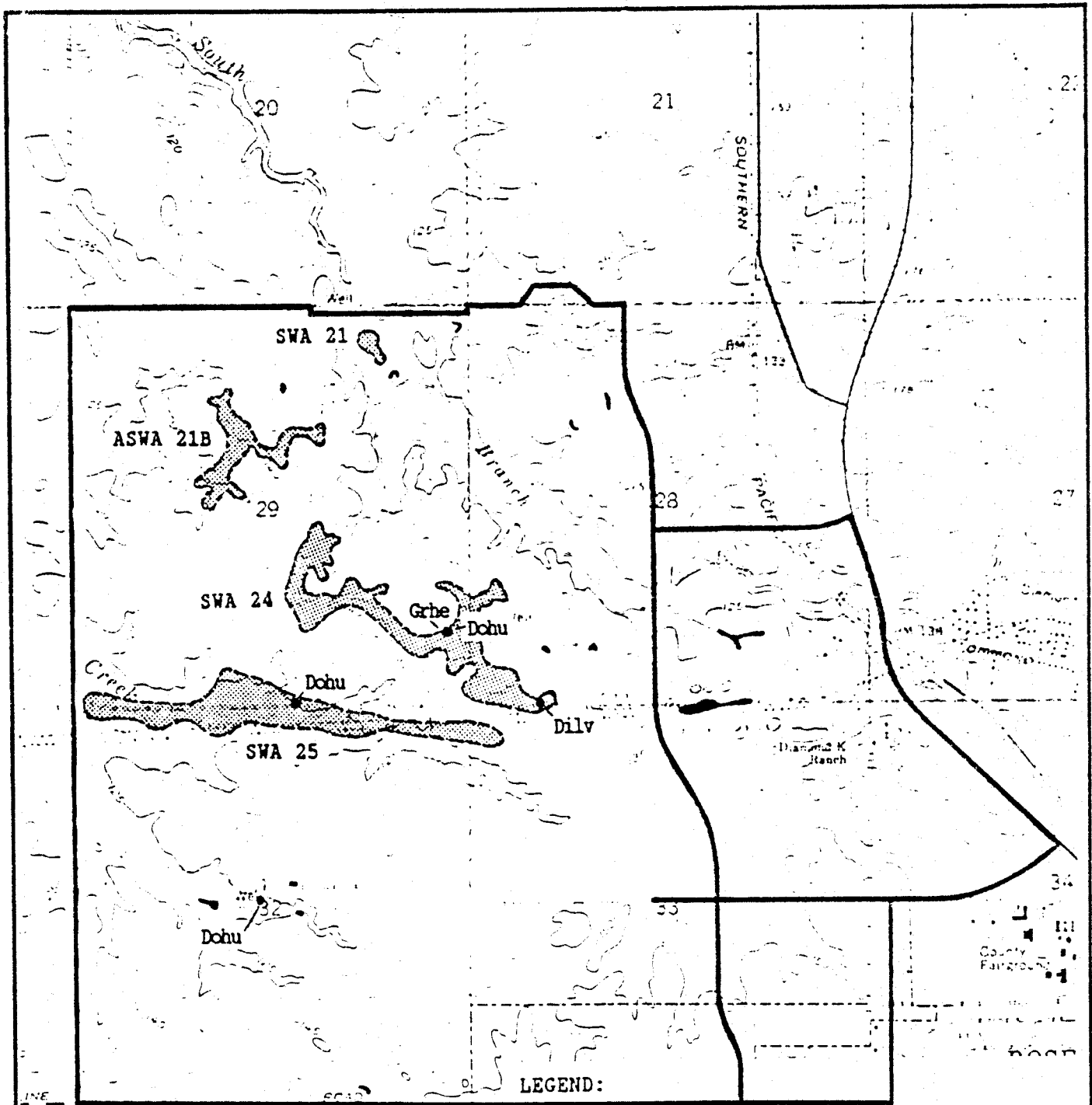
The Plan Area contains approximately 321 vernal pools. Of these, 281 are within the area that was surveyed; approximately 40 occur along the western margin outside the area surveyed, but the exact number has not been determined.

The pools are concentrated primarily in the northeast quarter of the Plan Area in and north of the existing transmission line corridor and east of Foothills Blvd. (Figure 3). Two small clusters of pools occur east of Foothills Blvd. and three smaller clusters occur south of the transmission lines along the proposed extension of Cook-Riolo Road and near Base Line Road. Pool density is generally greatest in a band approximately 3000 feet wide that crosses the Plan Area east to west through its midsection. The southern limit of the band roughly coincides with the southern limit of the existing transmission line corridor through the center of the Plan Area.





3.1.2 Distribution with respect to Physical Features


3.1.2.1 Physical Features. The site is a rolling complex of hills and valleys through which Pleasant Grove Creek flows and in which the numerous tributaries to both Pleasant Grove and Kaseberg Creek originate. Except for a xerofluent stringer along Pleasant Grove Creek, the soils belong to the Cometa-Fiddymont complex, Fiddymont, and Cometa-Ramona series, all low-terrace soils with an impermeable claypan or indurated layer at a depth of approximately 28 inches (U.S. Department of Agriculture 1980). Together with microtopographic depressions, the impermeable layer causes soil saturation, encourages surface accumulation of water, and helps create the amphibious conditions necessary to vernal pools.

Low mound-and-depression relief common to areas where vernal pools occur is locally superimposed upon the larger-scale landscape features in the Plan Area. This microrelief pattern is more common in the northern half than in the southern half of the Plan Area and is most pronounced in the wide midsectional band described above. Associated with these low mounds are a network of ephemeral swales which weave around them, carrying surface water into the tributaries that flow into Pleasant Grove and Kaseberg Creeks.



LEGEND:

-  Redefined SWA or new ASWA
-  Area of concentrated pools (other than SWAs and ASWAs)
-  Sensitive plant locations
-  Four-letter symbol indicates species
 Dohu = Downingia humilis
 Grbe = Gratiola heterosepala
 Dilv = Dichelostemma lacuna-vernalis

 Scale: 1:24,000

Source: U.S.G.S. 7.5-minute Roseville topographic quadrangle.

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FIGURE 3. SWAs, ASWAs, AREAS OF CONCENTRATED POOLS, AND SENSITIVE PLANT POPULATION LOCATIONS

Discing operations associated with dryland wheat farming may have reduced the mound-and-depression microrelief wherever it took place in the past.

In spite of clearing over the years (Johnson personal communication), many blue oak are still present, particularly north of the transmission lines. Tree density varies, and is greatest along Pleasant Grove Creek and its larger tributaries.

3.1.2.2 Pool Distribution. Vernal pools occur occasionally throughout the rolling terrain of the Plan Area but are most abundant where the mound-and-depression microtopography is well developed. No pools occur on the xerofluvents or on the Fiddymment series (which is limited to a very small area) but they are widely distributed over the Cometa-Fiddymment complex and Cometa-Ramona sandy loam in the northern half of the Plan Area.

Vernal pools may have been present in greater number in the past in the southern half of the Plan Area where dryland wheat farming occurred for several years. The 1985 aerial photographs show small pool-sized areas that appear to be saturated but field visits show that these areas are very shallow and washy; originally a pool may have been present at each of these saturated sites (where water still tends to accumulate) but discing eliminated many and reduced the depth of others. The same past activities may explain the absence of pools along the western edge of the North Central Specific Plan Area.

3.1.3 Distribution With Respect to Previously Mapped SWAs

The locations of SWAs, ASWAs, and areas of concentrated pools are shown on the map in Figure 3. Of the approximately 281 vernal pools identified in the surveyed portion of the Plan Area, only 48 (less than 20 percent) occur within the SWAs 21, 24, and 25 mapped by WESCO and Holland (1982). The remaining 233 (approximately 82 percent) occur outside these three SWAs as they were originally mapped. Of the 40 pools in the unsurveyed western margin, 19 or 20 may fall within the originally defined limits of SWA 20, but photointerpretation suggests that SWA 20 could be expanded to include many of the remainder.

The fact that Holland could not get access to "ground truth" his photo observations in most of the Plan Area no doubt explains the high percent of pools outside the original SWAs. The reconnaissance at the start of this study provided an opportunity Holland lacked and suggested boundary refinement and/or partial relocation of each SWA. Three of the SWAs (24, 25, and 21) in the Plan Area

were redefined and another pool area (ASWA 21B) was established (Figure 3). SWA 25 was extended to the east; much of the area of SWAs 21 and 24 that did not contain pools was eliminated, and two areas of pools north of the original boundary were added to SWA 24. Because no field work was done in SWA 20 no changes were made.

A new pool area, ASWA 21B, was delineated northwest of SWA 24 and distinguished from it because of differences in topographic position and historical land use. SWA 24 is situated primarily on the south-facing slope which drains toward Kaseberg Creek and most of the pools occur in close association with the network of swales. The pools in ASWA 21B occur on relatively level terrain along the topographic divide between the Pleasant Grove and Kaseberg Creek watersheds. Most of the pools in ASWA 21B are in an area that was subject to dryland wheat farming; those in SWA 24 have been subject only to grazing.

Together, the redefined SWAs and the new ASWA contain 184 pools or approximately 66.7 percent of the total number in the Plan Area.

3.2 SENSITIVE SPECIES SURVEY

3.2.1 Sensitive Plant Species Survey

The sensitive plant survey for the Plan Area is incomplete. An undetermined number of pools (approximately 40) occur in lands added to the Plan Area after the survey was completed. No information was available regarding sensitive plant presence in the added area and none was developed during this study.

Three rare plant species were found in surveyed portion of the Plan Area: Bogg's lake hedge hyssop (Gratiola heterosepala), dwarf downingia (Downingia humilis), and vernal pool brodiaea (Dichelostemma lacuna-vernalis). The locations at which they were found are marked in Figure 3. Bogg's Lake hedge hyssop was found in one pool in redefined SWA 24. Dwarf downingia was found in three pools: one in SWA 25 adjacent to the transmission lines, one in SWA 24 (the one with Bogg's lake hedge hyssop), and one in the southern half of the Plan Area near a tributary to Kaseberg Creek. One solitary vernal pool brodiaea was found, an unusual occurrence off and away from the Mehrten Formation where (in the North Central Specific Plan Area) it occurs abundantly.

The pool in which Bogg's Lake hedge hyssop and dwarf downingia occur together is one of the two richest pools in the Plan Area. It is nine inches deep and approximately 1400 square feet in area.

It contains three species of downingia (Downingia bicornuta and D. ornatissima in addition), goldfields (Lasthenia chrysostoma, bracted hedge hyssop (Gratiola ebracteata) (a close relative of Bogg's lake hedge hyssop), quillwort (Isoetes sp.), whitehead navarretia (Navarretia leucocephala), pilularia (Pilularia americana), woolly marbles (Psilocarphus brevissimus) and Tenellus woolly-head (P. tenellus). Together with their associates, these species present a showy display of virtually the full composition-al range possible in this region. Neither species is abundant in this pool, but dwarf downingia is more abundant (200-300 plants) than Bogg's lake hedge hyssop (under 100 plants).

The other pools containing dwarf downingia are of variable size, ranging in area from approximately 200 to 1000 square feet. Both are about four inches deep and are very depauperate, containing only eight and nine vernal pool species, respectively. Non-vernal pool species are well represented and several (Spergularia sp., Erodium cicutarium, Hemizonia fitchii, Lolium multiflorum) contribute moderately to the total plant cover in each. Fewer than 100 dwarf downingia are present in the pool near the tributary to Kaseberg Creek and only a few plants are present in the pool adjacent to the transmission line.

The lone vernal pool brodiaea occurs in the annual grassland several hundred feet away and upslope from a pool in a swale. Its presence is remarkable because no other vernal pool brodiaea was found either in the Northwest Specific Plan Area or the western portion of the North Central Specific Plan Area off the Mehrten Formation.

3.2.2 Tiger Salamander Survey

The survey for the tiger salamander began late in the season when most of the shallow pools were either dry or, if the pool bottom was still saturated, no longer contained ponded water. The deeper pools and the cattle stock watering ponds contained water and some ponds still remained in Pleasant Grove Creek and the major tributaries to it and to Kaseberg Creek. These deeper pools and the channel-related ponds are generally the best potential salamander habitat in the Plan Area. Shallow vernal pools that dry early or go through a sequence of drying and rewetting or ponding between rains and small intermittent channels which flow only during and immediately after rains do not provide suitable habitat during the breeding season.

The survey results are contained in Appendix A to this report. Bullfrogs and Pacific treefrog larvae were found at several sites and aquatic garter snakes, gopher snakes, and Gilbert's skinks

were found at pool margins and on shore along the creeks. Western fence lizards were also found.

Apparently suitable habitat in the Plan Area is not currently inhabited by the tiger salamander (Papenfuss personal communication). This finding is not unusual for the species in this part of its distributional range. The tiger salamander occurs very sporadically throughout its range and Roseville is situated near its known northern limit (Brode personal communication). North of Roseville, the species has been observed at only a single location near Woodland.

A survey conducted at the same time on Stanford Ranch four miles northeast in the City of Rocklin also produced no findings of the tiger salamander (Riggan personal communication). Riggan believes that the pools on Stanford Ranch are too shallow to support the species; Papenfuss (personal communication) believes that, in addition, the presence of bullfrogs, which are abundant in the Plan Area and are known to prey on tiger salamander larvae, may have eliminated it from those pools which contain water long enough and provide suitable for it (Papenfuss personal communication).

3.3 COMPARISON OF POOL AREAS WITHIN THE PLAN AREA

Table 2 summarizes most of the information used to rank SWAs and ASWAs, and shows the scores (assigned values for ranking factors) and the final rankings. Other information used in arriving at the rankings, such as boundary distinctness and range in size and depth, the presence of rare plant species, etc. has not been included in the table.

Overall, the pools in SWA 24 are most highly ranked. They are not the largest pools, but pool density and coverage are high, and they are, on the average, the deepest and floristically richest pools in the Plan Area. One pool also contains two sensitive species, Bogg's Lake hedge hyssop and dwarf downingia. SWA 21 ranks slightly lower than SWA 24 but, based on the simple sums and Euclidian Metrics, SWA 25 and ASWA 21B are of much lower value.

Considering all the pools in each, SWAs 24 and 21 are less similar than the ratings in Table 2 suggest. The summary table shows that, on the average, SWA 21 contains the largest pools, but most of the pools in it are quite small. The high average pool size and pool coverage are overly influenced by one pool with an area exceeding 14,000 square feet. Actually, average pool size in SWA

TABLE 2

RESULTS OF ASSESSMENT OF VERNAL POOL AREAS
NORTHWEST ROSEVILLE SPECIFIC PLAN AREA

Pool Area (SWA or ASWA)	Ranking Factors											Assigned Values for Ranking Factors								Pool Area Rank		
	No. Pools	Area in acre	Soil % divers. in Soil types	Dis-turb-ance	Pool size and type		Total no. of sp. in pool area			Average no. of sp. /pool		Average pool ratio VP sp. Non-VP sp.	No. pools per acre	% area in diver-sity	Dis-turb-ance	Pool Plant size and diver-sity		Totals		Simple Euclidian Sum	Simple Euclidian Rank	
					Avg. area (sf)	Avg. depth (in)	VP sp.	Non-VP sp.	VP sp.	Non-VP sp.	size					sp.	Sum	Metric				
SWA 20 (not surveyed)	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SWA 21 (redefined)	2.3	13.2	1	C	3358	5.0	36	32	16.0	11.0	2.33	9	16	3	8	16	16	68	19.3	2	2	
SWA 24 (redefined)	3.0	7.2	2	C	1093	5.6	46	20	14.3	10.1	3.02	16	14	10	12	13	17	82	19.6	1	1	
SWA 25 (redefined)	1.2	2.2	1	C,Ag	1207	4.4	21	13	8.3	4.0	2.07	3	6	4	11	13	10	47	14.0	4	4	
ASWA 21B	1.9	3.2	2	C,Ag	759	3.6	26	19	7.3	4.1	2.31	7	11	10	8	9	6	51	12.5	3	3	

Table notes:

SWA 20 is outside the area that was surveyed; it is in an area that was added to the Plan Area after the field survey was completed had been completed.

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21 more closely resembles that in ASWA 21B. Except for the one pool, the pools in SWA 24 are larger than those in SWA 21.

The deepest pools in the Plan Area also occur in SWA 24. With one exception, the pools in SWA 21 are shallow and washy. The pools in both SWA 25 and ASWA 21B have been affected by dryland wheat farming, the physical effect of which appears to have been diminishment of original microrelief. Mounded topography was lowered and depressions were filled.

The large pool in SWA 21 is unique in the Plan Area. It contains virtually every vernal pool species that could be expected in this region. No other pool is as large or deep; none of the series of "next-larger" pools is anywhere near as rich floristically and none of the pools of close but lesser floristic richness is anywhere near as large or deep.

Both the discing and chemical spraying associated with dryland wheat farming have obviously affected species richness and the relative abundance of pool and non-pool species. The pools in SWA 25 are in an area that was farmed until three years ago; wheat farming was discontinued in the area containing ASWA 21B eight years earlier (Johnson personal communication). No such practices ever occurred in the area containing SWAs 21 and 24. SWA 25 has the lowest total number of vernal pool species (21) and ASWA 21B the next least (26). SWAs 21 and 24 support considerably more, 36 and 46 species, respectively, but they also contain more non-pool species. Discing and spraying have suppressed all species, lowering the total number present. Although no quantitative data were collected, non-pool species appear to contribute greater total cover in SWA 25 than in ASWA 21B, and greater total cover in either of these two pool areas than in SWAs 21 and 24. The time required for recovery (with or without the effects of cattle grazing) is not known.

3.4 COMPARISON WITH POOL AREAS ELSEWHERE IN ROSEVILLE

3.4.1 Comparisons with Other SWAs

Table 3 shows the rankings of the redefined SWAs and the new ASWA in the Plan Area relative to those of other SWAs elsewhere in Roseville. SWA 20 is not included in the table because no data were collected in it and no comparison is possible. The scores assigned to each of the six variables for the SWAs in the North Central Specific Plan Area are the original scores assigned by WESCO and Holland and do not reflect the evaluation of the North Central Specific Plan Area done concurrently with this evaluation.

Compared with all the SWAs in Roseville, SWA 24 ranks near the top and SWA 21 ranks near or in the upper third. SWA 25 ranks in the lower third and ASWA 21B ranks near the bottom. SWA 24 ranks high in every category and SWA 21 ranks high in terms of pool size and type and floristic diversity. The Euclidian metric ranking of 6 for SWA 24 using the Euclidian metric may appear misleading because several SWAs are "tied" for first and second (rankings of 1, 4, and 5 were not assigned). SWA 24 ranks third outright using the simple sum and is tied for third using the Euclidian metric. Using the combined simple sum and Euclidian metric scores, SWA 24 ranks among the four most valuable vernal pool areas in Roseville and, in terms of quality, compares favorably with SWAs 3, 34, 35, and 38, which WESCO and Holland (1982) considered the "highest rated pool areas".

The rankings of the SWAs in the Northwest Roseville Specific Plan Area may be lower than is warranted because of the way pool density (number of pools/acre) and coverage (percent area occupied by pools) were measured by WESCO and Holland (1982). They used only one transect in each SWA and total pool number and area were measured indirectly, without the benefit of an actual count or direct (individual) pool measurement. Complete counts and direct measurements were made for every pool in the Northwest Specific Plan Area.

Comparison of pool density and coverage estimates in the several SWAs in the North Central Specific Plan Area that were originally surveyed by WESCO and Holland and reevaluated by Stromberg (1987b) illustrate the consequent differences in pool density and coverage estimates. With one exception, estimates of pool density and coverage are much higher in the WESCO and Holland study. Because the analysis reported here and the analysis in the North Central Specific Plan Area relied on direct measurement which yields more accurate results, indicating that, for purposes of comparison, the scores for pool density and coverage for other SWAs in Roseville may be unduly inflated. If the scores and rankings were adjusted to account for the difference (an artifact of the methods used), all the SWAs and the new ASWA in the Plan Area may rank higher than Table 3 indicates.

3.4.2 Comparison with the North Central Roseville Specific Plan Area

The vernal pools in the Northwest Specific Plan Area occur on visibly different topography underlain by different parent rock and soils. The Mehrten Formation and its related surface and subsurface features, both dominant in the North Central Specific

TABLE 3

COMPARISON OF VERNAL POOL AREAS IN THE
NORTHWEST SPECIFIC PLAN AREA
AND ELSEWHERE IN ROSEVILLE

SWA or ASWA	Raw Data		Score							Total Score		Rank	
	No. Pools in acre	Pct. Area in pools	Number pools per acre	Pct. area in pools	Edaphic diver- sity	Dis- turb- ance	Pool size and type	Plant diver- sity	Simple Sum	Euclidian Metric	Simple Sum	Euclidian Metric	
<u>NORTHWEST SPECIFIC PLAN AREA:</u>													
SWA 21 (R)	2.3	13.2	4	16	3	8	13	16	60	18	8	7	
SWA 24 (R)	3.0	7.2	6	12	12	12	13	17	72	19	3.5	6	
SWA 25 (R)	1.2	2.2	2	6	4	11	10	10	43	12	14	15	
ASWA 21B	1.9	3.2	3	7	2	8	8	8	36	10	20	17.5	
<u>POOL AREAS ELSEWHERE IN ROSEVILLE (from WESCO and Holland 1982):</u>													
SWA 3	2.9	20.0	6	20	10	9	13	14	72	21	3.5	2	
SWA 9	4.3	4.0	8	9	5	5	4	4	30	8	22	20	
SWA 13/14	2.8	13.0	5	16	9	10	11	7	55	14	11.5	12	
SWA 15	5.7	6.0	11	11	8	14	12	11	62	16	7	8.5	
SWA 18	2.66	7.0	5	12	4	13	13	8	27	9	23	19	
SWA 19	5.39	12.0	10	15	6	9	11	7	55	14	11.5	12	
SWA 26	2.25	3.0	4	8	3	5	6	10	31	10	21	17.5	
SWA 28	4.39	12.0	9	10	6	7	8	6	41	10	17	17.5	
SWA 30 (NC)	6.49	9.0	13	13	7	10	12	8	59	15	9	10	
SWA 31	6.83	9.0	13	13	5	9	8	7	51	14	14	12	
SWA 32N	1.30	3.0	2	3	4	5	5	4	23	6	24	21	
SWA 33	2.87	0.0	6	0	4	12	8	9	39	13	18	13.5	
SWA 34	10.29	5.0	20	10	7	15	15	12	74	21	2	2	
SWA 35	3.62	4.0	7	9	13	16	17	14	71	19	5	6	
SWA 36	5.72	6.0	11	11	4	14	13	8	56	16	10	8.5	
SWA 37	1.80	3.0	3	8	5	10	9	8	38	11	19	16	
SWA 38	4.01	20.0	8	20	12	10	16	13	79	21	1	2	
SWA 40	5.07	4.0	10	9	8	14	17	14	67	19	6	6	
SWA 52	0.92	3.0	2	8	5	12	7	10	44	13	15	13.5	
SWA 54	10.91	6.0	20	6	4	8	6	4	53	20	13	3	

Table notes:

(R) indicates that the SWA has been redefined (boundaries have been relocated).

Because the ranking reflects the inclusion of SWAs in the Northwest Roseville Specific Plan Area they differ from those in the report by WESCO and Holland (1982).

The individual or total scores for the SWAs in the North Central Roseville Specific Plan Area have not been modified to account for the results of the 1987 survey and evaluation. All SWAs were redefined in the North Central Specific Plan Area but the basis for the evaluation differs and does not permit comparisons with SWAs elsewhere in Roseville.

Reference: WESCO and Holland, R. F. 1982. Vernal pool resources, inventory and evaluation, City of Roseville, California. Submitted to City of Roseville Planning Department, Roseville, California. 61p. + appendices.

Plan Area, do not occur in the Northwest Specific Plan Area. The soils in the Northwest Specific Plan Area belong to the Cometa-Fiddyment complex or are Cometa-Ramona sandy loams, neither of which is widespread in the North Central Specific Plan Area. The many pools uniquely situated amongst blue oak trees in the oak savanna and oak woodland are unique to the Northwest Specific Plan Area. No such pool setting exists in the North Central Specific Plan Area.

Compounding the effects of different physical settings are dissimilar land use histories. Cattle have been grazed for decades in both areas. Dryland wheat farming, on the other hand, has occurred primarily in the western portion and southern half of the Northwest Specific Plan Area. These agricultural operations and the elapsed time since discontinuation, affect species richness in the pools in the areas that were farmed. The effect may have been to reduce species richness to levels more similar to those on Mehrten Formation pools in the North Central Specific Plan Area.

Table 4 shows a comparison of the pools in the two Plan Areas. On the basis of non-weighted averages (not accounting for the differences in number of pools in individual SWAs between the two Plan Areas), it appears that the pools in the Northwest Specific Plan Area are slightly floristically richer. The range in size and depth is greater in the North Central Specific Plan Area, but the Northwest Specific Plan Area contains the larger and deeper pools. In general, however, pool densities and pool coverages are similar between the two Plan Areas. The average number of species per SWA in the North Central Specific Plan Area is 29.6; in the Northwest Specific Plan Area the average is 32.3 species per SWA. If the botanical differences are not statistically significant, the cause is undoubtedly the lingering effects of the long-term dryland wheat farming over much of the Northwest Specific Plan Area that substantially reduced vernal pool species abundance.

Using the total scores obtained by simple sum and Euclidian metric, SWAs 21 and 24 in the Northwest Specific Plan Area would rank high by comparison with those in the North Central Specific Plan Area. Using simple sums, SWA 24 would rank first, SWA 28 (North Central) would rank second, and SWA 21 would tie for third with SWA 30 (North Central). Using the Euclidian metrics, SWAs 21 and 24 would rank first and second. The effect of an extremely large pool in SWA 21 (over 14,000 square feet), of course, skews the comparison between the SWAs but SWA 24 is without doubt the most highly ranked SWA in either Plan Area. It contains large, deep pools at high density and total coverage and the greatest number of vernal pool species (46) of any SWA in the Plan Area.

TABLE 4

COMPARISON OF VERNAL POOL AREAS BETWEEN THE
NORTHWEST AND NORTH CENTRAL SPECIFIC PLAN AREAS

Pool Area (SWA or ASWA)	Ranking Factors												Assigned Values for Ranking Factors						Totals		Pool Area Rank	
	No. Pools	Area in acres	Soil % divers. No. of Soil types	Dis-turb-ance	Pool size and type		Species Diversity				No. pools per acre	% in diver-sity	Soil diver-sity	Dis-turb-ance	Pool size and diver-sity	Plant sp.	Simple Sum	Euclidian Metric	Simple Sum	Euclidian Metric		
					Avg. area (sf)	Avg. depth (in)	Total no. of sp. in pool area	Average no. of sp./pool	Average pool ratio	VP sp.											Non-VP sp.	VP sp.
<u>Northwest Roseville Specific Plan Area</u>																						
SWA 21 (redefined)	2.3	13.2	1	C	3358	5.0	36	32	16.0	11.0	2.33	9	16	3	8	16	16	68	19.3	2	2	
SWA 24 (redefined)	3.0	7.2	2	C	1093	5.6	46	20	14.3	10.1	3.02	16	14	10	12	13	17	82	19.6	1	1	
SWA 25 (redefined)	1.2	2.2	1	C,Ag	1207	4.4	21	13	8.3	4.0	2.07	3	6	4	11	13	10	47	14.0	4	4	
ASWA 21B	1.9	3.2	2	C,Ag	759	3.6	26	19	7.3	4.1	2.31	7	11	10	8	9	6	51	12.5	3	3	
SWA 20 (unsurveyed)	(No data available)																					
<u>North Central Roseville Specific Plan Area</u>																						
SWA 15	2.5	2.3	1	C	401	3.9	20	7	8.0	3.8	2.96	11	7	4	12	4	3	41	13.0	7	7	
SWA 13/14	3.4	3.7	2	C	408	4.3	26	12	10.1	3.5	4.49	12	10	10	12	4	8	56	14.2	3	5	
SWA 28	2.5	6.5	3	C	1120	3.7	41	27	13.3	4.1	3.48	11	13	12	10	12	16	74	17.7	1	1	
SWA 29	-	-	-	-	-	-	-	-	(No Pools Present)				-	-	-	-	-	-	-	-	-	-
SWA 30	1.4	3.5	5	C	1075	5.7	34	18	12.5	3.5	5.72	4	10	16	10	14	11	65	17.5	2	2	
SWA 31	2.9	2.6	1	C	428	4.9	40	23	11.1	3.9	4.50	13	8	4	10	6	15	54	16.1	4	3	
ASWA 13/14B	1.1	2.1	2	C	878	3.8	39	29	10.3	3.1	5.05	3	6	8	10	10	13	50	13.9	5	6	
ASWA 15B	3.2	3.1	2	C	469	4.3	21	8	9.1	1.7	8.31	15	9	8	10	6	8	56	15.6	3	4	
ASWA 28B	1.5	1.1	2	C	350	2.2	24	15	7.7	4.9	2.33	4	3	8	8	2	4	29	9.0	8	10	
ASWA 30B	1.9	3.7	2	C	623	3.3	20	10	12.5	3.0	5.67	7	10	8	8	8	6	47	11.2	6	9	
ASWA 31B	1.0	1.4	2	C	581	4.7	31	16	8.2	3.8	2.92	2	4	8	9	8	10	41	11.5	7	8	

Table notes:

No data are available for SWA 20 because it was not surveyed; it occurs in land added to the Plan Area after the field survey had been completed.

4.0 ASSESSMENT OF IMPACTS

4.1 OVERALL IMPACT ASSESSMENT

4.1.1 Direct Impacts

The Plan Area encompasses 2334 acres. Approximately 93 percent would be developed under the proposed plan dated July 14, 1987. Approximately 156 acres (7 percent) would be retained in two Urban Reserves between the proposed alignment of Cook-Riolo Road and the western Plan Area boundary. No development is proposed at present in the Urban Reserves but future development is possible. Community Parks are proposed for the electrical easements.

The Plan Area contains approximately 321 vernal pools. The distribution of pools, SWAs, and ASWAs with respect to the proposed development is shown in Figure 4. Most are in the undeveloped northern "core" of the Plan Area but four occur between the Greenbriar subdivision and Base Line Road. The total acreage of these pools is unknown because no data are available on 40 pools that were not surveyed but the area of the 283 pools measured in the surveyed portion of the Plan Area is approximately 6 acres; assuming average size, the additional 40 pools would have a combined area of about 0.9-0.9 acre.

The 283 pools in the surveyed area and five or six in the unsurveyed area are in areas that would be developed under the proposed plan. About 32 occur in the Urban Reserve in the northwest corner of the Plan Area.

On other properties in the City of Roseville on which business-professional, commercial, and light industrial development has taken place recently and on residentially developed lands where dwelling units have been constructed at similar densities to those proposed in the Plan Area, all pools have been destroyed as a direct affect of construction. No pools have been retained intact on these parcels. Buildings, driveways, parking lots, and/or landscaped areas together typically cover the entire parcels, leaving essentially no natural habitat.

Although it would be possible to preserve some pools in the proposed golf course, community parks are typically turfed and developed for active recreational activities. Most of the pools within the golf course parcel occur at the margins of clusters of trees or in large openings in which fairways, tees, or greens

Northwest Roseville Specific Plan

Roseville
California

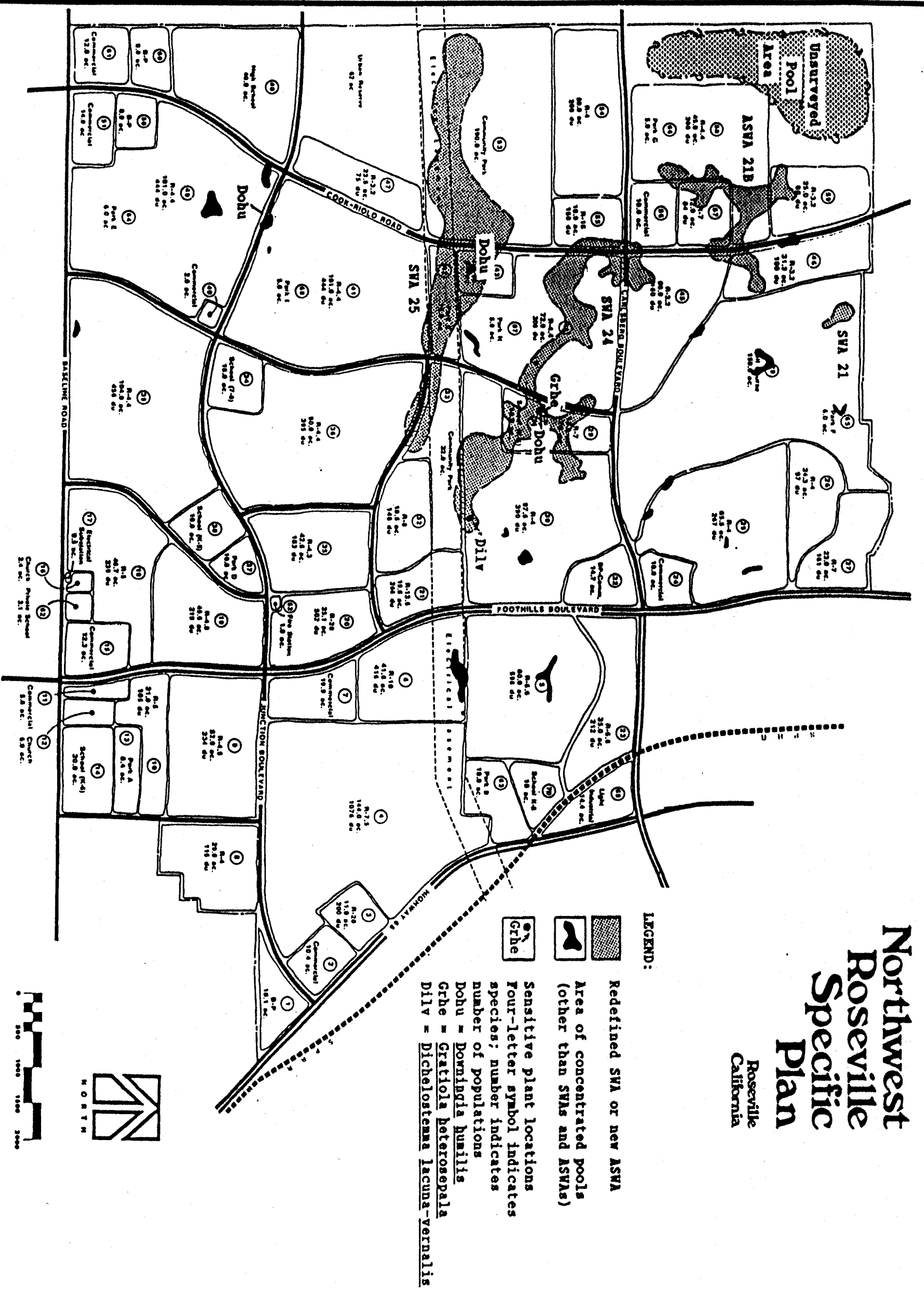


FIGURE 4. DISTRIBUTION OF REDEFINED SWAs, NEW ASWAs, OTHER CONCENTRATIONS OF POOLS, AND SENSITIVE PLANT POPULATIONS WITH RESPECT TO PROPOSED DEVELOPMENT

would be placed because little or no tree removal would be required. Assuming patterns of development in the Plan Area similar to those elsewhere in Roseville, all pools except those in the Urban Reserve would be destroyed in the near term. Pools in the Urban Reserve could eventually be destroyed depending upon the future approved land uses; the fact that development is not proposed in the short term does not ensure future preservation. In the near term, as many as 288-289 of the 321 pools present (89-90 percent) would be eliminated.

Pool destruction would eliminate the known populations of Bogg's Lake hedge hyssop, listed by the state as an endangered species, in one pool (in parcel 31) and dwarf downingia, an unlisted species over which the CNPS maintains a close watch, in three pools (in parcels 31, 43, and 49). The single vernal pool brodiaea, a species with the same status as the dwarf downingia, in parcel 30 would be removed.

4.1.2 Indirect Impacts

Indirect impacts include the effects on any pools that would be retained within the limits of the golf course and on the 32 pools in the Urban Reserve. Residential development would occur in the watersheds tributary to the two primary clusters of pools in the Urban Reserve. Drainage facilities are likely to redirect surface water runoff, modifying hydrologic relations to which vernal pools are extremely sensitive. Some pools could potentially be preserved in the golf course parcel. The primary effects on those retained physically intact would be changes in hydrologic relationships, and reductions in water quality resulting from the introduction of pesticides and herbicides. Both pools in the Urban Reserve and the golf course could also suffer potential alteration of the processes which permit the exchange of reproductive materials between pools (via water, animal, or aerial transport), the long-term consequence of which could be reductions in species richness and pool quality.

4.1.3 Significance of Impacts

The guidelines for the interpretation and application of the California Environmental Quality Act (CEQA) (State of California Office of Planning and Research 1984) justify the assessment of the above affects as significant. Appendix G of the guidelines lists affects on endangered plant species and diminishment of endangered plant species habitat as potentially significant affects. Not all of the pools provide suitable habitat for Bogg's Lake hedge hyssop and dwarf downingia, but many in which the species was not observed this year do. A finding of significance

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is mandatory for projects which would "reduce the number of restrict the range of a rare or endangered plant species" (CEQA Guidelines, Article 5, Section 15065).

The overall effects of development in the Plan Area would be adverse and significant because of the reduction in the range of two rare species, one listed as endangered by the State of California, and because: 1) vernal pools are a valuable natural resource that occurs in only a relatively small area within the State of California (and a few locations elsewhere in the world); 2) the area of vernal pools in California is declining at an alarming rate in the face of agricultural and developmental pressures; 3) virtually all the pools in the Plan Area would be destroyed; and 4) the indirect effects on pools retained in the urban reserve and golf course could reduce pool quality and value.

For purposes of context, the impacts of the loss of 130 vernal pools in the Northeast Roseville Specific Plan Area were judged significant for similar reasons as those outlined above (Jones and Stokes 1986) and no endangered plant populations were affected. In the Northwest Specific Plan Area the loss would be more than twice as great and four rare plant populations would be eliminated.

Reduction of these impacts to a less-than-significant level would require pool preservation outside the golf course. Although artificial creation of pools could compensate for some pool loss, artificial creation would not be acceptable as full mitigation, because of the large loss in pools and the unproven success in attempts at vernal pool reconstruction elsewhere. A number of management and mitigation strategies are possible. They are discussed below in Section 5.0.

4.1.4 Cumulative Effects

Cumulatively, the effects of development on pools in the Northwest, North Central, Northeast, and Southeast Specific Plan Areas of Roseville, and in other areas for which development is proposed (ie., the Collett quarry operated by R. C. Collett, Inc. and Stanford Ranch in the City of Rocklin), would be significant. More than two thousand vernal pools would be destroyed. The effect on regional vernal pool values would be extremely serious, threatening further and considerable diminishment of an already limited and threatened resource.

4.2 IMPACT ASSESSMENT BY PROPOSED LAND USE

4.2.1 Impacts

Table 5 summarizes the analysis of impacts on a land use-specific basis for those parcels which contain three or more vernal pools. A "Vernal Pool Summary and Evaluation" form has been completed for each of these proposed land uses (parcels). The forms are contained in Appendix B to this report.

The greatest impacts on vernal pools would occur as a result of development in parcels 29, 30, 31, 44, and 45, a contiguous set of residential parcels, and parcel 28, which would be the golf course, and parcel 49, a residential parcel removed to the south from the others. The pools on these parcels are generally the largest, deepest, and floristically richest, and contain the populations of Bogg's Lake hedge hyssop and dwarf downingia. The contiguous set of residential parcels includes entirely SWA 24 and the golf course includes the large, exceptional pool in SWA 21.

4.2.1 Significance of Impacts

The basis for determining significance has been presented above in section 4.1.3. Individually, the impacts of development of several parcels would be significant. These parcels include: parcels 28, 29, 30, 31, 44, 45, and 49. The impact on parcel 43, which contains a very small population of dwarf downingia and only three vernal pools is not, alone, considered significant.

4.3 JURISDICTIONAL POLICIES AND AUTHORITY

4.3.1 City of Roseville

The City of Roseville General Plan (City of Roseville 1977) recognizes that vernal pools are valuable and limited in extent. A policy statement in the General Plan providing for the protection of "diverse habitats" and "unique plant species or habitats" provides a guideline for City decision-making but is not accompanied by specific management or protection recommendations or procedures.

4.3.2 Federal and State Agencies

Several federal and state agencies have policies and authorities that can affect development in areas containing vernal pools. These include the U. S. Army Corps of Engineers (Corps) and the

TABLE 5
VERNAL POOL DATA SUMMARY BY PROPOSED LAND USE
NORTHWEST ROSEVILLE SPECIFIC PLAN AREA

Parcel No. (Proposed Use)	Physical Data										Biological Data									
	No. of pools	Total pool acreage	Avg. pool depth (in)	Avg. pool area (sf)	Pool size distribution (%)	Shallow	Moderate	Large	Shallow	Moderate	Deep	Number of VP species	Number Non-VP species	Avg. No. VP sp. pool	Avg. No. Non-VP sp. pool	Avg. pool ratio VP/non-VP	Pct. pools with 10-19 sp.	Pct. pools with 19 sp.	Rare species Present	
30 (R-4)	61	1.55	5.7	2150	29.3	39.6	31.0	24.1	43.1	32.8	46	32	15.0	7.0	2.63	20.0	60.0	20.0	Dilv	
44 (R-4.4)	28	0.86	5.6	1295	4.2	58.3	37.5	4.2	70.8	25.0	31	21	12.1	4.8	3.10	20.0	80.0	0.0		
53 (Community Park)	19	0.30	3.4	723	0.0	71.4	28.6	14.3	85.7	0.0	21	12	8.8	4.3	2.06	75.0	25.0	0.0		
28 (Golf Course)	18	0.46	4.6	1726	14.3	57.1	42.6	7.1	78.4	28.5	43	39	13.5	9.0	2.29	18.7	62.6	18.7		
42 (Park)	17	0.49	4.9	1265	26.7	26.7	46.6	0.0	66.7	33.3	17	-	7.4	3.5	2.09	80.0	20.0	0.0		
45 (R-3.2)	17	0.22	4.7	558	33.3	46.7	20.0	13.3	66.7	20.0	25	18	10.0	4.0	2.71	27.2	72.8	0.0		
58 (R-4.4)	16	0.23	3.8	631	6.3	75.0	18.7	12.5	81.3	6.2	18	10	6.8	3.3	2.46	88.9	11.1	0.0		
49 (R-4.4)	16	0.15	4.1	984	0.0	68.9	31.1	6.3	87.4	6.3	21	17	7.9	5.0	1.58	87.5	12.5	0.0	Dohu	
31 (School K-5)	11	0.23	7.1	910	9.1	36.4	54.5	0.0	54.5	45.5	39	21	19.7	7.5	4.16	0.0	54.5	45.5	Grte, Dohu	
46 (R-3.2)	11	0.21	2.8	709	10.0	60.0	30.0	50.0	40.0	10.0	19	9	8.3	4.7	1.98	71.4	29.6	0.0		
6 (R-10)	11	0.13	4.9	529	36.4	63.6	0.0	27.2	45.6	27.2	23	20	7.1	7.6	1.41	27.2	71.4	0.0		
25 (R-5)	10	0.24	3.9	959	11.1	77.8	11.1	11.1	88.9	0.0	19	14	13.4	7.6	1.85	0.0	100.0	0.0		
57 (R-7)	9	0.19	4.2	914	12.5	50.0	37.5	12.5	62.5	25.0	15	-	7.4	5.4	2.33	-	-	-		
29 (R-7)	5	0.08	6.3	663	20.0	60.0	20.0	40.0	20.0	40.0	30	17	13.8	5.0	4.34	20.0	60.0	0.0		
41 (R-4.4)	5	0.01	5.0	88	100.0	0.0	0.0	0.0	100.0	0.0	10	3	7.7	3.7	2.28	66.7	33.3	0.0		
5 (R-6.6)	4	0.17	4.8	1900	0.0	50.0	50.0	0.0	100.0	0.0	20	14	10.3	6.8	1.78	50.0	50.0	0.0		
33 (Community Park)	4	0.12	4.3	1303	0.0	50.0	50.0	0.0	75.0	25.0	12	10	8.0	5.3	2.08	100.0	0.0	0.0	Dohu	
43 (R-12)	4	0.01	4.0	210	100.0	0.0	0.0	0.0	100.0	0.0	10	6	10.0	6.0	1.67	0.0	100.0	0.0		
39 (R-4.4)	3	0.07	7.3	1025	0.0	66.7	33.3	33.3	0.0	66.7	14	11	8.3	5.7	1.92	66.7	33.3	0.0		
55 (R-15)	3	0.06	5.3	886	0.0	66.7	33.3	0.0	100.0	0.0	14	8	6.3	5.0	1.24	100.0	0.0	0.0		
Nine additional pools	9	0.20																		
Totals:	281	5.98 acres																		
Unsurveyed area	40	undetermined																		

Table notes:
 Dilv = vernal pool brodiaea (*Dichelostema lacune-vernalis*)
 Dohu = dwarf downingia (*Downingia humilis*)
 Grte = Boggs' Lake hedge hyssop (*Gratiola heterosepala*)

The nine additional pools occur one or two per parcel (proposed land use area) and summary data were not developed.
 Forty additional pools occur in lands added to the Plan Area after the field survey had been completed. No data were collected.
 no previous information was available.

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Environmental Protection Agency (EPA) and Fish and Wildlife Service (Service), and the California Department of Fish and Game (CDFG). Each has a different mission and policies and past different practices of involvement in protecting vernal pools. The following sections briefly outline the policies, permit requirements, and agency action and interaction as they apply to vernal pools and to sensitive species that they may contain. No other coverage is intended.

4.3.2.1 U. S. Army Corps of Engineers. Under section 404 of the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act), the Corps is responsible for issuing permits to place dredged or fill material into waters of the United States. Depending upon their relationship to natural drainage features, vernal pools have been recognized by the Corps as either adjacent or isolated wetlands, but in either case they have been defined and recognized as waters of the United States.

If an applicant proposes to discharge (place) fill into waters, which include wetlands and vernal pools, it must notify the Corps of his intent; regardless of the acreage involved, no placement is permitted until the District Engineer has notified the applicant that work may proceed. If less than one acre would be filled, the environmental effects of the fill are minimal and all permit conditions are met, the work may be permitted under nationwide permit N26 (for work above headwaters and in isolated waters and wetlands). If between one and 10 acres would be filled, the work may be permitted under either nationwide permit N26 or under an individual permit, depending upon how the Corps' exercises its discretionary authority. Fill of 10 or more acres requires an individual permit. However, for special aquatic sites, which include vernal pools, or for areas that support federally listed threatened or endangered species, the Corps is not obliged to issue a nationwide permit even if less than one acre of wetland would be filled.

If the Corps is to issue an individual permit, it will require that alternatives to the proposed project be analyzed. In this analysis, the applicant must show that the proposed use is water-dependent, that there are no "practicable" alternatives (given existing technology, cost, and logistics) by which the project objectives can be achieved, and that the project would be least environmentally damageable in the form proposed. After having received the alternatives analysis and considered the impacts, the Corps may issue a permit (Coe personal communication).

According to the Corps (Environmental Laboratory 1987), wetlands are "those areas that are inundated or saturated by surface or

ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions". The Corps uses a multi-parameter approach to determine whether or not an area meets the definition and is under its jurisdiction. Under "normal circumstances", the approach must reveal positive evidence of hydrophytic vegetation, hydric soils, and wetland hydrology for an area to be defined as a wetland.

Vernal pools are not necessarily wetlands. However, positive evidence exists for each parameter in all but the shallowest, washy pools and most are either partially or entirely wetlands according to the Corps' definition (Stromberg 1987c). Most are ponded for periods in excess of 30 days (wetland hydrology) and have soils in which anaerobic conditions exist for seven or more days during the growing season (hydric soils), and they support a predominance of species that are obligate or facultative wetland species (hydrophytic vegetation) according to the National Wetlands Inventory (U. S. Fish and Wildlife Service 1987).

The legal basis for protecting the waters of the United States under the Clean Water Act is preservation of interstate commerce. Preservation of habitat for waterfowl which cross state lines during migration has been found to constitute preservation of interstate commerce under the Act. Migratory waterfowl do use the larger vernal pools in the Plan Area; mallard and cinnamon teal were observed on several occasions in pools during March and April when they still contained water.

4.3.2.2 U. S. Environmental Protection Agency. The EPA employs the same definition of wetlands as the Corps and has related responsibilities in terms of activities which involve wetland filling. EPA reviews all permit applications and oversees the Corps actions to ensure that the conditions specified in Section 404 (b)(1) of the Clean Water Act are met. EPA also requires an alternatives analysis for any "special aquatic site"; vernal pools are considered special aquatic sites (Dubbs personal communication).

EPA may take a strict stance in deciding whether or not a project is water-dependent and among the alternatives it considers to be "practicable" are projects on other sites that were available to the applicant at the time he purchased the property for which the analysis is conducted, to include sites in different jurisdictions, ie. outside the Roseville City Limits.

With the assistance and upon the recommendations of USFWS and CDFG, EPA is currently in the process of establishing "priority

wetlands" within the region. Priority wetlands are wetlands which are unique or scarce and threatened; priority wetlands have been identified both by type and by specific site; vernal pools have been included as priority wetlands (Dubbs personal communication).

4.3.2.3 U. S. Fish and Wildlife Service. USFWS participates in the 404 permitting process under the federal Fish and Wildlife Coordination Act. In its role as a consultant to the Corps, USFWS relies on its Mitigation Policy (Federal Register 46(15):7644-7663, January 23, 1981) for guidance in establishing mitigation and compensation goals where waters of the United States would be affected. Under the policy, resources are assigned to categories based on their recognized value; mitigation and compensation are established so as to be commensurate with the value.

Elsewhere, USFWS has determined that vernal pools are Category Two resources, indicating that it considers the resource to be scarce in the region. The mitigation and compensation goal for this resource category is no net loss of in-kind habitat value, meaning, in the case of vernal pools, no reduction in pool acreage or quality (Goude personal communication).

USFWS also assigns importance to the relationship between adjacent annual grassland and vernal pool function and value and has placed the adjacent annual grassland into Resource Category 4, for which the mitigation and compensation goal is minimum loss. Elsewhere, USFWS has argued for retention of upland annual grassland in the tributary watersheds to vernal pools, extending its function beyond the wetland area over which the Corps has jurisdiction and which served as the basis for USFWS involvement.

4.3.2.4 California Department of Fish and Game. CDFG comments on projects during the CEQA process and responds to the notification by the Corps that it intends to issue a section 404 permit. CDFG has no regulatory authority that precludes development in wetland habitat but in January, 1987, the California Fish and Game Commission adopted a policy supporting CDFG opposition to projects which would result in a net loss of wetland acreage or value (Radovich personal communication).

As the trustee agency responsible under CEQA for California's endangered and threatened species, CDFG also carries out state authorities legislated through the California Endangered Species Act (California Fish and Game Code, Chapter 1.5, Sections 2050-2093) and the California Native Plant Protection Act (California Fish and Game Code, Chapter 10, Sections 1900-1911). CDFG authority is ample for projects in which a state agency is either the lead agency or must issue a permit, but for private projects

of the type proposed in the Plan Area CDFG has little authority to require protection via either act. However, where Bogg's Lake hedge hyssop is present, CDFG may take a stronger stance through inter-agency consultation with the Corps because the species is state-listed as endangered.

5.0 MITIGATION STRATEGY

5.1 PURPOSE AND PRINCIPLES OF MITIGATION

5.1.1 Purpose of Mitigation

As the Lead Agency, the City of Roseville has the authority to require modifications to the Specific Plan which would lessen or avoid significant impacts (State of California Office of Planning and Research 1984). This section presents measures which could be taken to reduce the adverse impacts on vernal pools that would result from development in the Plan Area.

Inherent in any plan to reduce impacts is the establishment of preserve areas and modifications to the proposed Plan which, in spite of future development, would continue to ensure the long-term maintenance of vernal pools in those preserves in conditions that essentially resemble those present now. Some vernal pools will be lost in the Plan Area as a result of development and, still others will be lost elsewhere in the City of Roseville, a cumulatively significant impact of future growth and expansion. Although the applicant is not responsible for mitigating impacts on other properties and cannot be expected to mitigate cumulative impacts, the mitigation for the Northwest Specific Plan Area has been recommended with due consideration of the state of the remaining vernal pool resources throughout the City and development in the adjacent North Central Specific Plan Area.

5.1.2 Principles of Mitigation

Mitigation of impacts on natural resources requires recognition of the relationship between the resources in question and their surroundings. Vernal pools are bound inextricably with and necessarily reliant upon their surroundings, a fact most obviously illustrated by reference to hydrologic processes. Although direct precipitation partially fills topographic depressions, water flowing overland into them from surrounding higher ground also makes its partial contribution to filling. The proportionate contributions of direct rainfall and overland flow from tributary watersheds are not known for vernal pools. Maintenance of critical hydrologic relationships in pools preserved through mitigation dictates that some tributary watershed be preserved. How much area should be preserved depends upon the topographic position of the pools to be preserved. Other things being equal, the relative contribution of direct rainfall to ridgetop pools is likely to be greater than it is for valley-bottom pools; conse-

quently, preservation of valley-bottom pools may require protection of a potentially greater tributary area.

As discussed above in the section on impacts, a vernal pool possesses more than a hydrologic relationship with its surrounding terrain. A pool isolated from others cannot be assured of long-term survival. Collectively, a network of pools possesses a greater capacity to withstand and overcome the affects of unusual natural events (ie. prolonged drought) and surrounding land uses than a single pool.

5.1.3 Previous Preservation and Mitigation Recommendations

WESCO and Holland (1982) recommended general and specific measures for the preservation of vernal pools and for mitigating the impacts of development on them in the City of Roseville. General measures included incorporation of pool areas into easements, parks, preserves, and open space and a program to monitor overall pool quality (to include response to surrounding development). Although a golf course and several parks (locations not yet established) would be constructed in the Plan Area, no open space is proposed and the pools in the transmission line corridor where parks are proposed are of only low to moderate quality and value. Furthermore, parks cannot be considered a protective preserve for vernal pools unless they are left in their natural condition.

Specific measures included a recommendation for surveys of pool areas to which access was not obtained. WESCO and Holland assigned a high priority to SWA 24 as an area that should be surveyed, no doubt because of potential values visible in the inspection of aerial photographs and the flyover. In the course of this study, it was found to be the most valuable pool area in the Plan Area. No specific measures other than this survey were offered for pool areas in the Plan Area.

5.2 RECOMMENDED MITIGATION

The recommendations made below are based on information collected in the field survey and the comparison with pool areas elsewhere in Roseville, including the North Central Specific Plan Area. The recommendations are made without any information about the pools in the extreme northwest corner (in and around SWA 20) of the Plan Area that were not surveyed. The recommendations do not cover dedication and/or transfer of ownership if any, management, or other aspects of mitigation that are properly the responsibility of the land owners and the City to decide. They are, however, intended to provide mitigation that would be acceptable to state

and federal agencies but do not account for mitigation requirements that may arise as a result of agency review of the project either as part of the CEQA process or other permit-related processes.

5.2.1 Recommended Preserve Areas

Two preserves are proposed in the center of the Plan Area between the electrical easement and Carlsberg Blvd (Figure 5). Preserve One encompasses a small basin near the divide between the Kaseberg and Pleasant Grove Creek watersheds. Preserve Two includes pools on a south-facing slope above and immediately adjacent to the 32-acre community park proposed in the electrical easement. Other pools should be preserved in at least one site in the golf course.

Collectively, the pools in the two preserves and the golf course are the most valuable pools in the Plan Area. They belong to SWAs 24 and 21, ranked as the two most valuable pools areas in the Plan Area (Table 2). Both also rank in the upper third of all pool areas in the City and one (SWA 35 in the Northeast Specific Plan Area) ranked above them by WESCO and Holland (1982) has already been developed. Preserve One contains some of the floristically richest pools in SWA 24 and the pool in which Bogg's Lake hedge hyssop and dwarf downingia occur. Preserve Two contains the next richest cluster of pools in SWA 24. Discounting the effect of shallow, species-poor pools that have been wheat farmed on the overall ranking of SWA 24, Preserves One and Two probably contain among the richest pools remaining in Roseville.

Pools that should be preserved in the golf course include the pools in SWA 21 in the northwest corner, a cluster of pools in approximately the center, and those along the southwest margin along the connecting road between Carlsberg Blvd. and Cook-Riolo Road. SWA 21 contains the largest, richest pool (pool 71) in the Plan Area, one which should be preserved (along with its smaller satellite pools) because of its uniqueness.

The proposed boundaries of the two preserve areas were established to provide a necessary hydrologic buffer and were located taking into consideration both existing topography and proposed land uses and, in the case of Preserve One, the position of the vernal pool containing Bogg's Lake hedge hyssop and dwarf downingia. Because it sits astride the ridgeline, Preserve One would be relatively well buffered against hydrologic impacts. The pools it encompasses are near the headwaters or the tops of swales carrying runoff downslope. The preserve has also been designed to contain a sufficient buffer. The pool containing Bogg's lake hedge hyssop and dwarf downingia is situated in the center of the preserve.

Northwest Roseville Specific Plan

Roseville
California

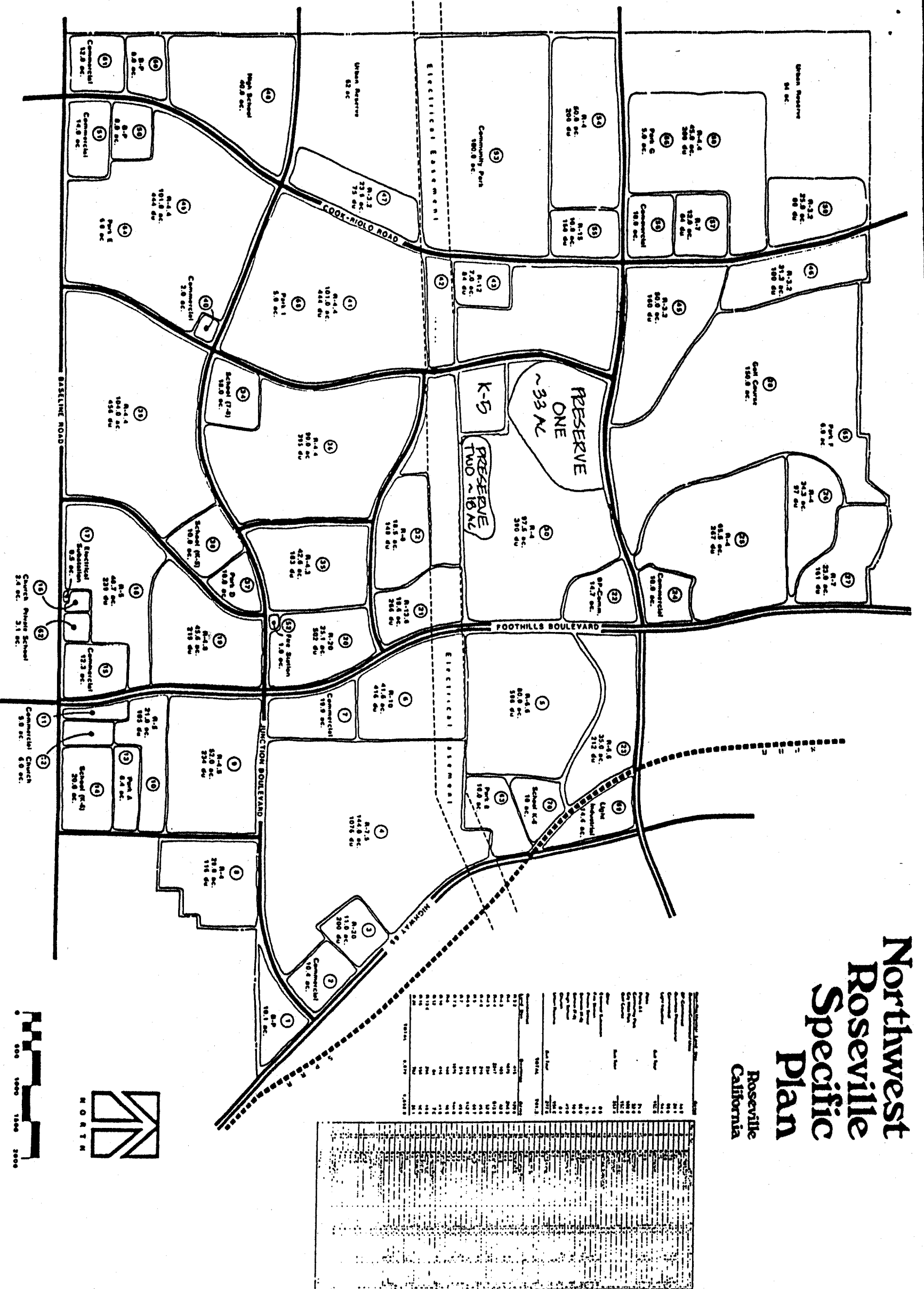


FIGURE 5. RECOMMENDED MITIGATION

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PLANNERS AND ENGINEERS



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Preserve Two occupies a hillside location but the recommended location for the northern preserve boundary is close enough to the ridgeline that encroachment into the tributary watershed would be limited.

5.2.2 Affects on Specific Plan

Figure 5 shows preserve locations and the effects on the proposed Specific Plan. The preserve boundary locations are approximate. Figure 5 also shows Plan modifications that could be considered to accommodate the preserves.

Preserve One would be approximately 33 acres and Preserve Two would be approximately 18 acres. Preserve One would preclude residential development of one 10-acre parcel and reduce the developable area in an adjacent 72-acre residential parcel. It would also require relocation of the K-5 school and realignment of the north-south road connecting Carlsberg Blvd. and Base Line Road. A couple of alternative alignments for this connecting road are shown in Figure 5. Neither preserves the four-way intersection in the original Plan but, given the apparent change in traffic level north and south of Carlsberg Blvd., the alternative combination of three tee intersections may be sufficient to meet circulation needs. The K-5 school could be resituated in a slightly different location, as shown in Figure 5, and benefit from the presence of parks and preserve open space on three sides.

Preserve Two would require the withdrawal of 17 acres from the southcentral part of the 97.5-acre residential area that extends from the electrical easement to Carlsberg Blvd. No other proposed land uses would be affected.

The pools in the proposed golf course are situated in small openings which are suitable for tees, greens, and/or fairways because no tree clearing would be necessary. The large, unique pool in SWA 31 (pool 71) should be given priority for preservation among the pools present in the golf course. It is situated on a low terrace between Pleasant Grove Creek and an adjacent higher terrace to the east. The area between the creek and the top of the east terrace margin should be excluded from the golf course unless course features in the vicinity are located and designed to avoid impacts on pool 71, including those associated with irrigation.

The cluster of pools in the center of the course should be preserved if possible but their values are limited by comparison and preservation is not a primary mitigation objective.

5.3 RELATED MEASURES

The following measures should be taken in conjunction with the above recommendations to ensure vernal pool protection in the Preserve Areas:

1. modifications to the above Preserve recommendations should be made jointly by the applicant's planner and engineer, City planning staff, agency personnel, and the writer of this report; exact Preserve Area boundaries should be established in the field.

2. the vernal pools in the western portion of the Plan Area should be surveyed prior to development and plans for development should be modified to account for the results.

3. surface water runoff from adjacent paved areas should not be directed overland into either preserve. Runoff from Carlsberg Blvd. should not be directed into the swales in Preserve One.

4. preserve areas should be fenced by low barriers that prevent access by dirtbikes and other off-road vehicles. The barriers should be low enough to prevent obstruction of views. The Preserve Areas should be signed to state the purpose for their establishment and a network of trails should be designed through the Preserves to permit pedestrian access. The trail system should be accompanied by signs which explain vernal pool systems and provide trail users an opportunity to learn about them.

5. dwarf downingia seed should be collected from pools to be destroyed and seeded into pools in both preserves.

6. the final layout of golf course features in the vicinity of SWA 31 should be done with the assistance of the writer of this report. Tees, greens, and rough can be accommodated as long as they are positioned such that associated irrigation does not alter the surface or subsurface hydrologic processes that control the inundation of pool 71.

7. monitoring should be conducted on a periodic basis to determine how the pools are responding to the surrounding development. Monitoring should include an analysis of pool filling and changes in the depth and duration of inundation as a result of truncation of the tributary watershed. The results of this analysis would supply a partial basis for determining how far development on other properties can encroach upon the watersheds tributary to the pool areas preserved elsewhere in Roseville.

6.0 REFERENCES AND PERSONS CONTACTED

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Brode, John, State Herpetologist, Environmental Services, California Department of Fish and Game, Rancho Cordova.

Coe, Tom, Regulatory Section, Army Corps of Engineers, Sacramento District, Sacramento.

Dubbs, Nancy, 404 Team, Environmental Protection Agency, San Francisco.

Goude, Cay C., Fish and Wildlife Biologist, Ecological Services, U. S. Fish and Wildlife Service, Sacramento.

Holland, Robert F., Plant Ecologist, California Natural Diversity Data Base, Department of Fish and Game, Sacramento.

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Miller, Sam, River West Developments, Sacramento.

Papenfuss, Theodore, Herpetologist, Museum of Vertebrate Zoology, University of California, Berkeley.

Radovich, Robert, Environmental Services, California Department of
Fish and Game, Sacramento.

Reggan, Royce, Biologist, RBR Associates, San Diego.

Scheidlinger, Carla, Consulting Biologist, San Diego.

Smith, Dennis, Range Cowboy, Roseville.

Villasenor, Ricardo, Biologist, EIP, Inc., San Francisco.

**CALIFORNIA DEPARTMENT OF FISH AND GAME
WILDLIFE HABITAT LISTING**

**Valley-Foothill Hardwood Habitat
Annual Grassland Habitat**



CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
 PROGRAMMED BY IRENE TIMOSKI FOR PACIFIC GAS AND ELECTRIC COMPANY

Database Version: 04/10/86

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SPECIES DETAIL LIST

PAGE: 1

SELECTION CRITERIA:

Location: SACRAMENTO COUNTY

Habitats:

1 VALLEY-FOOTHILL HARDWOOD POLE TREE OPEN 25-39% (3P)
 2 ANNUAL GRASS TALL HERB DENSE 60-100% (2D)

ID	SPECIES NAME	STATUS 1234567 FFCCCFB ETERPSS	SEASON IN LOCATION	HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....			
						R	C	F	I
A001	TIGER SALAMANDER		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	yearlong	L	L	L	
A012	ENSATINA		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L
A014	CALIFORNIA SLENDER SALAMANDER		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M
A022	ARBOREAL SALAMANDER		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	M	M
A028	WESTERN SPADEFOOT		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	L	
A032	WESTERN TOAD		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M
A039	PACIFIC TREEFROG		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M
A043	FOOTHILL YELLOW-LEGGED FROG		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	
A046	BULLFROG		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	
B051	GREAT BLUE HERON		yearlong	ANNUAL GRASS 2D	Yearlong			L	L
B052	GREAT EGRET		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L		L
B057	CATTLE EGRET		Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L		L
B058	GREEN-BACKED HERON		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong			L	L
B059	BLACK-CROWNED NIGHT HERON		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L		L
B067	TUNDRA SWAN		Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L		L
					Fall-Winter	L	L	L	

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SPECIES DETAIL LIST

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ID	SPECIES NAME	STATUS		SEASON IN LOCATION	HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....			
		1234567	FFCCCFB ETERPSS				R	C	F	I
8071	SNOW GOOSE			Fall-Winter	ANNUAL GRASS 2D	Fall-Spring	L	L	L	
8075	CANADA GOOSE			Spring-Summer	ANNUAL GRASS 2D	Yearlong	L	L	L	L
8077	GREEN-WINGED TEAL			Fall-Winter	ANNUAL GRASS 2D	Yearlong	M		L	M
8079	MALLARD			Yearlong	ANNUAL GRASS 2D	Yearlong	M	L	M	M
8080	NORTHERN PINTAIL			Fall-Winter	ANNUAL GRASS 2D	Yearlong	M		L	M
8082	BLUE-WINGED TEAL			Fall-Winter	ANNUAL GRASS 2D	Spring-Summer	L			L
8083	CINNAMON TEAL			Yearlong	ANNUAL GRASS 2D	Spring-Summer	M			M
8085	GADWALL			Yearlong	ANNUAL GRASS 2D	Yearlong	H		L	H
8086	EURASIAN WIGEON			Winter	ANNUAL GRASS 2D	Fall-Spring		M	M	M
8087	AMERICAN WIGEON			Fall-Winter	ANNUAL GRASS 2D	Yearlong	L		L	L
8094	LESSER SCAUP			Fall-Winter	ANNUAL GRASS 2D	Spring-Summer	M			M
8108	TURKEY VULTURE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	M	M	H
8111	BLACK-SHOULDERED KITE		5	Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M		H	H
8113	BALD EAGLE		1 3 5	Winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Fall-Spring Yearlong	L	L	L	L
8114	NORTHERN HARRIER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong			L	L
8115	SHARP-SHINNED HAWK			Winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	H
8116	COOPER'S HAWK			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong		M	M	M
8119	RED-SHOULDERED HAWK			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M
8121	SWAINSON'S HAWK			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Spring-Fall Spring-Fall	M	M	L	M
8123	RED-TAILED HAWK			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H

CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
 PROGRAMMED BY IRENE TIMOSI FOR PACIFIC GAS AND ELECTRIC COMPANY

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ID	SPECIES NAME	STATUS		HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....			
		1234567 FFCCCFB ETERPSS	SEASON IN LOCATION			R	C	F	I
8123	RED-TAILED HAWK		Yearlong	ANNUAL GRASS 2D	Yearlong	L	L	H	H
8124	FERRUGINOUS HAWK		winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Fall-Spring Fall-Spring		M		M
8125	ROUGH-LEGGED HAWK		winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Spring-Fall Fall-Spring		M		M
8126	GOLDEN EAGLE	56	Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong		M	M	L
8127	AMERICAN KESTREL		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong		L		H
8128	MERLIN		winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Fall-Spring Fall-Spring		M	M	M
8129	PEREGRINE FALCON	1 3 5	winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Spring and Fall Yearlong	0	M	M	M
8133	RING-NECKED PHEASANT		Yearlong	ANNUAL GRASS 2D	Yearlong		H	H	H
8134	BLUE GROUSE	6	Yearlong	ANNUAL GRASS 2D	Yearlong		M		M
8138	TURKEY		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong		H	H	H
8140	CALIFORNIA QUAIL		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong		H	L	M
8150	SANDHILL CRANE	5	Fall-Winter	ANNUAL GRASS 2D	Yearlong		M	M	M
8173	LONG-BILLED CURLEW		Fall-Spring	ANNUAL GRASS 2D	Yearlong		L	L	L
8200	WILSON'S PHALAROPE		Spring-Fall	ANNUAL GRASS 2D	Spring-Summer		M		M
8255	MOURNING DOVE		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong		M	M	H
8260	GREATER ROADRUNNER		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong		L	L	L
8262	COMMON BARN OWL		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	yearlong yearlong		H	H	H
8264	WESTERN SCREECH OWL		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	yearlong yearlong		H	H	H
8265	GREAT HORNED OWL		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	yearlong		M	M	H

CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
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ID	SPECIES NAME	STATUS		SEASON IN LOCATION	HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....			
		1234567	FFCCCFB ETERPSS				R	C	F	I
B265	GREAT HORNED OWL			Yearlong	ANNUAL GRASS 2D	Yearlong			H	H
B267	NORTHERN PYGMY OWL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H
B269	BURROWING OWL			Yearlong	ANNUAL GRASS 2D	Yearlong	M	M	M	M
B272	LONG-EARED OWL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	H	M	M	H
B273	SHORT-EARED OWL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Fall-Spring Yearlong		L	L	L
B275	LESSER NIGHTHAWK			Spring-Summer	ANNUAL GRASS 2D	Spring-Fall			M	M
B277	COMMON HOORNILL			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Fall	M	M	M	M
B282	WHITE-THROATED SHIFT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Spring-Summer			M	M
B286	BLACK-CHINNED HUMMINGBIRD			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	M	M	M	M
B287	ANNA'S HUMMINGBIRD			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H
B294	LEWIS' WOODPECKER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	M	M	M
B296	ACORN WOODPECKER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H
B298	YELLOW-BELLIED SAPSUCKER			Winter	VALLEY-FOOTHILL HARDWOOD 3P	Winter-Spring	M	M	M	
B299	RED-BREASTED SAPSUCKER			Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	Winter-Spring		L	L	L
B302	NUTTALL'S WOODPECKER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H
B303	DOWNY WOODPECKER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M
B307	NORTHERN FLICKER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M
B311	WESTERN WOOD-PEWEE			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	L	L	L	L
B321	BLACK PHOEBE			Yearlong	ANNUAL GRASS 2D	Yearlong			M	M
B326	ASH-THROATED FLYCATCHER			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	H	H	H	H
B333	WESTERN KINGBIRD			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	M	M	L	M

CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
 PROGRAMMED BY IRENE TIMOSSI FOR PACIFIC GAS AND ELECTRIC COMPANY

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		1234567	FFCCCFB ETERPSS				R	C	F	I			
8333	WESTERN KINGBIRD			Spring-Summer									
					ANNUAL GRASS 2D	Spring-Summer				H	H		
8337	HORNED LARK			Yearlong									
					ANNUAL GRASS 2D	Yearlong				L		L	
8338	PURPLE MARTIN			Spring-Summer									
					ANNUAL GRASS 2D	Spring-Summer				L		L	
8339	TREE SWALLOW			Yearlong									
					ANNUAL GRASS 2D	Yearlong				M	M		
8340	VIOLET-GREEN SWALLOW			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Spring-Fall	L	L	M	M			
					ANNUAL GRASS 2D	Yearlong				L	L		
8341	NORTHERN ROUGH-WINGED SWALLOW			Spring-Summer									
					ANNUAL GRASS 2D	Spring-Fall				M	M		
8342	BANK SWALLOW			Spring-Summer									
					ANNUAL GRASS 2D	Spring-Fall				L	L		
8343	CLIFF SWALLOW			Spring-Summer									
					ANNUAL GRASS 2D	Spring-Summer				H	H		
8344	BARN SWALLOW			Spring-Summer									
					VALLEY-FOOTHILL HARDWOOD 3P	Spring-Fall	L	L	L	L			
					ANNUAL GRASS 2D	Spring-Fall	M	M	M	M			
8348	SCRUB JAY			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
8352	YELLOW-BILLED MAGPIE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong				H	H	H	
8353	AMERICAN CROW			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong					L	L	
8358	PLAIN TITMOUSE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	M	M	M			
8360	BUSHTIT			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	M	H	H			
8361	RED-BREADED NUTHATCH			Fall-Winter									
					VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring	L	L	L				
8362	WHITE-BREADED NUTHATCH			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong				H	H	H	
8364	BROWN CREEPER			Fall-Winter									
					VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring	L	L	L				
8368	BENICK'S WREN			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
8369	HOUSE WREN			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Spring-Fall	M	M	M	M			
8376	RUBY-CROWNED KINGLET			Fall-Winter									
					VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring	H	H	H				
8377	BLUE-GRAY SNATCHER			Fall-Winter									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	M	H	H			
8380	WESTERN BLUEBIRD			Fall-Winter									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	M	M				
					ANNUAL GRASS 2D	Yearlong				M	M		

SPECIES DETAIL LIST

ID	SPECIES NAME	STATUS		HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....				
		FFCCCFB ETERPSS	SEASON IN LOCATION			R	C	F	I	
8386	HERMIT THRUSH		Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring		L	M	M	
8389	AMERICAN ROBIN		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	yearlong	M	H	M	H	
8391	WRENTIT		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	yearlong	M	M	M	M	
8393	NORTHERN MOCKINGBIRD		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M	
8407	CEGAR WAXWING		Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring		M	M	M	
8408	PHAINOPEPLA		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	yearlong	M	M	M	M	
8410	LUGGERHEAD SHRIKE		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	yearlong	L	L	L	L	
8411	EUROPEAN STARLING		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	yearlong	M	M	M	M	
8417	HUTTON'S VIREO		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	yearlong	L	M	M	M	
8418	WARBLING VIREO		Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	M	M	M	M	
8425	ORANGE-CROWNED WARBLER		Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	yearlong	H	H	H	H	
8430	YELLOW WARBLER		Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Fall	L	M	M	M	
8435	YELLOW-RUMPED WARBLER		Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Fall-Spring Fall-Spring	H	H	H	H	
8475	BLACK-HEADED GROSBEAK		Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	H	H	H	H	
8476	BLUE GROSBEAK		Spring-Summer	ANNUAL GRASS 2D	Spring-Summer	L	L	L	L	
8477	LAZULI BUNTING		Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	L	L	L	L	
8483	RUFOUS-SIDED TOWHEE		yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	M	M	
8484	BROWN TOWHEE		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	yearlong	L	L	L	L	
8487	RUFOUS-CROWNED SPARROW		yearlong	ANNUAL GRASS 2D	yearlong	M	M	M	M	
8495	LARK SPARROW		yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	L	L	
8499	SAVANNAH SPARROW		Fall-Winter	ANNUAL GRASS 2D	yearlong	L	M	M	M	
8501	GRASSHOPPER SPARROW		Spring-Summer	ANNUAL GRASS 2D	Spring-Summer	M	M	M	M	

CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
 PROGRAMMED BY IRENE TIMOSI FOR PACIFIC GAS AND ELECTRIC COMPANY

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		1234567	FFCCCFB				R	C	F	I	
8504	FOX SPARROW			Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring		M	M	M	
8505	SONG SPARROW			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L	
8509	GOLDEN-CROWNED SPARROW			Fall-winter	VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring		L	L	L	
8510	WHITE-CROWNED SPARROW			Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring		L	L	L	
8512	DARK-EYED JUNCO			Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	M	M	M	
8519	RED-WINGED BLACKBIRD			Yearlong	ANNUAL GRASS 2D	Yearlong	L	L	H	H	
8520	TRICOLORED BLACKBIRD			Yearlong	ANNUAL GRASS 2D	Yearlong			H	H	
8521	WESTERN MEADOWLARK			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L	
8522	YELLOW-HEADED BLACKBIRD			Yearlong	ANNUAL GRASS 2D	Yearlong	M	H	H	H	
8524	BREWER'S BLACKBIRD			Yearlong	ANNUAL GRASS 2D	Yearlong		L	L	L	
8528	BROWN-HEADED COBBLER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L	
8532	NORTHERN ORIOLE			Yearlong	ANNUAL GRASS 2D	Yearlong	M	L	M	M	
8532	NORTHERN ORIOLE			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	L	M	
8532	NORTHERN ORIOLE			Spring-Summer	ANNUAL GRASS 2D	Yearlong	L			L	
8538	HOUSE FINCH			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Spring-Summer	L	L	L	L	
8542	PINE SISKIN			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	M	M	
8542	PINE SISKIN			Fall-Winter	VALLEY-FOOTHILL HARDWOOD 3P	Fall-Spring		L	L	L	
8543	LESSER GOLDFINCH			Yearlong	ANNUAL GRASS 2D	Fall-Spring			M	M	
8543	LESSER GOLDFINCH			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	M	M	
8544	LAWRENCE'S GOLDFINCH			Yearlong	ANNUAL GRASS 2D	Yearlong			M	M	
8544	LAWRENCE'S GOLDFINCH			Spring-Summer	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	M	M	
8545	AMERICAN GOLDFINCH			Yearlong	ANNUAL GRASS 2D	Yearlong			M	M	
8545	AMERICAN GOLDFINCH			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	M	M	M	
8547	HOUSE SPARROW			Yearlong	ANNUAL GRASS 2D	Yearlong			M	M	
8547	HOUSE SPARROW			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong				L	L
8001	VIRGINIA OPOSSUM			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	M	M	
8001	VIRGINIA OPOSSUM			Yearlong	ANNUAL GRASS 2D	Yearlong	L	L	L	L	
8006	ORNATE SHREW			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L	

CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
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		1234567	FFCCCFB ETERPSS				R	C	F	I			
M006	ORNATE SHREW			Yearlong									
M018	BROAD-FOOTED MOLE			Yearlong	ANNUAL GRASS 2D	Yearlong	M	M	M	M			
M023	YUMA MYOTIS			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	L	L	L			
M028	CALIFORNIA MYOTIS			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong					H	H	
M031	WESTERN PIPISTRELLE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M		L	L
M032	BIG BROWN BAT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong					M	M	
M033	RED BAT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Spring-Fall	M	M	M	M		H	H
M034	HOARY BAT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M		M	M
M037	TOWNSEND'S BIG-EARED BAT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M		L	L
M038	PALLID BAT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Spring-Fall						L	L
M039	BRAZILIAN FREE-TAILED BAT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong					H	H	
M045	BRUSH RABBIT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong					M	M	
M047	DESERT COTTONTAIL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	L	L	L		M	M
M051	BLACK-TAILED HARE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M		M	M
M072	CALIFORNIA GROUND SQUIRREL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M		M	H
M077	WESTERN GRAY SQUIRREL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M		H	H
M078	FOX SQUIRREL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M		L	L

CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
 PROGRAMMED BY IRENE TIMOSI FOR PACIFIC GAS AND ELECTRIC COMPANY

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		1234567	FFCCCFB ETERPSS				R	C	F	I
M081	BOTTA'S POCKET GOPHER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	L	L	L
M086	LITTLE POCKET MOUSE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L
M087	SAN JOAQUIN POCKET MOUSE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	L	L	L
M112	BEAVER			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong			L	L
M113	WESTERN HARVEST MOUSE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	L	L	L
M117	DEER MOUSE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M
M119	BRUSH MOUSE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	M	M	M
M120	PINON MOUSE			Yearlong	ANNUAL GRASS 2D	Yearlong	L	L	H	H
M127	DUSKY-FOOTED WOODRAT			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L
M134	CALIFORNIA VOLE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	L	L	L
M142	HOUSE MOUSE			Yearlong	ANNUAL GRASS 2D	Yearlong	H	H	H	H
M145	PORCUPINE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L
M146	COYOTE			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	H	H	M	H
M147	RED FOX			Yearlong	ANNUAL GRASS 2D	Yearlong			L	L
M149	GRAY FOX			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	H	H	M	M
M152	RINGTAIL	5		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	M	H	H	H
M153	RACCOON			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong Yearlong	L	L	M	M
M157	LONG-TAILED WEASEL			Yearlong	VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H

SPECIES DETAIL LIST

ID	SPECIES NAME	STATUS	SEASON IN LOCATION	HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....			
		1234567 FFCCCFB ETERPSS				R	C	F	I
M157	LONG-TAILED WEASEL		Yearlong	ANNUAL GRASS 2D	Yearlong	M	M	H	H
M160	BADGER	456	Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	L	L
M161	WESTERN SPOTTED SKUNK		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	H
M162	STRIPED SKUNK		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	M	M
M165	MOUNTAIN LION		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	H
M166	BOBCAT		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	L	L
M191	MULE DEER		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	H
R004	WESTERN POND TURTLE		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	M	M
R022	WESTERN FENCE LIZARD		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Spring-Summer Spring-Summer	H			H
R029	COAST HORNED LIZARD		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	H
R036	WESTERN SKINK		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	L	L
R037	GILBERT'S SKINK		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M
R039	WESTERN WHIPTAIL		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	H
R040	SOUTHERN ALLIGATOR LIZARD		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	M	M	M	M
R048	RINGSNECK SNAKE		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	L	L
R049	SHARP-TAILED SNAKE		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	H	H	H	H
R051	RACER		Yearlong	VALLEY-FOOTHILL HARDWOOD 3P ANNUAL GRASS 2D	Yearlong	L	L	L	L

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SPECIES DETAIL LIST

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ID	SPECIES NAME	STATUS		HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....							
		1234567	FFCCCFB ETERPSS			SEASON IN LOCATION	R	C	F	I			
R051	RACER			Yearlong									
					ANNUAL GRASS 2D	Yearlong	H	H	H	H			
R052	COACHWHIP			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L			
R053	STRIPED RACER			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L			
R057	GOPHER SNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
					ANNUAL GRASS 2D	Yearlong	H	H	H	H			
R058	COMMON KINGSSNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
					ANNUAL GRASS 2D	Yearlong	H	H	H	H			
R060	LONG-NOSED SNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	L	L	L	L			
					ANNUAL GRASS 2D	Yearlong	M	M	M	M			
R061	COMMON GARTER SNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
					ANNUAL GRASS 2D	Yearlong	H	H	H	H			
R062	WESTERN TERRESTRIAL GARTER SNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
R063	WESTERN AQUATIC GARTER SNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
R071	NIGHT SNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	M	M	M	M			
					ANNUAL GRASS 2D	Yearlong	M	M	M	M			
R076	WESTERN RATTLESNAKE			Yearlong									
					VALLEY-FOOTHILL HARDWOOD 3P	Yearlong	H	H	H	H			
					ANNUAL GRASS 2D	Yearlong	H	H	H	H			

Status Definitions:

- F: Federally Endangered
- T: Federally Threatened
- CE: California Endangered
- CR: California Rare
- CP: California Protected
- FS: Forest Service Sensitive
- BS: BLM Sensitive

**CALIFORNIA DEPARTMENT OF FISH AND GAME
WILDLIFE HABITAT LISTING**

Vernal Pool Habitat



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SPECIES DETAIL LIST

PAGE: 1

SELECTION CRITERIA:

Location: SACRAMENTO COUNTY

Elements Included:
 VERNAL POOLS

ID	SPECIES NAME	STATUS		HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....				
		1234567 FFCCCFB ETERPSS	SEASON IN LOCATION			R	C	F	I	
A001	TIGER SALAMANDER		Yearlong							
A029	WESTERN SPADEFoot		Yearlong	VERNAL POOLS			S			S
A032	WESTERN TOAD		Yearlong	VERNAL POOLS			S	P		P
A039	PACIFIC TREEFROG		Yearlong	VERNAL POOLS			S	P		P
A040	RED-LEGGED FROG		Yearlong	VERNAL POOLS			S	S		S
A046	BULLFROG		Yearlong	VERNAL POOLS			P	P		P
9051	GREAT BLUE HERON		Yearlong	VERNAL POOLS				P		P
9053	SNOWY EGRET		Fall-Winter	VERNAL POOLS						P
9079	MALLARD		Yearlong	VERNAL POOLS						P
9080	NORTHERN PINTAIL		Fall-Winter	VERNAL POOLS				P		P
9082	BLUE-WINGED TEAL		Fall-Winter	VERNAL POOLS				P		P
9083	CINNAMON TEAL		Yearlong	VERNAL POOLS			P	P		P
9084	NORTHERN SHOVELER		Yearlong	VERNAL POOLS				P		P
9086	EURASIAN WIGEON		Winter	VERNAL POOLS				P		P
9089	CANVASBACK		Fall-Winter	VERNAL POOLS				S		S
9091	RING-NECKED DUCK		Fall-Winter	VERNAL POOLS			P			
9108	TURKEY VULTURE		Yearlong	VERNAL POOLS						P
9114	NORTHERN HARRIER		Yearlong	VERNAL POOLS						P
9127	AMERICAN KESTREL		Yearlong	VERNAL POOLS						P

CALIFORNIA DEPARTMENT OF FISH AND GAME WILDLIFE HABITAT RELATIONSHIP SYSTEM
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SPECIES DETAIL LIST

PAGE: 3

ID	SPECIES NAME	STATUS		SEASON IN LOCATION	HABITATS AND SPECIAL ELEMENTS	SEASON IN HABITAT	IMPORTANCE TO....							
		1234567	FFCCCFB				ETERPSS	R	C	F	I			
M033	RED BAT			Yearlong										S
M034	HOARY BAT			Yearlong	VERNAL POOLS									S
M037	TOWNSEND'S BIG-EARED BAT			Yearlong	VERNAL POOLS									S
M039	PALLID BAT			Yearlong	VERNAL POOLS									S
M039	BRAZILIAN FREE-TAILED BAT			Yearlong	VERNAL POOLS									S
M113	WESTERN HARVEST MOUSE			Yearlong	VERNAL POOLS									P
M146	COYOTE			Yearlong	VERNAL POOLS									S
M149	GRAY FOX			Yearlong	VERNAL POOLS									S
M152	RINGTAIL		5	Yearlong	VERNAL POOLS									P
M153	RACCOON			Yearlong	VERNAL POOLS									P
M157	LONG-TAILED WEASEL			Yearlong	VERNAL POOLS									P
M161	WESTERN SPOTTED SKUNK			Yearlong	VERNAL POOLS									P
M162	STRIPED SKUNK			Yearlong	VERNAL POOLS									P
M165	MOUNTAIN LION			Yearlong	VERNAL POOLS									P
M166	BOBCAT			Yearlong	VERNAL POOLS									P
M181	MULE DEER			Yearlong	VERNAL POOLS									P
					VERNAL POOLS									S

Status Definitions:

- FE: Federally Endangered
- FT: Federally Threatened
- CE: California Endangered
- CR: California Rare
- CP: California Protected
- FS: Forest Service Sensitive
- BS: BLM Sensitive

VERNAL POOL SURVEY SPECIES LISTS



APPENDIX B

PLANT SPECIES OBSERVED IN THE
NORTHWEST ROSEVILLE SPECIFIC PLAN AREA

<u>Plant species</u>	<u>SWA 21</u>	<u>ASWA 21B</u>	<u>SWA 24</u>	<u>SWA 25</u>
<u>Non-sensitive vernal pool species:</u>				
<i>Allocarya stipitata</i>				
var. <i>micrantha</i>	x	x	x	x
<i>Allocarya stipitata</i>				
var. <i>stipitata</i>			x	
<i>Allocarya greenei</i>	x		x	x
<i>Alopecurus howellii</i>	x	x	x	x
<i>Alopecurus saccatus</i>				x
<i>Blenosperma nanum</i>			x	
<i>Boisduvalia cleistogama</i>	x		x	x
<i>Callitriche longipedunculata</i>	x	x		x
<i>C. marginata</i>		x	x	
<i>C. palustris</i>	x		x	
<i>Cardamine oligosperma</i>			x	
<i>Cicendia quadrangularis</i>	x		x	x
<i>Crassula aquatica</i>	x	x	x	x
<i>Deschampsia danthonioides</i>	x		x	
<i>Downingia bicornuta</i>	x	x	x	x
<i>D. cuspidata</i>			x	
<i>D. ornatissima</i>	x		x	x
<i>Elatine brachysperma</i>	x	x	x	
<i>Eleocharis acicularis</i>	x		x	
<i>E. macrostachya</i>	x		x	x
<i>Eryngium vaseyi</i>	x	x	x	x
<i>Evax caulescens</i>	x	x		x
<i>Gratiola ebracteata</i>	x		x	x
<i>Isoetes howellii</i>			x	x
<i>I. nuttallii</i>	x	x		
<i>Juncus bufonius</i>	x	x	x	x
<i>J. capitatus</i>	x	x	x	x
<i>J. uncialis</i>		x	x	
<i>Lasthenia chrysostoma</i>	x	x	x	x
<i>L. fremontii</i>			x	
<i>L. glaberrima</i>				x
<i>Lilaea scilloides</i>	x	x	x	x
<i>Limnanthes alba</i>			x	
<i>Lythrum hyssopifolia</i>	x	x	x	x
<i>Mimulus tricolor</i>	x		x	
<i>Myosurus minimus</i>				
var. <i>filiformis</i>	x		x	
<i>Navarretia leucocephala</i>	x	x	x	x
<i>Phalaris lemmonii</i>			x	
<i>Pilularia americana</i>	x	x	x	x

Plant species	SWA 21	ASWA 21B	SWA 24	SWA 25
<i>Plantago bigelovii</i>	x		x	
<i>Poa annua</i>	x	x	x	x
<i>Pogogyne zizyphoroides</i>	x	x	x	x
<i>Psilocarphus brevissisimus</i>	x	x	x	x
<i>P. oregonus</i>			x	
<i>P. tennelus</i>	x		x	
<i>Ranunculus aquatilis</i>				
var. <i>capillaceus</i>	x			
<i>R. aquatilis</i> var. <i>hispidulis</i>	x		x	
<i>Ranunculus bonariensis</i>				
var. <i>trisepalus</i>	x	x	x	x
<i>Triteleia hyacynthina</i>			x	
<i>Veronica peregrina</i>	x		x	x
<u>Total non-sensitive pool species:</u>	36	22	45	28
<u>Sensitive vernal pool species:</u>				
<i>Dichelostemma lacuna-vernalis</i>			x	
<i>Downingia humilis</i>			x	x
<i>Gratiola heterosepala</i>			x	
<u>Total sensitive pool species:</u>	0	0	3	1
<u>Non-vernal pool species:</u>				
<i>Achyraea mollis</i>		x	x	x
<i>Agoseris heterophylla</i>			x	
<i>Aira caryophyllea</i>		x	x	x
<i>Anagalis arvensis</i>				x
<i>Avena barbata</i>			x	
<i>Briza minor</i>	x	x	x	x
<i>Brodiaea coronaria</i>		x	x	
<i>Brodiaea</i> sp.			x	
<i>Bromus diandrus</i>			x	
<i>Bromus mollis</i>			x	
<i>Calandrinia ciliata</i>				
var. <i>Menziesii</i>				x
<i>Centaureum venustum</i>				
ssp. <i>Abramsii</i>		x		
<i>Cerastium glomeratum</i>	x	x	x	
<i>Eremocarpus setigerus</i>	x	x	x	x
<i>Erodium botrys</i>			x	
<i>E. cicutarium</i>	x	x	x	x
<i>Euphorbia ocellata</i>	x			

Plant species	SWA 21	ASWA 21B	SWA 24	SWA 25
<i>Euphorbia ocellata</i>				
var. <i>rattanii</i>	x			
<i>Geranium dissectum</i>			x	
<i>Glyceria occidentalis</i>	x		x	
<i>Heleochloa schenoides</i>	x			
<i>Hemizonia fitchii</i>	x	x	x	x
<i>Holocarpha virgata</i>	x	x	x	
<i>Hordeum geniculatum</i>	x	x	x	x
<i>Hypochoeris glabra</i>	x	x	x	x
<i>Lactuca</i> sp.			x	
<i>Lepidium nitidum</i>			x	x
<i>Linanthus bicolor</i>	x			
<i>Lolium perenne</i>	x		x	x
<i>Lupinus bicolor</i>		x	x	x
<i>Matricaria matricarioides</i>		x		
<i>Medicago hispida</i>	x	x	x	x
<i>Microseris</i> sp.			x	
<i>Mimulus guttatus</i>			x	
<i>Montia fontana</i>		x	x	
<i>Orthocarpus attenuatus</i>	x		x	
<i>O. campestris</i>	x			
<i>O. erianthus</i>	x	x	x	x
<i>O. pusillus</i>	x			
<i>Polypogon monspeliensis</i>	x			
<i>Ranunculus muricatus</i>	x		x	
<i>Raphanus sativus</i>				x
<i>Rumex crispus</i>			x	
<i>Trifolium depauperatum</i>	x	x	x	x
<i>T. repens</i>	x			
<i>T. variegatum</i>		x	x	
<i>Vulpia dertonensis</i>	x			
<i>V. myuros</i>			x	
<i>Xanthium strumarium</i>	x			
<u>Total non-pool species:</u>	25	19	34	18
<u>Total pool and non-pool species:</u>	61	41	83	47

**NORTHWEST ROSEVILLE SPECIFIC PLAN
COMMON INVERTEBRATE SPECIES LIST**



LIST OF MOST COMMON CRUSTACEANS REPORTED IN VERNAL POOLS

Class Crustacea

Sub-class Branchiopoda

Order Anostraca (fairy shrimp)

Branchinecta lindahli

Order Cladocera (water fleas)

Alona sp. 1

Macrothrix hirsuticornis

M. rosea

Moina wierzejskii

Sub-class Copepoda (copepods)

Cyclops vernalis

Eucyclops speratus

Sub-class Ostracoda (seed shrimp)

Bradleycypris cf. afinis

B. sp. n. McKenzie

Eucypris virens

Heterocypris incongruens

H. aff. alinus

H. aft. symmetricus

Limnocythere reticulata

L. sp. n. McKenzie

Phylum Rotifera (rotifers)

Brachiionus quadridentata

Hexarthra sp.

Lecane formosa

L. luna

L. ohiensis

Lepadella patella

L. sp. A

Monostyla closterocerca

M. lunaris

Polyarthra sp.

LIST OF MOST COMMON INSECTS REPORTED IN VERNAL POOLS

Order Odonata (dragonflies)

Family Aeshnidae

Anax junius (green darner)

Order Coleoptera (beetles)

Family Dytiscidae

Agabus sp. (predaceous water beetle)

Copelatus chevrolati

Deronectes striatellus (Lec.)

Family Haliplidae

Peltodytes sp. (crawling water beetles)

Family Hydrophilidae

Berosus punctatissimus (water scavenger beetle)

Tropisternus lateralis



Order Diptera

Family Anthomyiidae

Family Chironomidae

Family Culicidae

Chaoborus

Culiseta sp. (mosquitoes)

Culex sp. (mosquitoes)

Family Tipulidae

Tipula sp. (crane flies)

Order Ephemeroptera

Family Baetidae

Callibaetis sp. (small mayfly)

Order Hemiptera

Family Belostomatidae

Abedus indentatus (Hald.) (giant water bug)

Family Corixidae

Trichocorixa sp. (water boatman)

Sigara sp.

Family Gerridae

Gerris sp. (water striders)

Family Notonecta

Notonecta sp. (back swimmers)

Source: U.S. Department of the Interior, Fish and Wildlife Service. **The Ecology of Southern California Vernal Pools: A Community Profile**, Biological Report 85(7.11), May, 1987.



**Northwest Roseville Specific Plan
Traffic Analysis**



**TRANSPORTATION IMPACT STUDY FOR THE
NORTH ROSEVILLE EIR UPDATE**

**NORTH CENTRAL & NORTHWEST ROSEVILLE
SPECIFIC PLAN AREAS**

MAY 1988



Fehr & Peers Associates
Transportation Consultants

3685 Mt Diablo Blvd
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TRANSPORTATION IMPACT STUDY FOR THE
NORTH ROSEVILLE EIR UPDATE

North Central and Northwest Roseville
Specific Plan Areas

87-113 and
87-127
May 1988

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I. INTRODUCTION

A. Background

The purpose of this report is to update the traffic and transportation section of the North Roseville EIR.

Over the last two years, from the spring of 1986 to the present, Traffic and Transportation Reports have been published on each of the four Specific Plans in the City of Roseville. As the report for each plan has been completed, it has updated the assumptions of land use and road network forecast for the City. Over the same period adjacent communities, in South Placer, particularly Rocklin, and in Sacramento County and City have been defining ever more clearly their estimates of land use development and roadway needs.

Additionally, the EIR process in Roseville has included an ongoing discussion between the City reviewing and policy boards (P.R.C., Planning Commission, and City Council), the City Staff, the development community (principally the individual land owners) and the EIR consultants. From these discussions a number of critical items have become clear. Each of the critical items is discussed briefly below as reasons for updating the traffic and transportation report.

B. Reasons for Update

Time Frame: Most of the focus of the previous EIRs looked twenty years into the future. To be precise, given that much of the earlier work, though beginning in 1985, was published in 1986, the future horizon for detailed forecasts, for example of intersection Levels of Service, was nineteen years, i.e. the year 2005. During the discussions with the policy making bodies of the City, it became clear that a detailed analysis that assumed

the development of all four specific plans was needed, even though such a development would assume a forecast year considerably beyond 2005.

Level of Detail: To match the previous City wide transportation plans (1982/3), in previous EIRs the analysis beyond the year 2005 discussed impacts on a screenline basis only. In this analysis, intersection analysis has been completed for the scenario that assumes all four specific plans being fully developed, i.e. a land use scenario beyond the year 2005. Additionally, for all scenarios, all major intersections in the City have been analyzed.

Number of Regional Malls: As the EIR process continued, the need to define the impact of zoning and developing land in all three of the possible locations for a Regional Mall (two in the north central plan, and one in the northeast plan) became apparent. In the previous EIRs the development of only one or two sites had been assumed. In this study, development on all three sites have been assumed in the land use scenario that has assumed the full development of the four specific plans.

Land Uses To Be Included: Beginning in 1985, each of the Specific Plan Areas was allocated an estimate of population and employment. Additionally, staff representatives of the adjacent communities were contacted to gain an understanding of their land use and transportation plans over the next twenty years. Over the last three years, the details of the plans inside and outside of Roseville have changed. This study has drawn together the most recent estimates of likely land use development in the South Placer area.

C. Scenarios Analyzed

The study analyzed the transportation impacts associated with expected 2005 development levels outside the four Roseville Specific Plan Areas, and the following development scenarios inside the specific plan areas:

- A. No development in the specific plan areas.
- B. Buildout of the Northwest Specific Plan Area with expected 2005 development in the other specific plan areas.
- C1. Buildout of the North Central Specific Plan Area with one regional shopping center, and expected 2005 development in the other specific plan areas.
- C2. Buildout of the North Central Specific Plan Area with the equivalent of two regional shopping centers, and expected 2005 development in the other specific plan areas.
- D1. Buildout of all four Roseville specific plan areas with one regional shopping center in the North Central Specific Plan.
- D2. Buildout of all four Roseville specific plan areas with the equivalent of two regional shopping centers in the North Central Specific Plan.

II. EXISTING AND FUTURE ROADWAY ACCESS

A. Existing Roadway Facilities

Figure II-1 shows the existing roadway facilities serving the Northwest and North Central Roseville plan areas. Both are located on the fringe of the urbanized area and, until recently, roadway access was limited. However, the recent completion of the Route 65 Bypass has improved access to both areas considerably.

Although the North Central Specific Plan Area is adjacent to both I-80 and central Roseville, it is separated from the freeway and the downtown by the Santa Fe/Southern Pacific Railroad right-of-way. The 65 Bypass now runs directly through the North Central area improving its access to I-80 and other parts of the city, although there are presently no interchanges along this section of the route. Access to the Northwest area was also limited to existing railroad crossings, but is now possible via the 65 Bypass and Foothills Boulevard and Washington Boulevard (old Route 65).

The Route 65 Bypass connects I-80 just north of Taylor Road, and travels west to an interchange with old Route 65 near Blue Oaks Road. Between those points, it is presently a four-lane expressway, but will eventually be upgraded to freeway status with the construction of interchanges at major intersecting arterials to be built on the planned Harding extension and Carlsberg Boulevard.

I-80 is a six-lane interstate freeway east of the North Central area. It widens to eight lanes at the Riverside Avenue interchange about three to four miles south of the study area. As part of the Caltrans improvements to the Atlantic and Taylor interchanges, I-80 is to be widened to eight lanes from Douglas

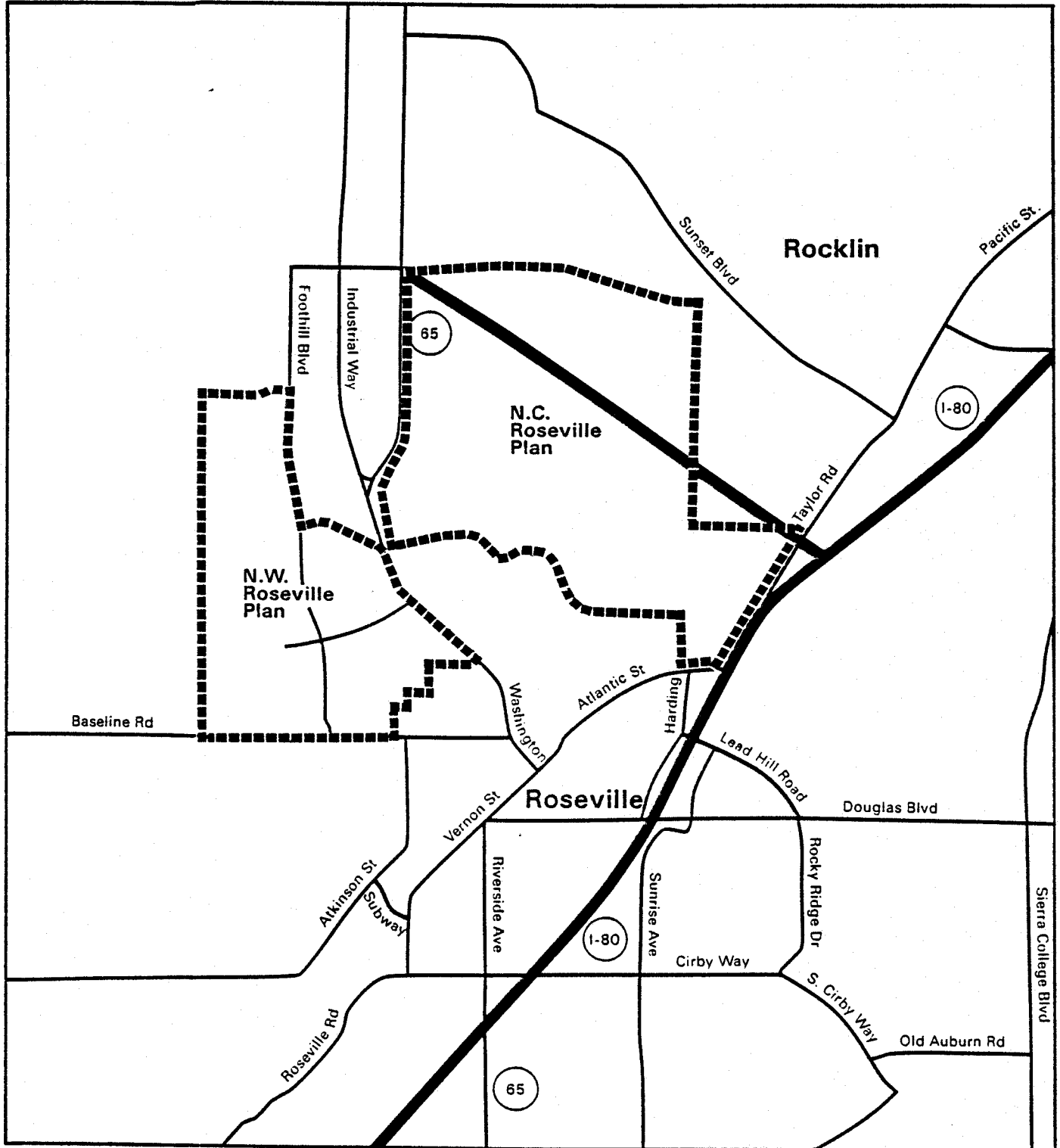


Figure II-1
Project Location

to the 65 Bypass. On some sections the eight lanes will be supplemented with an auxiliary lane, forming five lanes in one direction.

Secondary access to the North Central area and primary access to the Northwest area are provided via old State Route 65 (Washington Boulevard). Between the Northwest Plan area and downtown Roseville, Washington Boulevard is a four-lane arterial with a grade separated crossing of the railroad. From the terminus of Washington just east of downtown Roseville, a number of routes can be used to reach I-80, including Atlantic Street, Folsom Road, Douglas Boulevard, Vernon Street and Riverside Avenue. Another existing access between Northwest Roseville and areas to the south involves use of Atkinson Street and the two-lane Subway Road railroad undercrossing to reach Roseville Road and the I-80/Riverside interchange.

Foothills Boulevard and Blue Oaks Road are new streets in the north Roseville area. These streets are being built and widened as development occurs along their frontage. Each is currently at least four lanes throughout and is intended to ultimately be built to six lane standards throughout.

The completion of the Foothills railroad overcrossing near Cirby Way will provide additional high-quality access to the Northwest area, and will replace the existing Subway Road undercrossing.

Improved access to the north Roseville area will also be provided via a northerly extension of Harding Boulevard across the railroad and by the planned Caltrans upgrade to the Atlantic/I-80 interchange as well as by the construction of Roseville Parkway through the site and across I-80 at a future date.

B. Existing Traffic Volumes and Volume/Capacity

Existing traffic volumes in the study area are shown in Figure II-2. Volumes are not available for the Route 65 Bypass, since it has just recently opened (summer of '87).

I-80 carries about 56,000 to 79,000 average daily traffic (ADT) through the Roseville area.

The most heavily used surface streets in Roseville are Douglas Boulevard and Riverside Avenue near the freeway. Douglas carries 51,000 ADT just east of the freeway, but less traffic (40,000 ADT) on the west side of the interchange, the route used to reach the Northwest and North Central areas. Riverside carries 36,000 ADT just north of I-80. Other high volume streets affecting access to north central and northwest Roseville are: Washington Boulevard with 26,000 ADT at the railroad crossing south of Baseline Road, Douglas Boulevard west of Harding with 28,000 ADT, Atlantic west of Harding with 19,000 ADT, and Cirby west of Riverside with 14,000 to 21,000 ADT.

All of these facilities operate at or near their capacities. Table II-1 presents the capacity ratings for arterial streets and freeways. As four lane facilities, Riverside and Douglas are operating at or above their maximum ratings at their highest volume locations near I-80. West of Harding, Douglas operates at 80% to 90% of its maximum rating and the same is true for Washington near Main Street. Atlantic, as a two-lane street, has reached its maximum capacity.

The capacity ratings given in Table II-1 are conservative, and streets are often found to carry more traffic in practice than their capacity ratings would suggest that they could. In Roseville, this already applies to sections of Douglas, Riverside, Sunrise and Atlantic. However, in order to

Table II-1
DAILY ROADWAY CAPACITIES

<u>Roadway Type</u>	<u>Number of Lanes</u>	<u>Daily Capacity (both directions) Maximum</u>
Minor Arterial	2	16,000
Major Arterial	4	32,000
	6	48,000
Expressway	4	52,000
	6	78,000
Freeway Mainline	6	108,000
	8	144,000

incorporate a safety factor for future planning, and to remain consistent with capacity ratings used in other communities in the Sacramento region, the conservative values are used in this study.

C. Peak Hour Congestion and Levels of Service

Based on their daily traffic volumes, sections of Douglas, Riverside, Sunrise and Atlantic were identified above as operating at or near their capacities. These situations normally translate to high levels of traffic congestion, at least during peak commute periods.

Peak-hour traffic congestion is described in terms of "levels of service" at critical locations. Table II-2 gives the rating system normally used for levels of service at signalized intersections. Levels of service A, B, and C generally represent low to moderate levels of congestion. Level D represents conditions which are moderate and are considered objectionable by some motorists. Level of service E identifies an intersection that is operating near its full capacity and at which long delays are likely to be experienced during peak traffic hours. Most urbanized communities in Northern California consider level E to be unacceptable. Level of Service F, with volume capacity ratios of about 1.0, indicates that the intersection operates at its full capacity for at least 15 minutes each day. Volume/capacity ratios significantly greater than 1.0 reflect cases in which the intersection operates at full capacity with long traffic delays for one hour or more on typical weekdays.

As with the street capacities given in Table II-1, the service level ratings in Table II-2 are generally found to be conservative. For example, an intersection with a volume/capacity ratio calculated using planning techniques to be 0.85 can operate with less than 25 seconds of average delay. This

Table II-2

INTERSECTION LEVEL OF SERVICE DEFINITIONS

<u>Level of Service</u>	<u>Typical V/C Ratio</u>	<u>Stopped Delay (Sec. per Veh.)</u>
A	0.00 - 0.59	Up to 5
B	0.60 - 0.69	5 - 15
C	0.70 - 0.79	15 - 25
D	0.80 - 0.89	25 - 40
E	0.90 - 1.00	40 - 60
F	1.00 +	60 +

corresponds to service level C conditions rather than service level D. However, as with basic street analysis, this study uses conservative techniques (and has used a v/c ratio of 0.8 to define the transition from LOS C to D) to evaluate intersection operating performance. The rating system presented in Table II-2 provides a margin of safety in predicting future intersection levels of service and to remain consistent with previous studies in the Roseville area.

Table II-3 gives the existing p.m. peak hour service level ratings for critical intersections in Roseville. These ratings represent conditions prior to the opening of the 65 Bypass, and therefore, do not reflect recent improvements produced by the Bypass at locations such as Riverside/Cirby and Washington/Main. The table indicates that three intersections in the central and western part of Roseville are now or until recently have been operating at service levels worse than C. These are: Sunrise/Douglas, Riverside/Cirby, Cirby/Sunrise.

D. Future Roadway Improvements

Significant freeway improvements are planned in the area. These include the upgrade of the 65 Bypass to freeway status and the I-80 widening to eight lanes from just north of Douglas to the 65 Bypass interchange, with new interchanges at Atlantic Street and Taylor Road. Another key improvement currently underway is the Foothills Boulevard extension, which will be a four-lane expressway extending south from Baseline Road to a new terminus at Roseville Road. This extension will include a four-lane overcrossing at the railroad right-of-way, replacing the existing Subway Road undercrossing.

Augmenting the Foothill extension are a number of additional roadway network expansions planned as part of major Roseville and Rocklin development proposals. Key roadway facilities that are

Table II-3

EXISTING INTERSECTION LEVELS OF SERVICE

<u>Intersection</u>	<u>P.M. Peak Hour</u>	
	<u>Volume/Capacity</u> <u>Ratio</u>	<u>Level of</u> <u>Service</u>
Douglas Blvd. & Sunrise Blvd.	0.95	E
Riverside & Cirby Way	0.95	E
Douglas Blvd. & Harding Avenue	0.77	C
Cirby Way & Sunrise Blvd.	0.95	E
Douglas Blvd. & Rocky Ridge	0.55	A
Douglas Blvd. & Sierra Gardens	0.56	A
Douglas Blvd. & Santa Clara	0.60	B
Junction Blvd. & Washington Blvd.	0.38	A
Foothill Blvd. & Baseline Road	0.23	A

Note: Traffic counts were taken by Fehr & Peers Associates or provided by staff of Roseville Public Works Department. Circular 212 planning method was used to calculate Level of Service.

to be constructed to support the major growth areas are illustrated in Figure II-3. In addition to the Foothills extension, the key new facilities in north and west Roseville are Roseville Parkway, Carlsberg Boulevard and the Harding Boulevard extension. All three are planned to ultimately become six-lane arterials or expressway facilities. Roseville Parkway is proposed to extend through several of the major plan areas in both east and west Roseville, but it will not have an interchange at I-80. Carlsberg Boulevard will provide a connection between the Northwest and North Central Plan areas and direct access to the 65 Bypass. The Harding extension will provide an additional grade separated crossing of the railroad, and will connect the North Central Plan Area to the improved Atlantic/I-80 interchange. It will also provide direct access to the 65 Bypass via a new interchange and will connect northern Roseville to the developing areas of Rocklin just north of the Bypass.

In addition to Carlsberg Boulevard, two other new facilities are planned within the Northwest Roseville Plan area. These are the westerly extension of Junction Boulevard, and the northerly extension of Cook-Riolo Road, which currently terminates at Baseline Road at the site's southwestern corner. As alternates to the freeway, Watt, Walegra and Cook-Riolo are links between the site and northwestern portions of Sacramento County, along with the Foothills Boulevard extension to Atkinson Street and Roseville Road.

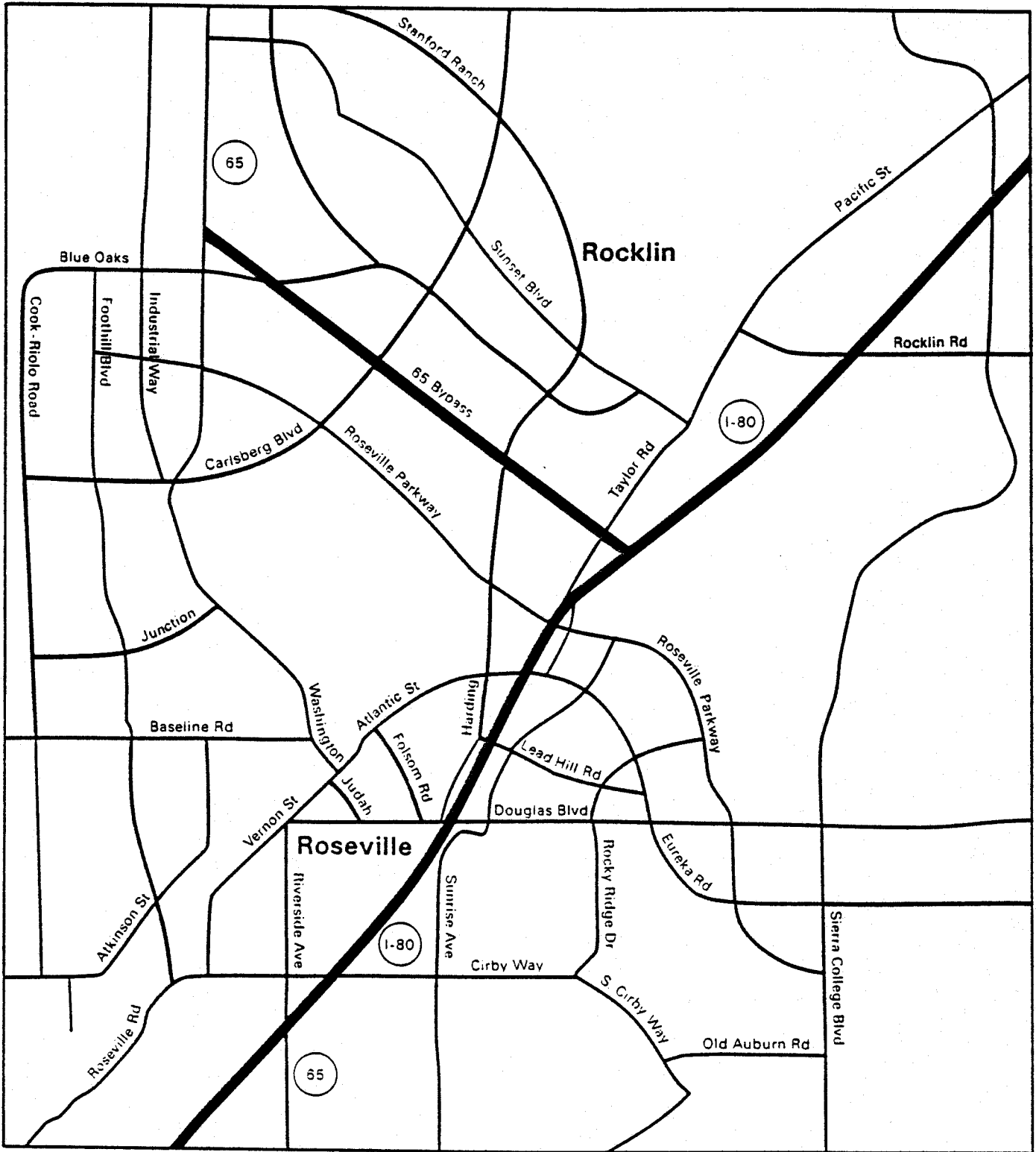


FIGURE II-3
EXPANDED REGIONAL ROADWAY NETWORK

III. EXISTING AND FUTURE LAND USE

Together, the Northwest and North Central Roseville Specific Plan Areas represent about 4400 acres of land, about equal to the City's existing developed area. At full buildout of the proposed specific plans, the two areas could contain up to 13,000 dwelling units and up to 20,000 employees. These buildout development levels are equal to Roseville's existing population and employment. However, based on projected development and absorption rates, these buildout levels would not be reached for more than thirty years, and both areas are projected to be only about two-thirds builtout by the year 2005¹.

This study considers development of the Northwest and North Central plan areas cumulatively with development in other parts of Roseville and South Placer County and the remainder of the Sacramento region. Within Roseville itself, cumulative development includes the Northwest and North Central areas as well as the two other major plans which are currently undergoing or have recently undergone review and approval by the City: the Northeast and Southeast Specific Plan Areas. It also includes growth and infill development in existing areas in Roseville's central and northern industrial areas. Figure III-1 identifies the major development areas in Roseville. The north industrial area is immediately adjacent to the North Central and Northwest Plan areas. The two major development areas to the east of I-80 are the Northeast and Southeast Specific Plan areas. Cumulative development in Roseville from all of these sources is projected to add about 42,000 residents and about 42,000 jobs by year 2005.

¹ McDonald & Associates; May 1986, February 1988.

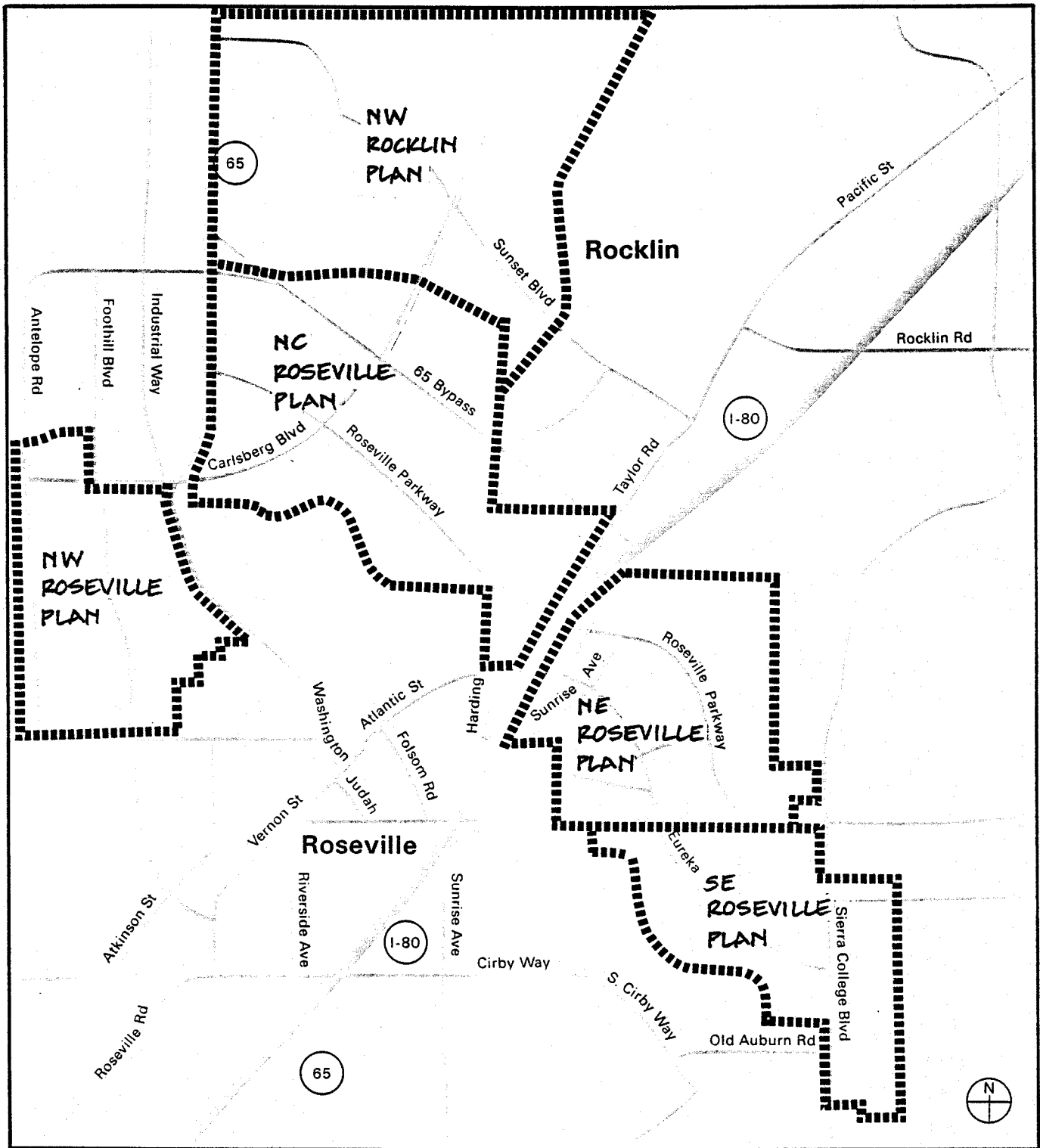


FIGURE III-1
REGIONAL DEVELOPMENT CONTEXT

Outside of Roseville, the major growth areas are projected to be Stanford Ranch and the remainder of the Northwest Rocklin Plan Area. Continued infill development is expected to occur in other parts of Rocklin as well. In addition, considerable population and jobs growth is projected to occur in and around Lincoln. Development east of Roseville is expected to be limited to residential projects and small-to-moderate commercial projects in the Loomis basin. The most significant of these is Treelake Village, with almost 1100 dwelling units.

Within Sacramento, development is projected to occur in accordance with the City's updated General Plan. The growth allowed under this plan is projected to be built out by about the year 2016. Assuming uniform growth rates, about two-thirds of the new development anticipated under the plan would occur by 2005. Growth to the year 2005 in Sacramento County was also assumed to equal about two-thirds of the thirty-year growth projected in the City's General Plan Update.

The growth assumptions described above have significant implications for Roseville and for the rest of the Sacramento region. These implications are discussed in the following sections of this Chapter.

A. Future Jobs and Labor Force

The planning horizon considered in this study extends to the year 2005. By that time, Roseville's population is projected to more than double and employment is projected to more than triple. Significant jobs growth is also predicted for nearby areas of South Placer County, including Stanford Ranch and other areas of Rocklin and Lincoln. As a result, the population of South Placer from Lincoln and Newcastle south is projected to grow from about 80,000 today to over 165,000 in 2005. Assuming that 50% of the population is employed, this translates to a future labor force of about 83,000. South Placer is projected to have about 100,000 jobs by 2005, including about 64,000 in Roseville. As a result, there will be about 1.2 jobs in South Placer for every employed resident. More detail of the jobs and resident forecasts are discussed in Section A-2 below.

This study also considers a worst-case development scenario: that all four of Roseville's Specific Plan Areas will be fully builtout to the holding capacity of their acreages by the year 2005. For this to be the case, the Sacramento region would have to experience a greater rate of jobs growth than any economists projections to date suggest, and/or Roseville would have to attract a greater share of the regional totals than has ever been projected. If this scenario did come to pass, however, Roseville's jobs growth would be about 51,000 instead of the economist's projection of 42,000. South Placer would contain about 109,000 jobs and about 90,000 employed residents.

Under both the expected 2005 and the worst-case 2005 scenarios, South Placer would have considerably more jobs than employed residents. The surplus jobs would result in an importation of workers from other parts of the region. Workers would commute to Roseville and the rest of South Placer not only from Auburn and areas further north, but also from Sacramento and other areas to

the south, east and west. In the afternoon commute period, there would be more workers commuting south from jobs in Roseville to homes in Sacramento, than there would be commuters returning to Roseville from jobs in Sacramento. One of the key findings of this study is that future travel in South Placer, in addition to being significantly greater in magnitude, would obey patterns which would be the reverse of today's commute.

These forecasts suggest a jobs/labor force imbalance for the region as a whole. This would become more pronounced the closer to Roseville one looks.

1. Regional Jobs/Labor Force Balance

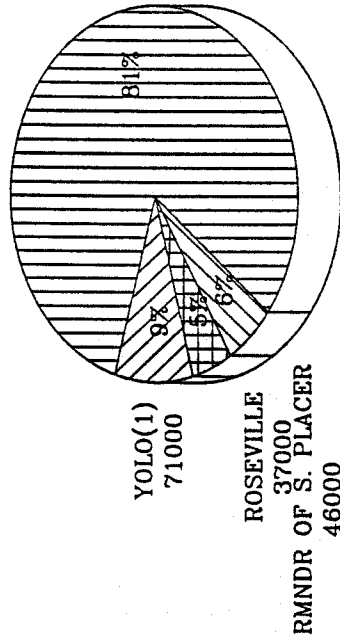
Currently there are about 0.9 jobs for every employable resident in the Sacramento region. The deficit is accounted for by a combination of out-commuting to other areas such as the San Francisco Bay Area, unemployment, both permanent and temporary (e.g. job change transitions). By the year 2005, with expected levels of development in Roseville and elsewhere in the region, the balance is expected to shift. As shown in Figure III-2, there are projected to be about 827,000 jobs and 813,000 employed residents in the region (i.e. 1.02 jobs for each employed resident).

This regional balance would be affected slightly if all four of Roseville's Specific Plan Areas were to fully build out by 2005. As shown in Figure III-3, the region would contain about 836,000 jobs and 820,000 employed residents (i.e. also 1.02 jobs for each employed resident).

Under both scenarios, there would be a slight surplus of jobs. As a result, one of the following would have to occur:

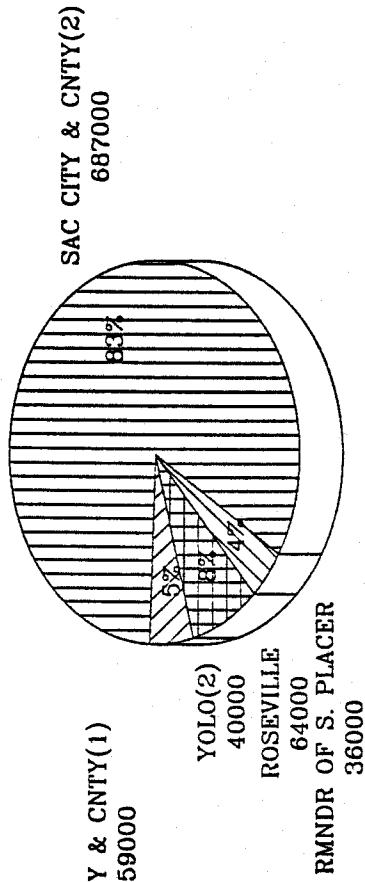
SACRAMENTO REGIONAL LAND USE 2005

EMPLOYED RESIDENTS



(813,000 TOTAL EMPLOYED RESIDENTS)

JOBS



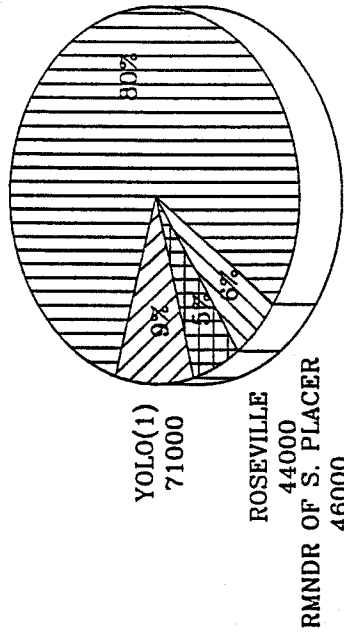
(827,000 TOTAL JOBS)

(1) ANGUS McDONALD & ASSOCIATES, FEB '88
(2) NORTH NATOMAS EIR, 1986

JOBS/LABOR FORCE = 1.02

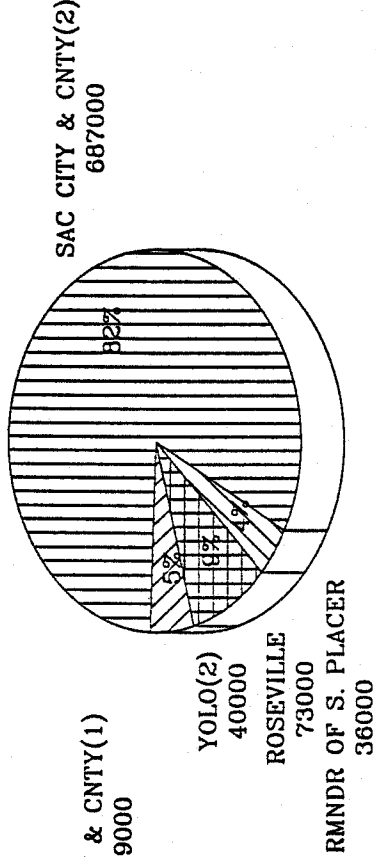
SACRAMENTO REGIONAL LAND USE 2005 W/ BUILDOUT OF 4 ROSEVILLE SP PLANS

EMPLOYED RESIDENTS



(820,000 TOTAL EMPLOYED RESIDENTS)

JOBS



(836,000 TOTAL JOBS)

(1) ANGUS McDONALD & ASSOCIATES, FEB '88
(2) NORTH NATOMAS EIR, 1986

JOBS/LABOR FORCE = 1.02

FIGURE III-3

- o suppression of jobs growth to less than 836,000,
- o additional housing growth, primarily in fringe areas near major localized jobs/housing imbalances,
- o importation of commuters from outside the area, such as central and northern Placer, and eastern El Dorado counties,
- o a combination of the above.

In any event, if the projected jobs growth actually occurs, there is likely to be additional residential growth within reasonable commute distances of those jobs. Consequently, the assumption of this study that there would be significant in-commuting to Roseville and South Placer from the south is a worst-case assumption. It is also possible that additional residential growth will occur in nearby areas of the county, immediately west and north of the intensive jobs growth areas of Roseville and Rocklin. Therefore, the assumption that the surplus South Placer jobs would primarily be filled by commuters from the south could overstate the need for improvements to facilities crossing the Placer/Sacramento county line.

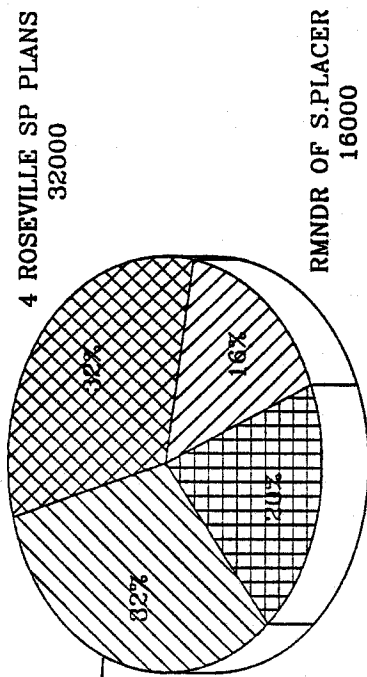
2. South Placer Jobs/Labor Force Balance

Figure III-4 illustrates the expected 2005 South Placer land use pattern. There are projected to be about 100,000 jobs from Lincoln and Newcastle to the Sacramento County line. About 64,000 of these would be in Roseville, and another 20,000 in Rocklin. There would be another 16,000 in other portions of the South County area, including about 9,000 in and around Lincoln.

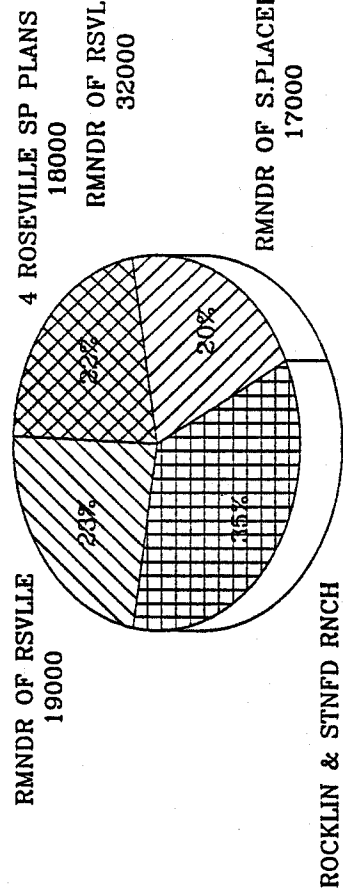
The 2005 resident labor force in South Placer is expected to be about 83,000. The area would, therefore, have about 20% more jobs than employed residents and would import workers

SOUTH PLACER LAND USE 2005

JOBS



EMPLOYED RESIDENTS



(83,000 TOTAL EMPLOYED RESIDENTS) (100,000 TOTAL JOBS)

(1) FROM NEWCASTLE SOUTH (EXCLUDES GRASS VALLEY, AUBURN & AREAS FURTHER NORTH)
 (2) INCLUDES N. INDUSTRIAL AT 2/3 BUILDOUT

JOBS/LABOR FORCE = 1.20

FIGURE III - 4

from other areas. As stated above, this study takes the worst-case assumption, that the majority of in-commuters would come from south of the Sacramento County line.

Under the worst-case assumption that all four Roseville Specific Plan Areas are fully developed and occupied by 2005, the area's jobs/labor force ratio becomes even less balanced. This case is illustrated in Figure III-5. The additional 9,000 jobs and 7,000 employed residents would result in a need to import a total of about 20,000 commuters into South Placer. The study conservatively assumes that the majority would commute in from the south.

3. Roseville Jobs/Labor Force Balance

Figures III-6 and III-7 presents the relationship between jobs and employed residents in Roseville's major planning areas and for the City as a whole. Figure III-5 indicates that under expected levels of 2005 development the City would contain about 64,000 jobs and 37,000 employed residents, a ratio of more than 1.7 jobs per resident worker. Even if every Roseville resident worked within the City, there would be a need to import about 27,000 commuters daily.

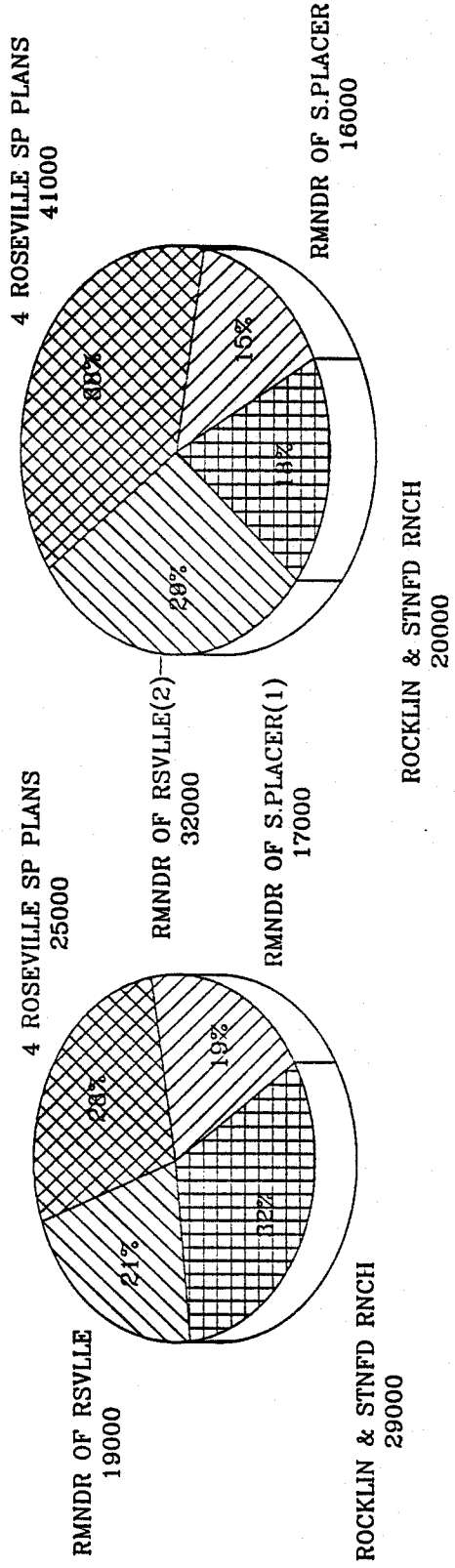
Under the assumption that all four Specific Plan areas are fully developed and occupied by 2005 (Figure III-6), there would be a surplus of about 30,000 jobs in Roseville.

Of those jobs which would not be filled by residents of nearby South Placer County, this study has assumed that the majority would be filled by commuters from Sacramento. If additional residential development takes place instead in areas of the County west and north of Roseville, as is more likely, the assumption of a primarily Sacramento in-commute

SOUTH PLACER LAND USE 2005 W/ BUILDOUT OF 4 ROSEVILLE SP PLANS

EMPLOYED RESIDENTS

JOBS



(90,000 TOTAL EMPLOYED RESIDENTS) (109,000 TOTAL JOBS)

(1) FROM NEWCASTLE SOUTH (EXCLUDES GRASS VALLEY, AUBURN & AREAS FURTHER NORTH)
 (2) INCLUDES N. INDUSTRIAL AT 2/3 BUILDOUT

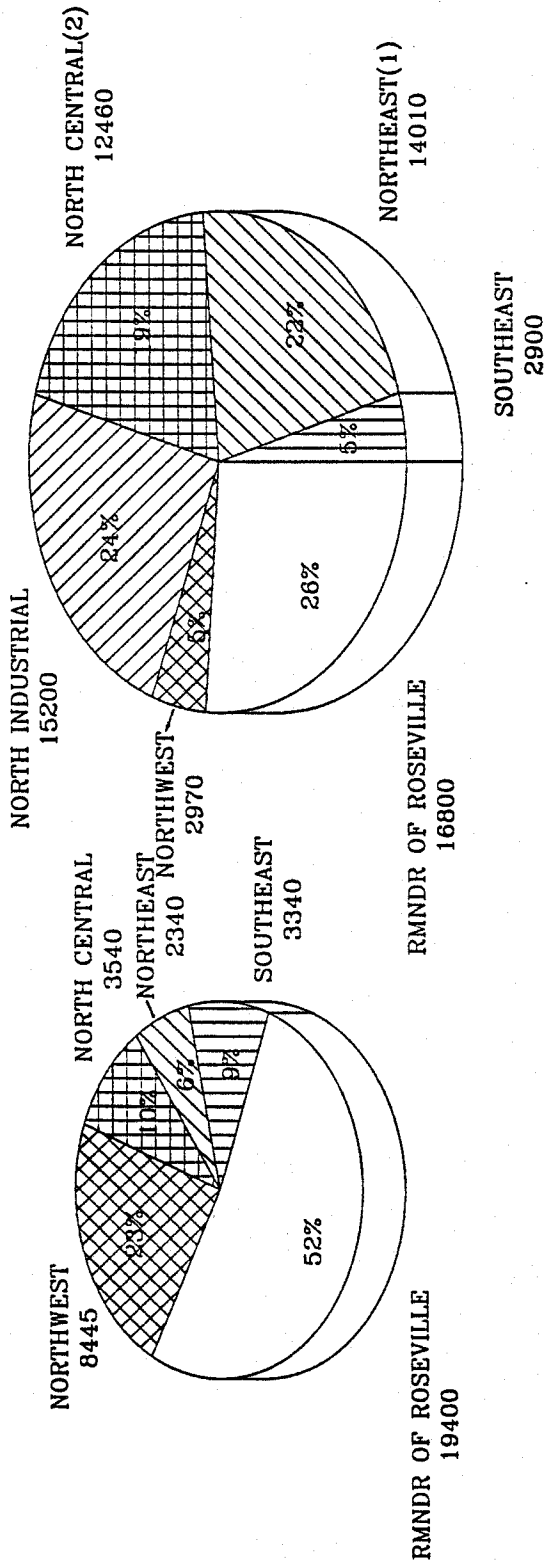
JOBS/LABOR FORCE = 1.21

FIGURE III-5

ROSEVILLE LAND USE 2005

EMPLOYED RESIDENTS

JOBS



(37,065 TOTAL EMPLOYED RESIDENTS)

(64,340 TOTAL JOBS)

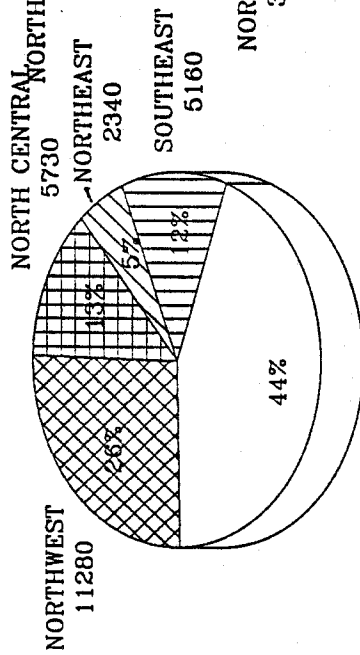
- (1) INCLUDES AUTO MALL
- (2) INCLUDES 2 REGIONAL SHOPPING CENTERS

JOBS/LABOR FORCE = 1.74

FIGURE III - 6

ROSEVILLE LAND USE 2005 WITH BUILDOUT OF 4 SPECIFIC PLANS

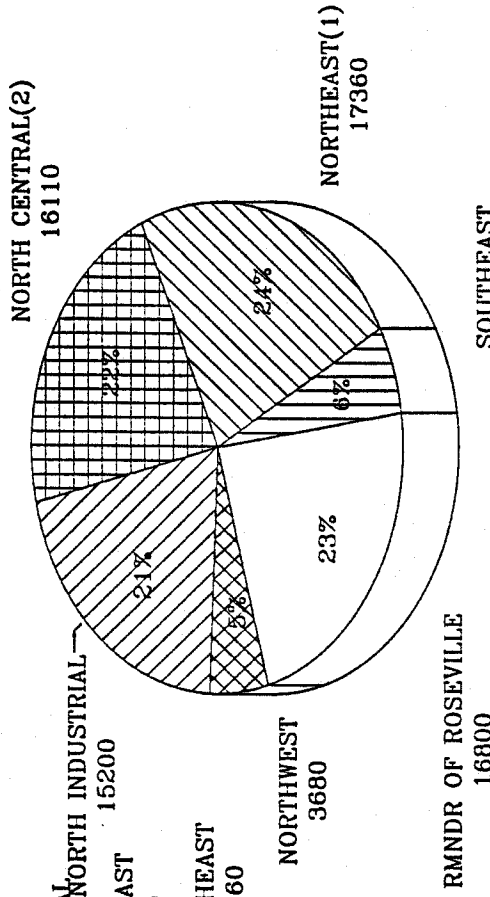
EMPLOYED RESIDENTS



(43,910 TOTAL EMPLOYED RESIDENTS)

- (1) INCLUDES AUTO MALL
- (2) INCLUDES 2 REGIONAL SHOPPING CENTERS

JOBS



(73,420 TOTAL JOBS)

JOBS/LABOR FORCE = 1.67

FIGURE III-7

is likely to over-state the need for improvements along the Route 65 Bypass and I-80 and the need to construct the LR 102. As a consequence, the analysis in this study of these inter-regional facilities presents a worst-case scenario.

B. Specific Plan Area Land Uses

Tables III-1 and III-2 give the cumulative 2005 land use projections for Roseville, including the Northwest and North Central Specific Plan Areas. For each area, the amount of residential development is given in terms of both dwelling units and projected population. The City's projected resident labor force is also given. The tables also give the amounts of non-residential development in each land use category and the total projected employment for each area. These employment estimates are based on assumed employee densities developed by the Roseville Planning Department and its economics/land use consultant, which are given in Table III-3. They are conservatively high when compared with certain existing workplace developments in the area.

Table III-1 gives the land uses under expected 2005 conditions, with less than full buildout of the Specific Plan areas. Under this scenario, Northwest Roseville would contain about 6500 dwelling units by 2005 and about 3000 jobs. Within the North Central area, it was assumed that two major shopping areas would be fully operational by 2005, one true regional shopping center, and one regional center equivalent, each of more than 90 acres. North Central would contain about 2700 dwelling units and about 12,400 jobs.

Table III-2 illustrates the effects of full buildout of all four specific plan areas by 2005. According to all of the economic projections which have recently been prepared for the area, full build-out of all four specific plans by the year 2005 is very

Table III-1

CITY OF ROSEVILLE LAND USE FORECASTS
YEAR 2005

	Dwelling Units	Populat'n	Business/ 1) Prof. (acres)	Comm- ercial (acres)	Light Industrial (acres)	General Industrial (acres)	Regional Comm. (acres)	Total 2) Employees
Existing Development 3)	12,640	30,968	Existing non-resid. acres not available					14,500
New Development								
City-wide Infill 4)	1,800	4,680	5	27	40	34	0	1,366
Footpaths Infill 4)	500	1,300	4	5	45	0	0	821
North Central 5)	2,724	7,082	105	80	122	0	190	12,456
Northeast 6)	1,800	4,680	278	104	0	0	86	14,112
North Industrial	0	0	0	7	1040	389	0	15,216
Northwest	6,496	16,890	18	88	46	0	0	2,970
Southeast	2,573	6,690	66	33	0	0	0	2,904
SUBTOTAL: New	15,893	41,322	476	344	1293	423	276	49,845
TOTAL: Existing + New								
Two Regional Centers in N.C.	28,533	72,290			Not Applicable			64,345
One Regional Center in N.C.	28,533	72,290			Not Applicable			61,495
Employees/Acre			34	20	13	4	30	
Labor Force (1.3 per D.U.)	37,093							

Sources: City of Roseville and McDonald & Associates, May 1986 and February 1988.

Roseville Northeast, Southeast, North Central, Northwest Specific Plan maps, 1986-1987.

- Existing Population = Existing Dwelling Units * 2.45 Residents per D.U.
New Population = New Dwelling Units * 2.6 Residents per D.U.
- Employment = Sum for Non-Residential Uses (Acreage * Employees/Acre)
- Excludes about 1200 existing dwelling units within the Northwest and Southeast Plan Areas.
and existing non-residential acreage and employment in Southeast and North Industrial areas.
- Residential growth to 2005 represents about 70% of potential growth to buildout.
Non-residential growth to 2005 equals about 35% of potential growth to buildout.
- Includes one regional shopping center, and one regional shopping center equivalent.
- Regional commercial in Northeast is an auto mall.

Table iii-2

CITY OF ROSEVILLE LAND USE FORECASTS
YEAR 2005 WITH BUILDOUT OF FOUR SPECIFIC PLAN AREAS

	Dwelling Units	Populat'n (1)	Business/ Prof. (acres)	Comm- ercial (acres)	Light Industrial (acres)	General Industrial (acres)	Regional Comm. (acres)	Total (2) Employees
Existing Development (3)	12,640	30,968	Existing non-resid. acres not available					14,500
New Development								
City-wide Infill (4)	1,800	4,680	5	27	40	34	0	1,366
Footfalls Infill (4)	500	1,300	4	5	45	0	0	821
North Central (5)	4,407	11,458	177	90	192	0	190	16,014
Northeast (6)	1,800	4,680	286	242	0	0	86	17,144
North Industrial	0	0	0	7	1040	389	0	15,216
Northwest	8,679	22,565	26	110	46	0	0	3,682
Southeast	3,970	10,322	102	40	0	0	0	4,268
SUBTOTAL: New	21,156	55,006	600	521	1363	423	276	58,511
TOTAL: Existing + new								
Two Regional Centers in N.C.	33,796	85,974			Not Applicable			73,011
One Regional Center in N.C.	33,796	85,974			Not Applicable			70,161
Employees/Acre			34	20	13	4	30	
Labor Force (1.3 per D.U)	43,935							

Sources: City of Roseville and McDonald & Associates, May 1986 and February 1988.
Roseville Northeast, Southeast, North Central, Northwest Specific Plan maps, 1986-1987.

1. Existing Population = Existing Dwelling Units * 2.45 Residents per D.U.
New Population = New Dwelling Units * 2.6 Residents per D.U.
2. Employment = Sum for Non-Residential Uses (Acreage * Employees/Acre)
3. Excludes about 1200 existing dwelling units within the Northwest and Southeast Plan Areas.
and existing non-residential acreage and employment in Southeast and North Industrial areas.
4. Residential growth to 2005 equals 65% to 70% of potential growth to buildout.
Non-residential growth to 2005 represents about 35% to 40% of potential growth to buildout.
5. Includes one regional shopping center, and one regional shopping center equivalent.
6. Regional commercial in Northeast is an auto mall.

Table III-3

EXPECTED EMPLOYEE DENSITIES
FOR NEW ROSEVILLE DEVELOPMENT

<u>Land Use</u>	<u>Sq. Feet Per Gross Acre</u>	<u>Expected Empl. Per Gross Acre</u>
Business Prof. and R & D	13,500	34
Light Industrial	10,000	13
Gen. Industrial	9,000	4
Gen. Commercial	9,000	20
Reg. Commercial	12,000	30

Sources: "Revised Roseville 2005 Forecasts" (Memo to City of Roseville), McDonald Associates, May 1986; and discussions with City of Roseville Planning staff, February 11, 1988.

unlikely. At build-out, the Northwest Specific Plan Area would contain almost 8700 dwelling units and 3700 jobs. The North Central Specific Plan Area, with two regional shopping centers or the equivalent, would contain about 4400 homes and about 16,000 jobs. Buildout of the other two plan areas (Northeast and Southeast) would add about 1400 dwelling units and about 4300 jobs to their expected 2005 levels. Overall, the City would contain about 4000 more dwelling units, 6000 more employed residents and 9000 more jobs under this buildout scenario than are expected by 2005 according recent economic forecasts.

IV. ANALYSIS METHODOLOGY

The traffic forecasts for this study were performed using the standard methodologies employed for regional and sub-regional transportation evaluations in the Sacramento and South Placer area. The methodology involves two major processes:

1. performing forecasts of future traffic volumes on all key facilities in the area, including freeway mainline sections and interchanges, and all principal surface streets and intersections,
2. analyzing the adequacy of the planned capacities of each individual facility, and estimating the expected Level of Service experienced by motorists and the needs for capacity improvements at critical locations.

These steps are described below.

A. Traffic Volume Forecasting

The traffic volume forecasting process employed for this study is similar to the processes use by jurisdictions throughout the Sacramento region, and to the process employed in recent Specific Plan EIR's in Roseville. The process employs the three standard travel demand forecasting steps:

1. trip generation,
2. trip distribution,
3. traffic assignment.

A microcomputer software package called "MINUTP" is used to execute these steps. This package was originally developed as a mainframe package ("UTPS") by the U.S. Department of Transportation. The microcomputer version is currently used by SACOG and Caltrans for regional transportation in the Sacramento region, and by staff and consultants to the City of Sacramento, Sacramento County and Placer County for major planning studies

and EIRs. It has also been used in recent and on-going EIRs in Southeast and Northeast Roseville.

The Roseville model employs a process known as "windowing" or "focusing" to determine accurate volumes on individual streets and freeway segments, interchanges and intersections. This involves performing traffic forecasts for the entire Sacramento region based on projected land uses, and then windowing in to an even more detailed street network and zone system within the Roseville/Rocklin area. The results of the regional model, indicate the amounts of future through travel, unrelated to development in Roseville or Rocklin, that will use facilities such as I-80 to travel through the area. They also indicate the percentage of Roseville area residents who will work, shop and find other travel destinations within the South Placer area, and the percentage that will travel out of the area for these purposes. These data are then used by the window area model to predict precise travel patterns for each development zone within the Roseville/Rocklin area, and indicate peak traffic turning movements at individual street intersections.

The trip generation analysis involves applying empirical trip generation rates to the land uses planned in each sub-area or "traffic zone" within the study area. The land uses for Northwest and North Central Roseville Specific Plan Areas and cumulative development areas in Roseville are given in Tables III-1 and III-2. Standard trip generation rates based on research published by the Institute of Transportation Engineers were applied to the amount of land use in each category in each zone to predict the amount of traffic generated in the p.m. peak hour. These rates are presented in Tables IV-1 and IV-2. They are the same as those used in the Northeast and Southeast Roseville Specific Plan EIRs.

Table IV.1

TRIP GENERATION RATES
BY LAND USE TYPE

<u>Land Use Category</u>	<u>Description/Size</u>	<u>Trips per D.U.</u>				
		<u>ADT</u>	<u>AM Peak</u>		<u>PM Peak</u>	
			<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
Residential	RD-1 thru RD-5	10	.21	.55	.63	.37
	RD-6 thru RD-10	8.5	.14	.50	.55	.30
	RD-11 thru RD-15	7.0	.12	.40	.47	.23
	RD-16 thru RD-20	6.0	.10	.35	.40	.20
			<u>Trips per Acre</u>			
		<u>ADT</u>	<u>AM Peak</u>		<u>PM Peak</u>	
			<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
Retail	<10 acres	738	11.2	10.4	34.0	36.2
	10-20 acres	600	8.1	7.2	25.7	27.4
	20-30 acres	455	3.6	1.8	21.0	22.0
	30-40 acres	377	14.4	6.3	24.5	25.0
	40-50 acres	497	3.3	1.7	24.0	25.0
	50-100 acres	409	4.0	2.6	17.0	17.1
	100 acres+	409	4.3	1.7	15.0	15.0
			<u>Trips per Acre</u>			
		<u>ADT</u>	<u>AM Peak</u>		<u>PM Peak</u>	
			<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
Schools, Parks	School K-6	35	3.5	1.8	0.4	0.7
	High School	49	6.7	2.4	2.4	6.6
	Parks	6	0.2	0.2	0.3	0.3

Table IV-2

TRIP GENERATION RATES FOR BUSINESS USES
UNDER EXPECTED DEVELOPMENT DENSITIES

<u>Land Use</u>	<u>Empl/ Acre</u>	<u>Trips/Empl.</u>			<u>Trips/Acre</u>				
		<u>ADT</u>	<u>AM</u>	<u>PM</u>	<u>AM</u>		<u>PM</u>		
					<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>	
BP/R & D	34	3.8	.54	.54	129	16.4	2.0	2.8	15.6
Gen. Ind.	4	3.0	.49	.57	12	1.8	0.2	0.3	2.0
LI	13	3.2	.67	.65	42	7.8	0.9	1.5	7.0

The traffic generated in each traffic zone is distributed to its likely destinations and assigned to reasonable travel routes based on proven transportation modelling principals. The distribution process is based on a "gravity model" principal, which states that the likelihood of travelling to a given destination for a given purpose is directly proportional to the attractiveness of that destination or the amount of activity there, and inversely proportional to the time it takes to get there. The traffic assignment principal states that individuals attempt to find the route which offers the shortest travel time between their point of origin and destination. The shortest path is affected by the levels of congestion on all alternative routes, and the selection of a given route is sensitive to its "capacity constraints" and the competition for use by other travellers. The traffic forecasts result in peak-hour traffic volume forecasts on each street segment in the roadway network and the turning movements predicted to occur at each individual intersection.

B. Capacity and Level of Service Analysis

The analysis of year 2005 peak hour operating conditions on Roseville's streets and highways is based on standard analysis techniques prescribed by the Transportation Research Board in the 1985 Highway Capacity Manual. The analysis of street intersection operation is based on its configuration, signalization and predicted p.m. peak hour traffic volumes. The future geometry of each intersection was defined according to the following guidelines.

- o For existing intersections (such as Sunrise/Douglas), the existing lane geometry and signalization was assumed, plus any reasonable improvements that could be accomplished with minimal expansion of right-of-way and without grade separation.

- o For intersections in currently undeveloped areas which can be designed to the highest standards (such as Harding/Roseville Parkway), the highest-capacity geometries dictated by the overall street and right-of-way width were assumed. The basic geometric assumptions are indicated in Table IV-3. Along with these basic geometries, and multi-phase signal operation was assumed. In cases where projected turning volumes were significantly unbalanced, the lane designations were adjusted from the standard assumptions given in Table IV-3 to a configuration that would be most effective within the available right-of-way.
- o At locations where at-grade improvements would not be sufficient and where reasonable right-of-way acquisition could be accomplished, construction of a grade separated interchange was called for. The standard assumption for such an improvement would be an "urban interchange" of the type recently installed at various locations Texas, Florida and Arizona. Such interchanges require minimal right-of-way. They allow the major through traffic movement to proceed uninhibited, and control all of the other movements at a single signalized intersection. They generally offer capacities which are 20% to 75% higher than those of an at-grade intersection and up to 10% higher than a standard diamond interchange.

The criterion for assessing adequacy of intersection operation was based on the Level of Service concept as defined in the 1985 Highway Capacity Manual. This relates the volume/capacity ratio of an intersection to the expected amount of delay which motorists will experience. Table IV-4 gives the correlation of volume/capacity ratios to Level of Service to delay. The relationships between volume capacity and LOS are only approximate, and they have been demonstrated to be conservative. These conservative measures were employed in this study in order to provide the City of Roseville with the measure of safety it desires in planning facilities to match or exceed the needs of future development. The City has selected a Level of Service rating of C and a maximum volume/capacity ratio of 0.79 as its evaluation criterion, even though the TRB and other local research indicates that an intersection will operate safely under

Table IV-3

ASSUMED LANE GEOMETRY
FOR NEW INTERSECTIONS

<u>Facility Type</u>	<u>Intsx. Type</u>	<u>Intersection Approach Lanes</u>		
		<u>Left</u>	<u>Thru</u>	<u>Right</u>
6-lane arterial	Full	2	3	1
4-lane arterial	Full	1	2	1
2-lane arterial	Full	1	1	1
6-lane arterial	T	2	0	1
4-lane arterial	T	2	0	1
2-lane arterial	T	1	0	1

Table IV-4

INTERSECTION LEVEL OF SERVICE DEFINITIONS

<u>Level of Service</u>	<u>Typical V/C Ratio</u>	<u>Stopped Delay (Sec. per Veh.)</u>
A	0.00 - 0.59	Up to 5
B	0.60 - 0.69	5 - 15
C	0.70 - 0.79	15 - 25
D	0.80 - 0.89	25 - 40
E	0.90 - 1.00	40 - 60
F	1.00 +	60 +

capacity and will have delays of about 25 seconds or less with planning volume/capacity ratios of up to 0.85. Therefore, this study defines street widenings and intersection improvements or urban interchanges in all cases where future volume/capacity ratios are projected to be 0.80 or greater.

In addition to intersection conditions, this study evaluates the operation of individual street and freeway segments, in order to identify ultimate size requirements and right-of-way needs. Table IV-5 gives the capacities of street and freeway segments. Streets within the City of Roseville were designed to operate at 80% of capacity or less.

Table IV-5
ROADWAY CAPACITIES

<u>Roadway Type</u>	<u>Number of Lanes</u>	<u>Peak Hour Capacity (per direction)</u>
Minor Arterial	2	700
Major Arterial	4	1,800
	6	2,700
Expressway	4	2,400
	6	3,500
Freeway Mainline	6	6,000
	8	8,000
	10	10,000
Freeway Ramp Loop	1	1,450
	2	2,600
Linear	1	1,700
	2	3,400

V. TRAFFIC IMPACTS AND MITIGATIONS

The traffic impacts and mitigations on Roseville roadways were evaluated under several development scenarios. All of the scenarios assumed expected 2005 development outside of the Roseville specific plan areas and the following levels of development inside of the specific plan areas:

Scenario

- A. No development in the specific plan areas.
- B. Buildout of the Northwest Specific Plan Area with expected 2005 development in the other specific plan areas.
- C1. Buildout of the North Central Specific Plan Area with one regional shopping center, and expected 2005 development in the other specific plan areas.
- C2. Buildout of the North Central Specific Plan Area with the equivalent of two regional shopping centers, and expected 2005 development in the other specific plan areas.
- D1. Buildout of all four Roseville specific plan areas with one regional shopping center in the North Central Specific Plan.
- D2. Buildout of all four Roseville specific plan areas with the equivalent of two regional shopping centers in the North Central Specific Plan.

Traffic impacts on street intersections and freeways are presented, as are mitigations required to bring intersection volume/capacity ratios to less than 0.80 where feasible.

A. 2005 With No Development of the Four Roseville Specific Plan Areas

The roadway system planned to support expected year 2005 development includes several roadways proposed as part of the specific plans in North Central, Northwest, Northeast and Southeast Roseville. These roadways include the Roseville Parkway both east and west of I-80, Carlsberg Boulevard, the Eureka Road extension to Atlantic, and several minor arterials and collectors. The study has assumed that if the four Roseville specific plan areas did not develop, many of these roadways and roadway connections would not be constructed.

The traffic impacts associated with this case, i.e. no development of the four Roseville specific plan areas and the exclusion of the roadways (listed in the previous paragraph) supporting these specific plan areas, and expected 2005 development elsewhere, were evaluated. In this scenario, the only portion of Roseville which would experience substantial growth by the year 2005 would be the North Industrial area, with approximately 16,000 employees.

Intersections - Impacts: Since three intersections in Roseville (Douglas & Sunrise, Cirby & Riverside, and Cirby & Sunrise) are currently operating at worse than LOS C, and few new facilities would be constructed to reduce traffic pressures on them, their peak period traffic performance would worsen.

In determining the future v/c ratios of the existing Roseville intersections, it was assumed that the major arterials in Roseville today (Douglas, Sunrise (south of Cirby), Cirby and Riverside) would be widened to six lanes by year 2005, and that the major intersection approaches would have the maximum number of lanes feasible. The only exception to this would be at the Douglas & Sunrise intersection, where physical and right-of-way

constraints prevent the widening of the intersection to two left-turn lanes, three through lanes, and one right-turn lane per approach.

As shown in Figure V-1, two intersections in Roseville would operate at a v/c ratio of 0.80 or greater in year 2005 without the development of the four Roseville specific plan areas. These intersections are Douglas & Sunrise (v/c ratio = 0.99) and Cirby & Riverside (v/c ratio = 0.83).

Intersections - Mitigations: The v/c ratios at these two intersections would be brought to less than 0.80 if grade separated improvements were constructed. With grade separation, Douglas & Sunrise would operate at 0.71 and Cirby & Riverside at 0.69. Additional mitigation measures such as transportation systems management (TSM) and peak hour turning movement prohibitions are discussed in Section E.

Freeways: The amount of traffic growth on I-80 and the 65 Bypass in the Roseville area is only partially dependent upon the level of development in Roseville. Unlike intersections which primarily serve local and sub-regional travel, regional facilities such as I-80 and the 65 Bypass serve a substantial portion of through travel, or trips traveling between points north of Roseville (such as Rocklin, Lincoln and Auburn) and points south of Roseville (primarily Sacramento). Since under expected 2005 conditions these areas surrounding Roseville are expected to grow steadily, so too are the traffic volumes on I-80 and the 65 Bypass.

The number of lanes which would be required on I-80 and the 65 Bypass were computed. The lane requirements were derived by using the following freeway capacities:

INTERSECTION VOLUME/CAPACITY RATIOS

2005 WITH NO DEVELOPMENT OF ROSEVILLE SPECIFIC PLAN AREAS

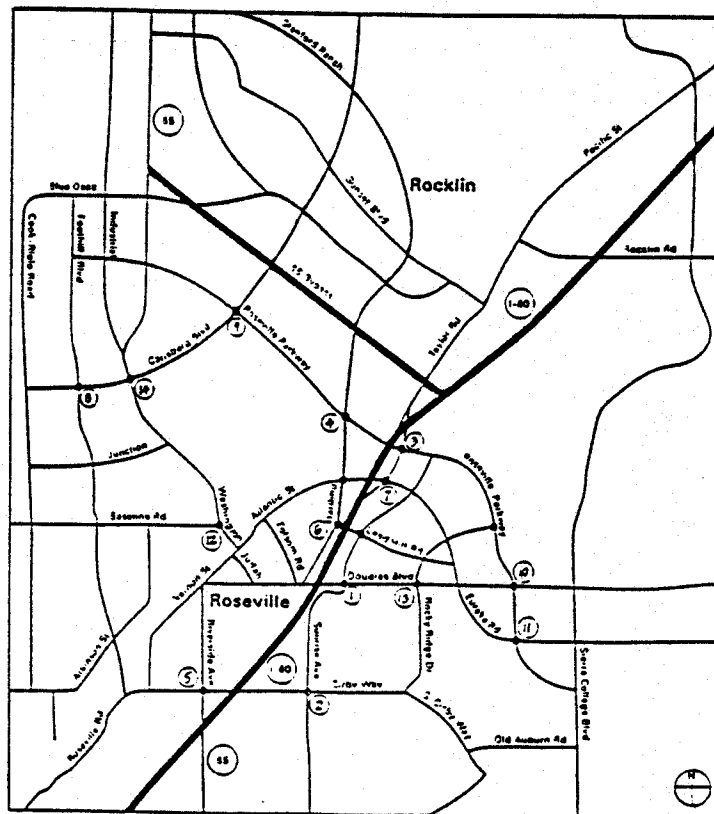
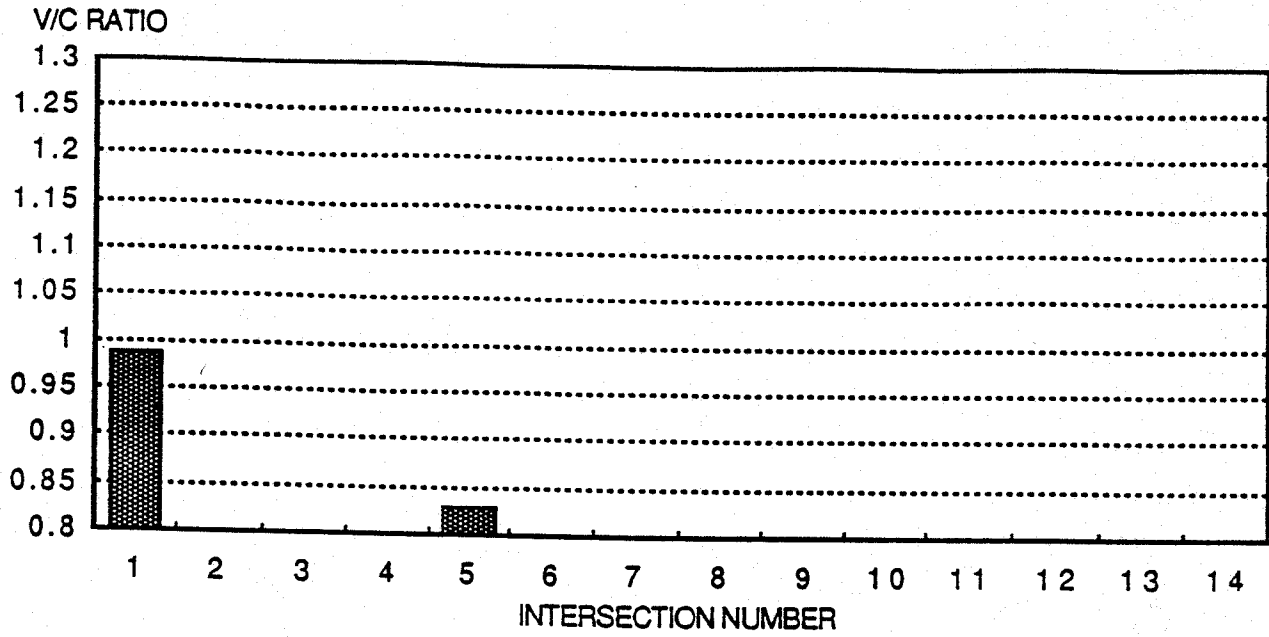


Figure V-1

2,000 vehicles per lane for the mainline;
1,700 vehicles per lane for a linear ramp; and
1,500 vehicles per lane for a loop ramp.

The number of lanes required on I-80 and the 65 Bypass assuming no development of the four Roseville Specific Plan Areas and expected 2005 development elsewhere are shown in Figure V-2. On the 65 Bypass, peak hour traffic demand volumes warrant two lanes per direction from Blue Oaks to Harding Boulevard and three lanes per direction from Harding Boulevard to I-80. The demand volumes indicate the need for a three lane ramp from the 65 Bypass to southbound I-80 and a three-lane ramp connecting northbound I-80 to the 65 Bypass. Interstate 80 would require three lanes per direction from I-80 to Taylor Road, four lanes per direction from Taylor Road to Atlantic, and three lanes per direction from Atlantic to south of Douglas.

B. 2005 With Buildout of the Northwest Plan Area

The traffic impacts which would result from the buildout of the Northwest Plan and expected 2005 development of the remainder Roseville and surrounding areas were analyzed. In this analysis it was assumed that there would be the equivalent of two regional shopping centers located in the North Central Specific Plan Area.

Intersections - Impacts: As shown in Table V-1 and Figure V-3, eight intersections in Roseville would operate at a v/c ratio of 0.80 or more if the Northwest Plan Area was fully built out and the remainder of Roseville and the region developed to expected 2005 levels. The Douglas & Sunrise and Roseville Parkway & Taylor intersections would operate at a v/c ratio of 1.0, while Baseline & Washington would operate at a v/c ratio of 0.93. The other five intersections would operate in the 0.83 to 0.88 range.

Intersections - Mitigations: The Baseline & Washington and Roseville Parkway & Taylor intersections are the intersections

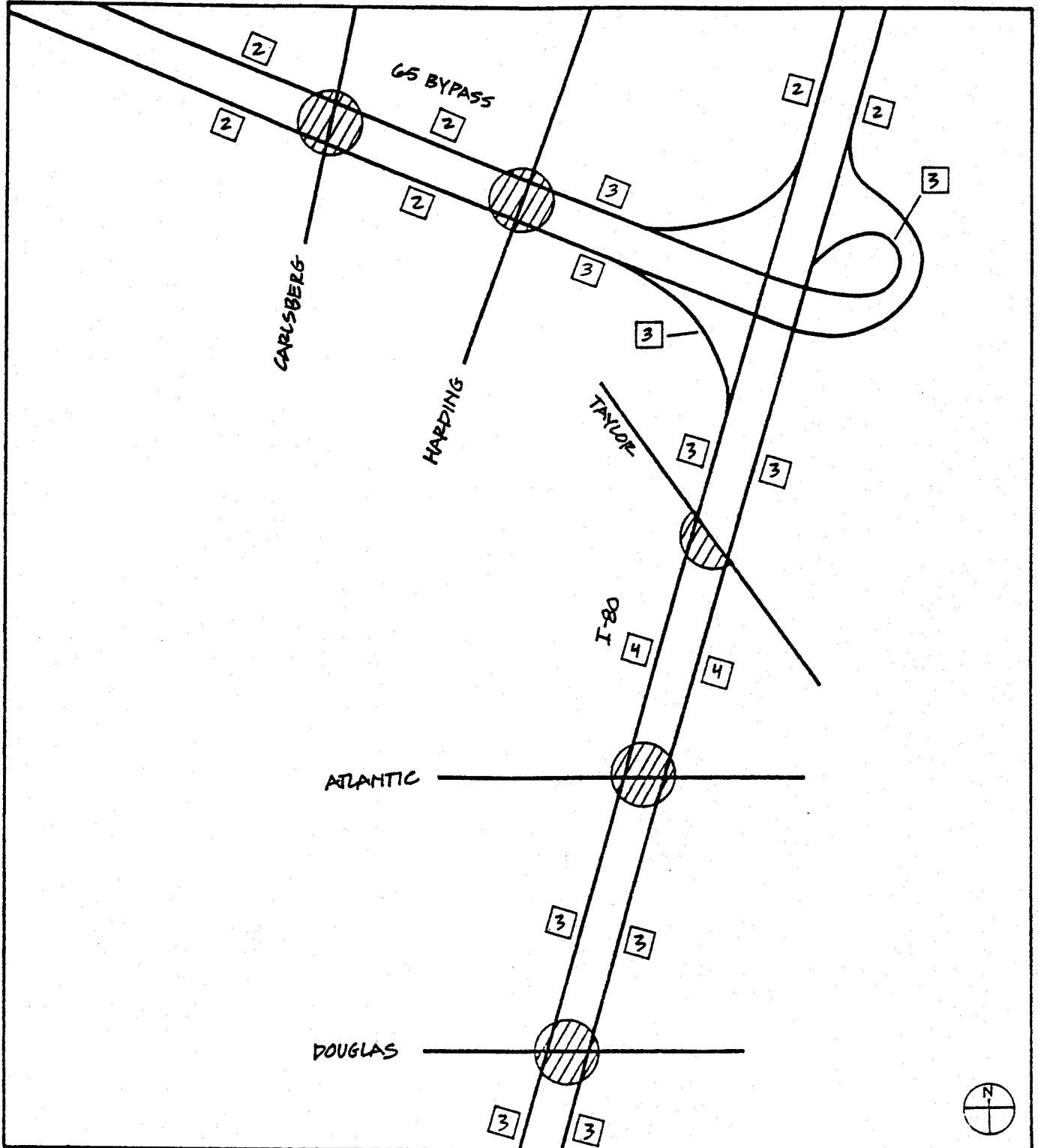


FIGURE V-2
LANE REQUIREMENTS FOR TRAFFIC DEMAND:
2005 WITH NO DEVELOPMENT OF 4 ROSEVILLE SPECIFIC PLAN AREAS

LEGEND
 LANE REQUIREMENTS
 BASED ON ULTIMATE
 CAPACITY

Table V-1

INTERSECTIONS WITH VOLUME/CAPACITY RATIOS OF 0.80 OR MORE
2005 WITH BUILDOUT OF THE NORTHWEST SPECIFIC PLAN AREA

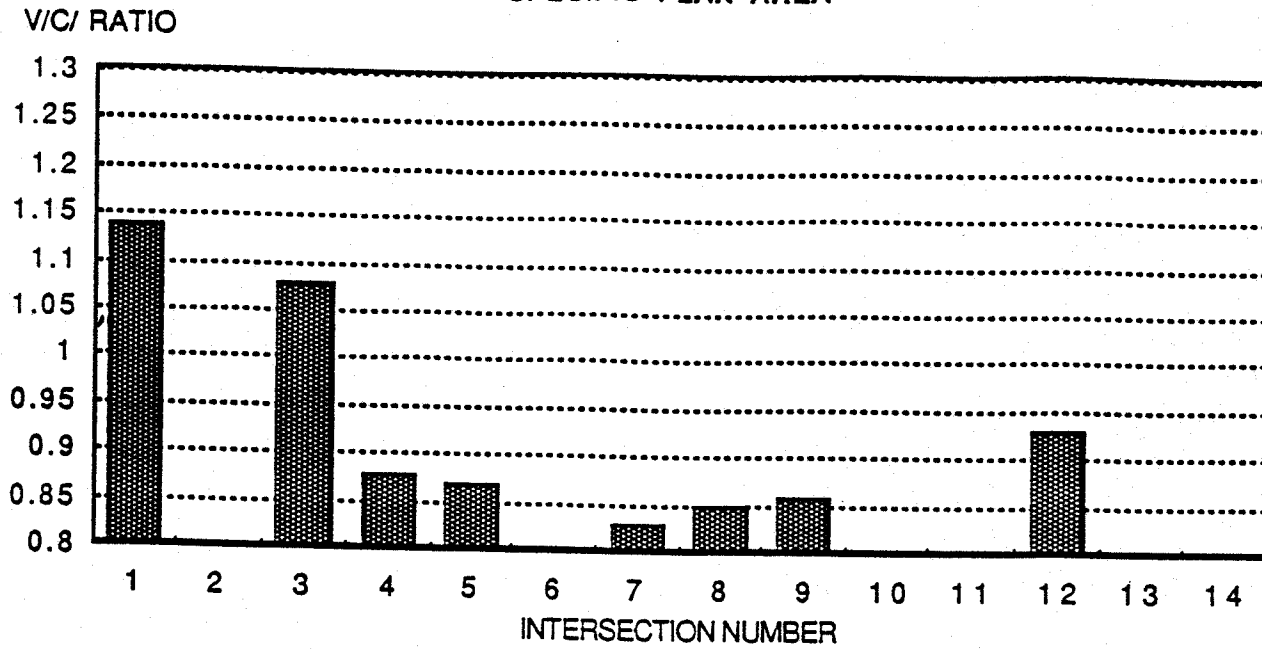
<u>Intersection</u>	<u>Volume/Capacity Ratio</u>	<u>Level of Service</u>
Douglas & Sunrise	1.14 (1.00)*	E/F
Roseville Pkwy & Taylor	1.08 (1.00)*	E/F
Roseville Pkwy & Harding	0.88	D
Cirby & Riverside	0.87	D
Eureka & Taylor	0.83	D
Foothill & Carlsberg	0.85	D
Roseville Pkwy & Carlsberg	0.86	D
Baseline & Washington	0.93	E

Note: Assumes two regional shopping centers in the North Central Plan Area.

* Volume/capacity ratios of over 1.00 actually represent demand/capacity ratios. By definition volume/capacity ratios can not exceed 1.00. Historically, drivers travel at different times of the day or on different routes to avoid intersection overload.

INTERSECTION VOLUME/CAPACITY RATIOS

2005 WITH BUILDOUT OF NORTHWEST SPECIFIC PLAN AREA



NOTE 2 REG SHPG CNTRS IN N.CENTRAL PLAN

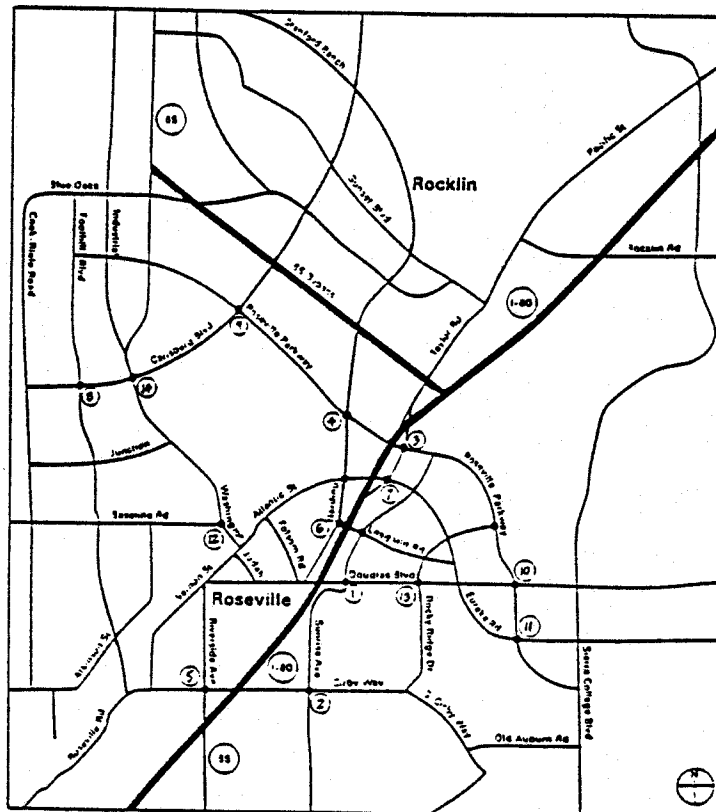


Figure V-3

which could be brought to a v/c ratio of less than 0.80 with at-grade improvements alone. At the Baseline & Washington intersection, a second northbound to westbound left-turn lane on Washington would bring the v/c ratio to 0.77. At the Roseville Parkway & Taylor intersection, a second northbound to westbound left-turn lane would improve the v/c ratio from 1.00 to 0.78.

The other four intersections (six without TSM or left-turn prohibitions) would require grade separation in order to achieve a v/c ratio of less than 0.80. The v/c ratios which would result from grade separation are shown in Table V-2.

Other mitigations such as TSM and turning movement prohibitions would preclude the need for grade separation improvements at Foothill & Carlsberg and Eureka & Taylor. These mitigations are discussed in Section E.

Freeways: The number of lanes per direction which would be required on the 65 Bypass and I-80 in 2005 with the buildout of the Northwest Specific Plan Area are presented in Figure V-4. The demand volumes would require two lanes in each direction on the 65 Bypass from Blue Oaks to Carlsberg Boulevard, and three lanes per direction from Carlsberg Boulevard to I-80. The peak hour volumes would also require the ramps connecting the 65 Bypass to I-80 south to be three lanes. Interstate 80 would need to be three lanes from the 65 Bypass to Taylor Road, four lanes from Taylor Road to Douglas Boulevard, and five lanes south of Douglas Boulevard.

C. 2005 With Buildout of the North Central Plan Area

The transportation impacts which would result from the full buildout of the North Central Specific Plan Area with expected 2005 development in the remainder of Roseville and outlying areas were evaluated assuming:

Table V-2

INTERSECTION VOLUME/CAPACITY RATIOS AFTER
 GRADE SEPARATION IMPROVEMENTS
 2005 WITH BUILDOUT OF THE NORTHWEST SPECIFIC PLAN AREA
 (Without TSM or turn prohibitions)

<u>Intersections Requiring Grade Separation</u>	<u>Volume/Capacity Ratio</u>	
	<u>W/O Grade* Separation</u>	<u>With Grade* Separation</u>
Douglas & Sunrise	1.14 (1.00)*	0.72
Roseville Parkway & Harding	0.88	0.66
Cirby & Riverside	0.87	0.73
Eureka & Taylor	0.83	0.43
Foothill & Carlsberg	0.85	0.66
Roseville Parkway & Carlsberg	0.86	0.56

* Volume/capacity ratios of over 1.00 actually represent demand/capacity ratios. By definition volume/capacity ratios can not exceed 1.00. Historically, drivers travel at different times of the day or on different routes to avoid intersection overload.

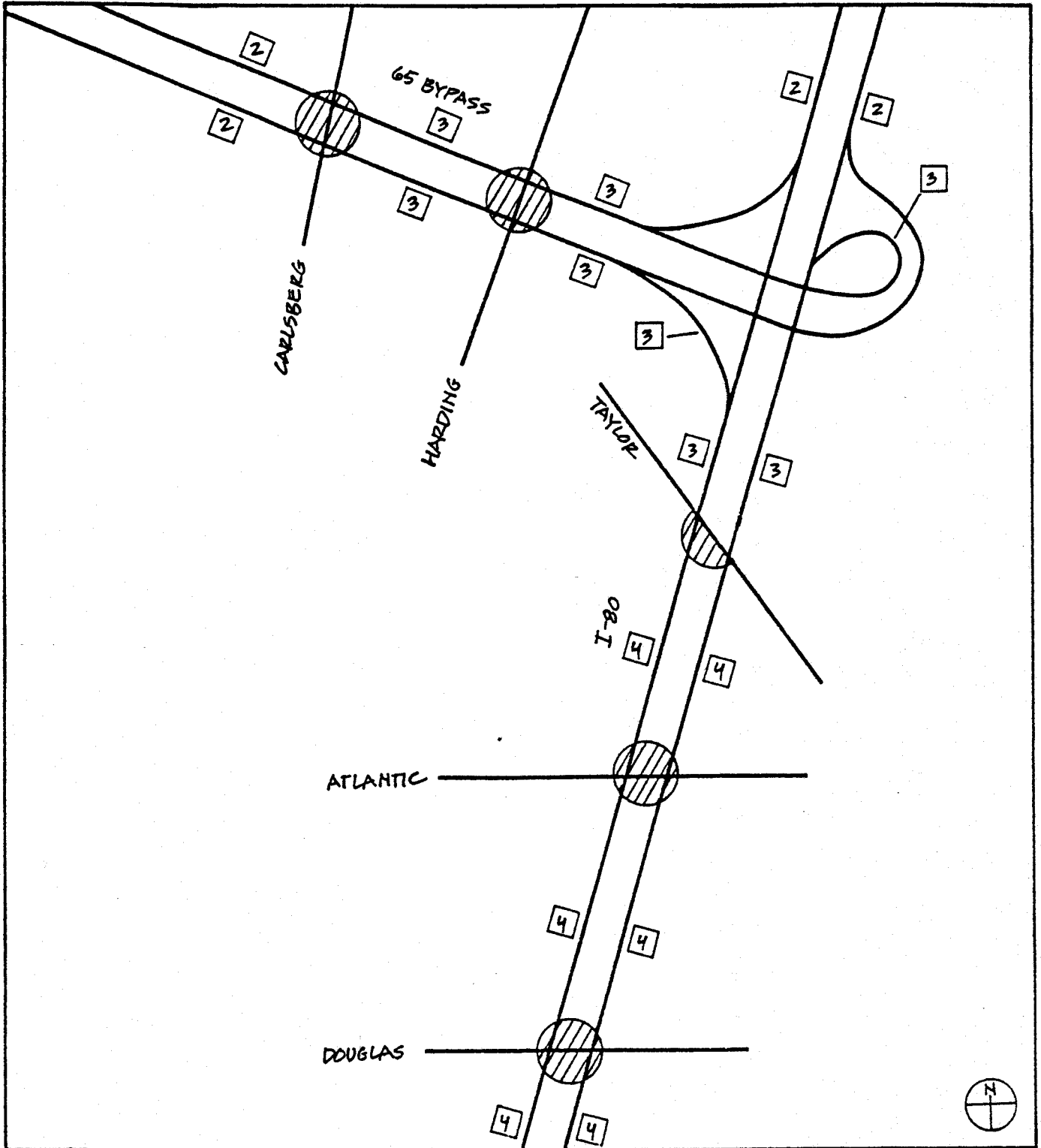


FIGURE V-4
 LANE REQUIREMENTS FOR TRAFFIC DEMAND:
 2005 WITH BUILDOUT OF NORTHWEST SPECIFIC PLAN AREA

LEGEND
 □ LANE REQUIREMENTS
 BASED ON ULTIMATE
 CAPACITY

1. One regional shopping center in the North Central Plan.
2. The traffic equivalent of two regional shopping centers in the North Central Plan.

The proposed retail areas are located on either side of Harding Boulevard, south of the 65 Bypass interchange. According to the most recent land-use maps, the retail area on the west side of Harding Boulevard would be 90 acres at full buildout, and the area on the east side would be 100 acres at buildout. For analysis purposes, in the scenario with one regional shopping center we assumed that the two retail areas would each build out to the 50 percent level. Therefore, the west parcel would have 45 acres developed while the east parcel would have 50 acres developed, totaling 95 acres.

Intersections -Impacts: As described in the analysis methodology section, all of the intersections (existing and future) in Roseville were evaluated in terms of v/c ratio and level of service. In the scenario assuming expected 2005 development plus the buildout of the North Central Plan, resulting intersection v/c ratios and levels of service were computed and compared assuming one and the equivalent of two regional shopping centers in the North Central Plan Area.

Table V-3 shows the intersections which would operate at a v/c ratio of 0.80 or greater with one or two regional shopping centers or equivalents in the North Central Plan. A total of eight intersections would operate at a v/c ratio of 0.80 or more. As indicated in Figure V-5, the two intersections which would be most impacted by a second regional shopping center in the North Central Plan are Eureka & Taylor and Douglas & Rocky Ridge. The Eureka & Taylor intersection would increase from 0.83 (LOS D) to 0.91 (LOS E), while the Douglas & Rocky Ridge intersection would increase from 0.86 (LOS D) to 0.90 (LOS E).

Table V-3

INTERSECTIONS WITH VOLUME/CAPACITY RATIOS OF 0.80 OR MORE
2005 WITH BUILDOUT OF THE NORTH CENTRAL SPECIFIC PLAN AREA

<u>Intersection</u>	<u>With 1 Regional Shopping Center</u>		<u>With 2 Regional Shopping Centers</u>	
	<u>v/c Ratio</u>	<u>LOS</u>	<u>v/c Ratio</u>	<u>LOS</u>
Douglas & Sunrise	1.17 (1.00)*	E/F	1.17 (1.00)*	E/F
Roseville Pkwy & Taylor	1.05 (1.00)*	E/F	1.08 (1.00)*	E/F
Roseville Pkwy & Harding	0.96	E	0.99	E
Cirby & Riverside	0.86	D	0.86	D
Eureka & Taylor	0.83	D	0.91	E
Foothill & Carlsberg	0.81	D	0.82	D
Douglas & Rocky Ridge	0.86	D	0.90	E
Baseline & Washington	0.93	E	0.93	E

*Volume/capacity ratios of over 1.00 actually represent demand/capacity ratios. By definition volume/capacity ratios can not exceed 1.00. Historically, drivers travel at different times of the day or on different routes to avoid intersection overload.

INTERSECTION VOLUME/CAPACITY RATIOS 2005 WITH BUILDOUT OF NORTH CENTRAL SPECIFIC PLAN AREA

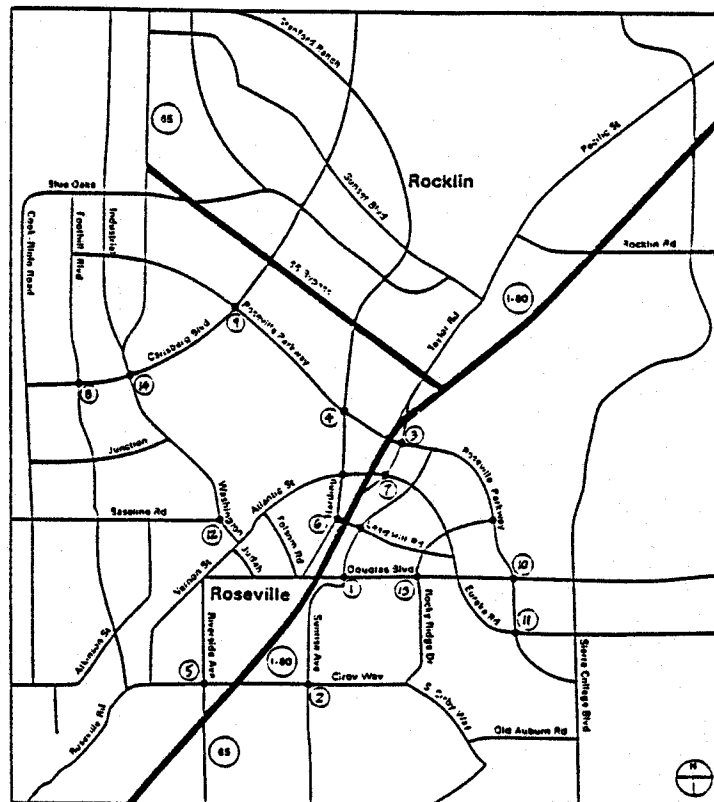
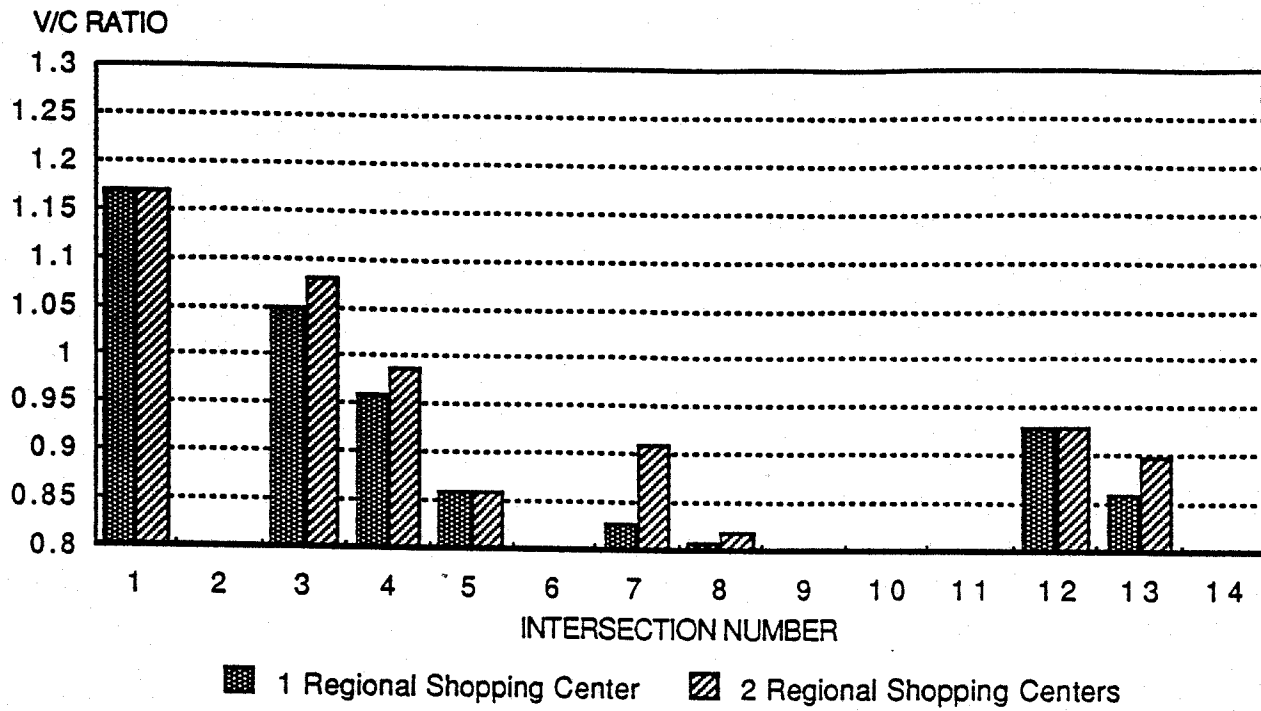


Figure V-5

Intersections - Mitigations: At-grade improvements could be made at two of the eight intersections to bring them to a v/c ratio of less than 0.80. At the Douglas & Rocky Ridge intersection, Rocky Ridge could be widened to six lanes both north and south of the intersection. This widening would provide enough capacity at the intersection to bring it to a v/c ratio of 0.69 (LOS B) assuming one regional shopping center in the North Central Plan Area, and 0.70 (LOS C) assuming the equivalent of two regional shopping centers.

At-grade intersection improvements could also be made at the Washington & Baseline intersection to bring the v/c ratio to less than 0.80. A second left-turn lane from Washington to Baseline would provide needed capacity and lessen the v/c ratio to 0.77 (LOS C) assuming one or the equivalent of two regional shopping centers in North Central Roseville.

At the Roseville Parkway & Taylor intersection, a second northbound to westbound left-turn lane would result in a v/c ratio of 0.78 assuming one regional shopping center in the North Central Plan. This same improvement, however, would result in a v/c ratio of 0.83 assuming the equivalent of two regional centers in the North Central Plan. Thus, at-grade improvements could be made to mitigate the Roseville Parkway & Taylor intersection if there was one regional shopping center in the North Central Plan, but additional grade separated improvements would be needed if there were the equivalent of two shopping centers in the North Central Plan.

Other mitigation measures such as TSM and peak hour turning movement prohibitions would preclude the need to construct grade-separation improvements at two of these intersections; Eureka & Taylor and Foothill & Carlsberg. This is discussed in greater detail in Section E.

Grade separation improvements would bring the v/c ratios to less than 0.80 at the other three intersections (five intersections without TSM or turn prohibitions. The intersections which would require grade separation and the v/c ratios which would result are shown in Table V-4.

Construction of urban interchanges would bring the volume/capacity ratios to less than 0.80 at all intersections assuming one or the equivalent of two regional shopping centers in the North Central Plan Area.

Freeways: As shown in Figure V-6, the number of lanes required on the 65 Bypass and I-80 in 2005 with buildout of the North Central Plan Area would not change whether one or the equivalent of two regional shopping centers were built. On the 65 Bypass two lanes per direction would be required on the segment between Blue Oaks and Carlsberg Boulevard, increasing to three lanes per direction from Carlsberg Boulevard to I-80. Based on the demand volumes, a three-lane ramp connecting the 65 Bypass to I-80 southbound, and a three-lane loop ramp connecting I-80 northbound to the 65 bypass would be needed. It should be noted that the lane requirements shown are based strictly on demand volumes. Widening a ramp to three lanes may be infeasible or undesirable.

Interstate 80 would require three lanes per direction from the 65 Bypass to the Taylor interchange, four lanes per direction from Taylor to Douglas Boulevard, and five lanes per direction south of Douglas Boulevard.

D. 2005 With Buildout of the Four Roseville Specific Plan Areas

The traffic impacts due to the buildout of all four Roseville Specific Plan Areas (North Central, Northwest, Northeast and Southeast) and expected 2005 conditions elsewhere were evaluated under two scenarios assuming -

Table V-4

INTERSECTION VOLUME/CAPACITY RATIOS AFTER GRADE-SEPARATION IMPROVEMENTS
 2005 WITH BUILDOUT OF THE NORTH CENTRAL SPECIFIC PLAN AREA
 (Without TSM or turn prohibitions)

<u>Intersections Requiring Grade Separation</u>	<u>With 1 Regional Shopping Center</u>		<u>With 2 Regional Shopping Centers</u>	
	<u>WO/Grade Separation</u>	<u>W/Grade Separation</u>	<u>WO/Grade Separation</u>	<u>W/Grade Separation</u>
Douglas & Sunrise	1.17 (1.00)*	.76	1.17 (1.00)*	0.75
Roseville Pkwy & Taylor	0.78 ¹	N/A	1.08 (1.00)*	0.42 ²
Roseville Pkwy & Harding	0.96	.66	0.99	.69
Cirby & Riverside	0.86	.70	0.86	.72
Eureka & Taylor	0.83	.57	0.91	.59
Foothill & Carlsberg	0.81	.74	0.82	.69

¹ At-grade improvements would mitigate the Roseville Parkway & Taylor intersection assuming one regional shopping center in the North Central Plan Area. Thus, grade separation is not needed.

² Includes the at-grade improvements required to mitigate the intersection assuming one regional shopping center.

* Volume/capacity ratios of over 1.00 actually represent demand/capacity ratios. By definition volume/capacity ratios can not exceed 1.00. Historically, drivers travel at different times of the day or on different routes to avoid intersection overload.

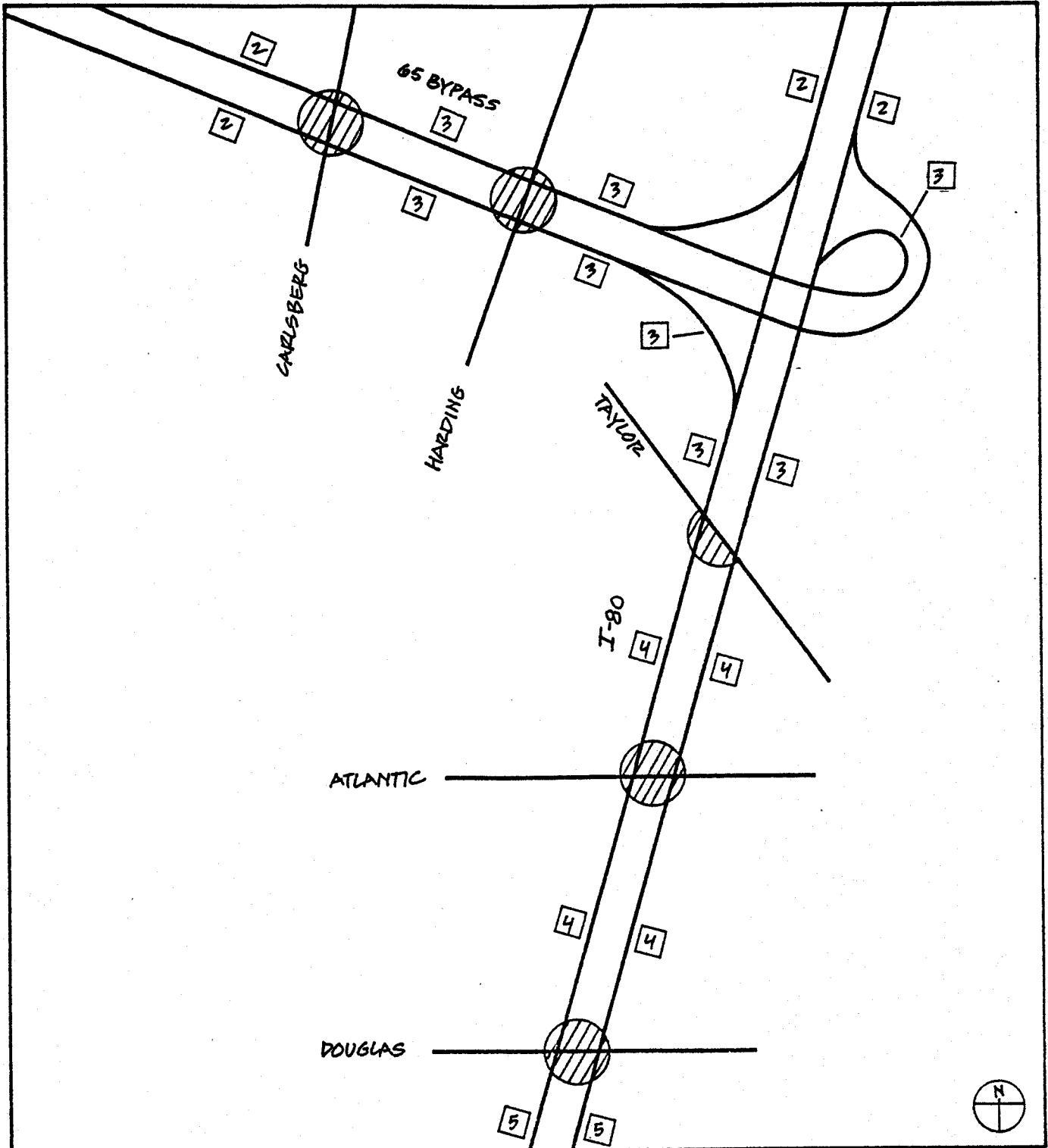


FIGURE V-6
LANE REQUIREMENTS FOR TRAFFIC DEMAND:
2005 WITH BUILDOUT OF NORTH CENTRAL PLAN AREA
AND 1 OR 2 REGIONAL SHOPPING CENTERS

LEGEND
 □ LANE REQUIREMENTS
 BASED ON ULTIMATE
 CAPACITY

1. One regional shopping center in the North Central Plan.
2. The equivalent of two regional shopping centers in the North Central Plan.

Intersections - Impacts: With buildout of the four Roseville Specific Plans and expected 2005 development elsewhere, twelve intersections in Roseville would operate at a v/c ratio of 0.80 or more, regardless of whether there were one or the equivalent of two shopping centers in the North Central Plan Area. The unmitigated v/c ratios and service levels of these twelve intersections are presented in Table V-5 and are graphically illustrated in Figure V-7.

Intersections - Mitigations: At-grade intersection improvements would reduce the v/c ratios at three of the twelve intersections to levels less than 0.80. These mitigations and resulting v/c ratios are as follows:

<u>Intersection</u>	<u>Mitigation</u>	<u>1 Regional Shopping Center</u>		<u>2 Regional Shopping Centers</u>	
		<u>Without Mitigation</u>	<u>With Mitigation</u>	<u>Without Mitigation</u>	<u>With Mitigation</u>
Baseline & Washington	Add second northbound left-turn lane	0.96	0.79	0.95	0.79
Douglas & Rocky Ridge	Widen Rocky Ridge to six lanes	0.84	0.67	0.89	0.72
Carlsberg & Washington	Add second northbound left-turn lane	0.80	0.70	0.83	0.73

Other mitigations such as TSM and turning movement prohibitions would preclude the need for separation improvements at four of the nine intersections. These intersections are at Cirby &

Table V-5

INTERSECTIONS WITH VOLUME/CAPACITY RATIOS OF 0.80 OR MORE
2005 WITH BUILDOUT OF THE FOUR ROSEVILLE SPECIFIC PLAN AREAS

<u>Intersection</u>	<u>With 1 Regional Shopping Center in No. Central Plan</u>		<u>With 2 Regional Shopping Centers in No. Central Plan</u>	
	<u>V/C Ratio</u>	<u>LOS</u>	<u>V/C Ratio</u>	<u>LOS</u>
Douglas & Sunrise	1.17 (1.00)*	E/F	1.23 (1.00)*	E/F
Cirby & Sunrise	0.83	D	0.83	D
Roseville Pkwy & Taylor	1.11 (1.00)*	E/F	1.17 (1.00)*	E/F
Roseville Pkwy & Harding	1.05 (1.00)*	E/F	1.02 (1.00)*	E/F
Cirby & Riverside	0.86	D	0.89	D
Lead Hill & Harding	0.87	D	0.81	D
Eureka & Taylor	0.87	D	0.99	E
Foothill & Carlsberg	0.80	D	0.85	D
Roseville Pkwy & Carlsberg	0.87	D	0.87	D
Baseline & Washington	0.96	E	0.95	E
Douglas & Rocky Ridge	0.84	D	0.89	D
Carlsberg & Washington	0.80	D	0.83	D

* Volume/capacity ratios of over 1.00 actually represent demand/capacity ratios. By definition volume/capacity ratios can not exceed 1.00. Historically, drivers travel at different times of the day or on different routes to avoid intersection overload.

INTERSECTION VOLUME/CAPACITY RATIOS 2005 WITH BUILDOUT OF 4 ROSEVILLE SPECIFIC PLAN AREAS

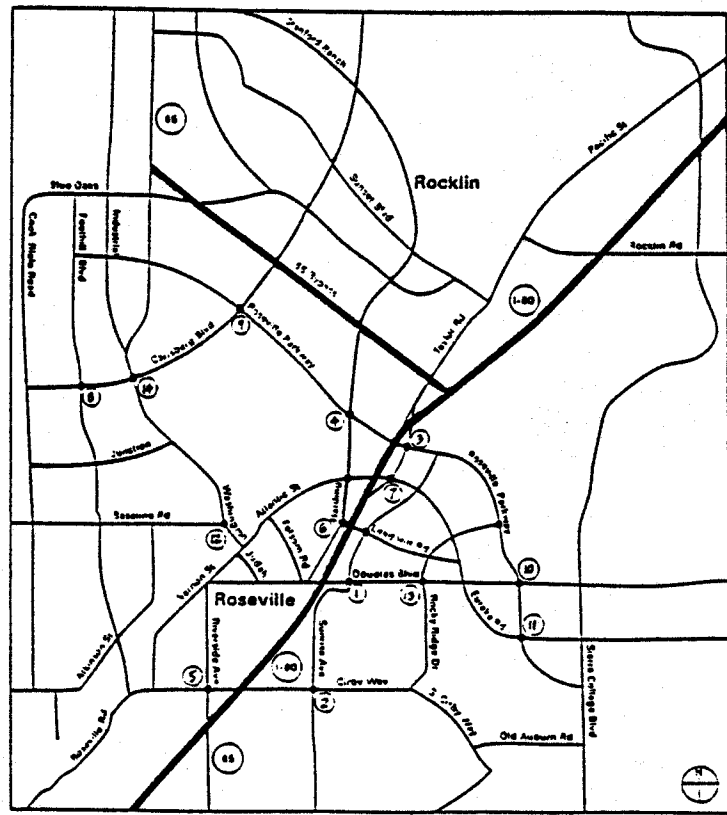
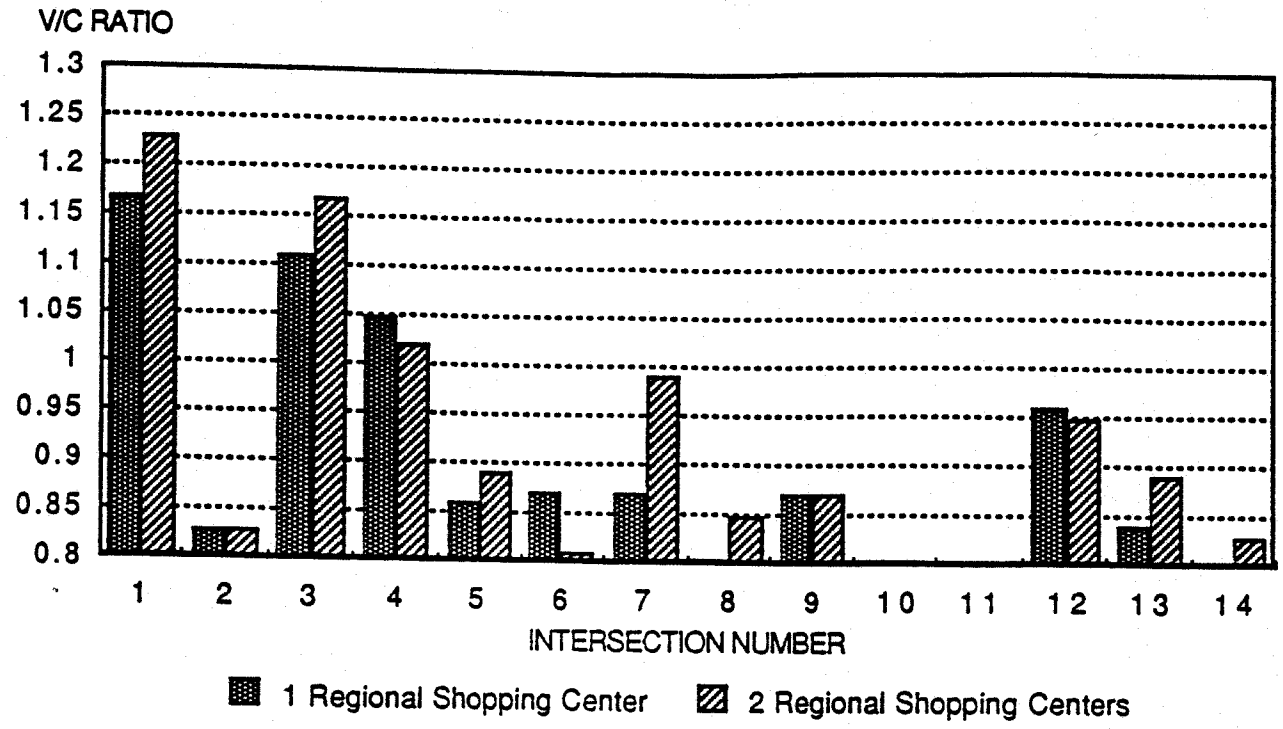


Figure V-7

Sunrise, Lead Hill & Sunrise, Eureka & Taylor and Foot-hill & Carlsberg. These mitigations are discussed in Section E.

The other nine intersections would require grade separation improvements in order to reduce their v/c ratios. As shown in Table V-6, v/c ratios of less than 0.80 would result at all intersections due to grade separation improvements.

Freeways: The number of lanes which would be required on the 65 Bypass and I-80 are shown in Figure V-8. On the 65 Bypass there would need to be two lanes per direction from Blue Oaks to Carlsberg Boulevard, and three lanes per direction from Carlsberg Boulevard to I-80. Interstate 80 would need to be three lanes per direction from the Bypass to Taylor Road, four lanes per direction from Taylor Road to Douglas Boulevard, and five lanes per direction south of Douglas Boulevard.

E. Further Mitigations

As was shown in the previous section, a total of nine intersections would need to have grade separation improvements in the year 2005 with buildout of all four Roseville Specific Plan areas. If an intersection was expected to operate at a v/c ratio of 0.80 or more (using the Circular 212 Planning Method), and at-grade improvements would not bring its v/c ratio to less than 0.80, then an urban interchange would be needed. Although this analysis method is valid for planning purposes as it shows the expected magnitude and location of possible urban interchanges, it does not necessarily determine what and where capital improvements will be made. For example, trip generation rates may be less than those assumed in this report due to the impact of measures such as Transportation Systems Management (TSM), a measure to reduce individuals driving alone during the peak hour.

Table V-6

RESULTING VOLUME/CAPACITY RATIOS
 AFTER GRADE-SEPARATION IMPROVEMENTS
 2005 WITH BUILDOUT OF THE FOUR ROSEVILLE SPECIFIC PLAN AREAS
 (Without TSM or turn prohibitions)

<u>Intersection</u>	<u>1 Regional Shopping Ctr. in North Central Plan</u>		<u>2 Regional Shopping Ctrs. in North Central Plan</u>	
	<u>WO/Grade Separation</u>	<u>W/Grade Separation</u>	<u>WO/Grade Separation</u>	<u>W/Grade Separation</u>
Douglas & Sunrise	1.17 (1.00)*	0.77	1.23 (1.00)*	0.78
Cirby & Sunrise	0.83	0.60	0.83	0.60
Roseville Parkway & Taylor	1.11 (1.00)*	0.46 ¹	1.17 (1.00)*	0.49 ¹
Roseville Parkway & Harding	1.05 (1.00)*	0.74	1.02 (1.00)*	0.71
Cirby & Riverside	0.86	0.73	0.89	0.74
Lead Hill & Harding	0.87	0.53	0.81	0.52
Eureka & Taylor	0.87	0.44	0.99	0.49
Foothill & Carlsberg	0.80	0.61	0.85	0.66
Roseville Parkway & Carlsberg	0.87	0.61	0.87	0.62

¹ Includes at grade improvements discussed in Section C.

* Volume/capacity ratios of over 1.00 actually represent demand/capacity ratios. By definition volume/capacity ratios can not exceed 1.00. Historically, drivers travel at different times of the day or on different routes to avoid intersection overload.

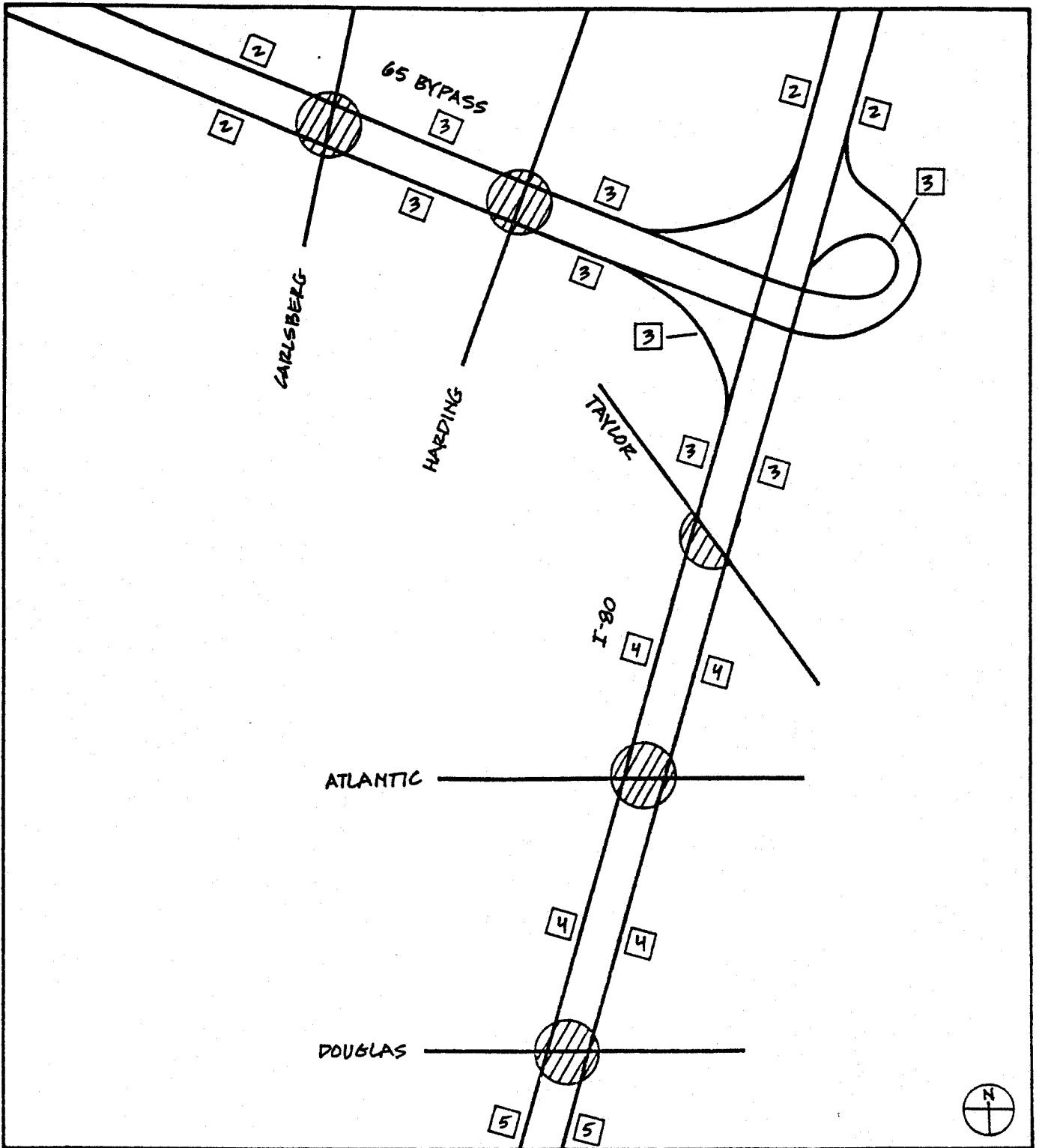


FIGURE V-8
LANE REQUIREMENTS FOR TRAFFIC DEMAND:
2005 WITH BUILDOUT OF 4 SPECIFIC PLAN AREAS
AND 1 OR 2 REGIONAL SHOPPING CENTERS

LEGEND
 □ LANE REQUIREMENTS
 BASED ON ULTIMATE
 CAPACITY

Additionally, some intersections have, or would have adjacent land uses that are incompatible with a grade separated interchange, and others may be located in places where the topography or limited right of way precludes the building of an urban interchange.

Four of the nine locations which were earlier shown to need grade separation improvements are considered to be undesirable locations for urban interchanges. These four intersections are:

1. Eureka & Taylor - Because of the surrounding topography (there is a steep ravine just east of Taylor Road), it would be extremely difficult from an engineering standpoint to grade-separate Taylor & Eureka.
2. Lead Hill & Harding - Due to existing development adjacent to this intersection (there is a residential complex west of Harding Boulevard) and its closeness to I-80, the construction of a fly-over ramp would not be a feasible improvement.
3. Sunrise & Cirby - Existing development on all four intersection corners make the construction of an urban interchange infeasible.
4. Foothill & Carlsberg - Anticipated development adjacent to the intersection would make the construction of an urban interchange undesirable.

Following discussions with City staff, an analysis was undertaken to investigate mitigation measures, other than constructing grade separation improvements, which would bring the v/c ratios at these four intersections to less than 0.80. The two types of mitigation measures investigated were Transportation System Management (TSM) and the prohibition of particular travel movements at intersections. Each of these items are discussed in more detail below. The impacts of these mitigations is reported for all nine intersections where urban interchanges have been suggested as possible mitigations.

TSM: Traffic impacts on Roseville roads can be reduced through TSM measures which encourage employees to rideshare and travel at times outside of the normal peak travel periods. Based on research conducted by Caltrans, the Institute of Transportation Engineers, and Fehr & Peers Associates, the traffic reductions which can reasonably be realized by these programs are as follows:

<u>Type of Employment</u>	<u>Peak Hour Trip Reduction</u>		
	<u>Ridesharing</u>	<u>Flex Time</u>	<u>Total</u>
Business - Professional	7%	4%	11%
Industrial (General or Light)	7%	9%	16%

Trip generation rates for B-P and industrial land uses in the North Central and Northwest Specific Plan Areas, as well as in the North Industrial area were reduced accordingly.

Turning Movement Prohibition: The Eureka & Taylor intersection is estimated to operate at a v/c ratio of 0.99 in the year 2005 assuming buildout of all four specific plan areas. Because the v/c ratio of 0.99 is substantially higher than the acceptable v/c threshold of 0.80, other measures to reduce the v/c ratio were investigated. One measure studied was the peak hour prohibition of left-turns from southbound Taylor Road to eastbound Eureka Road. The banning of this left-turn movement would divert traffic to the Roseville Parkway & Sunrise and Eureka & Sunrise intersections. Both of these intersections would have the capacity to handle the added traffic.

Results: TSM and the left-turn ban at Taylor & Eureka would have a positive effect on the intersection v/c ratios for the worst-case land use scenario; i.e. buildout of the four Roseville Specific Plan areas, two regional centers in the North Central Plan Area, and expected 2005 conditions elsewhere. The resulting v/c ratios are as follows:

<u>Intersection</u>	<u>Before TSM</u>	<u>After TSM</u>
Douglas & Sunrise	1.23 (1.00)*	1.19 (1.00)*
Cirby & Sunrise	0.83	0.79
Roseville Pkway & Taylor	1.17 (1.00)*	1.20 (1.00)*
Roseville Pkway & Harding	1.02 (1.00)*	0.99
Cirby & Riverside	0.89	0.90
Lead Hill & Harding	0.81	0.74
Eureka & Taylor	0.99	0.76 ¹
Foothill & Carlsberg	0.85	0.70
Roseville Pkwy & Carlsberg	0.87	0.85

¹ Also includes peak hour left-turn prohibition from Taylor (SB) to Eureka (EB).

F. Summary of Impacts and Mitigations

In previous sections of this chapter, traffic impacts and mitigations were presented and discussed under a variety of land use scenarios. This final section of the chapter summarizes the overall findings under these scenarios and compares them to one another.

Intersections: A summary of the intersections which would require mitigations to bring their v/c ratios to less than 0.80 is shown in Table V-7. The Douglas & Sunrise and Cirby & Riverside intersections would need grade separated improvements under all scenarios (including a "no-build" scenario for all specific plans). This holds true regardless of TSM impacts.

In all of the scenarios in which there is development in the Roseville Specific Plans (Scenarios B, C & D), grade separated improvements would be required at the Roseville Parkway & Harding intersection. This is in addition to the Douglas & Sunrise and Cirby & Riverside intersections. Grade separated improvements would not be needed at the Eureka & Taylor and

Table V-7

INTERSECTIONS WHICH WOULD REQUIRE MITIGATIONS

<u>Intersections</u>	<u>Scenario</u>					
	<u>A</u>	<u>B</u>	<u>C1</u>	<u>C2</u>	<u>D1</u>	<u>D2</u>
Douglas & Sunrise	X	X	X	X	X	X
Cirby & Sunrise	-	-	-	-	X*	X*
Roseville Parkway & Taylor	N/A	O	O	X	X	X
Roseville Parkway & Harding	N/A	X	X	X	X	X
Cirby & Riverside	X	X	X	X	X	X
Lead Hill & Harding	-	-	-	-	X*	X*
Eureka & Taylor	N/A	X*	X*	X*	X*	X*
Foothill & Carlsberg	N/A	X*	X*	X*	X*	X*
Roseville Parkway & Carlsberg	N/A	X	-	-	X	X
Baseline & Washington	N/A	O	O	O	O	O
Douglas & Rocky Ridge	-	-	O	O	O	O
Carlsberg & Washington	N/A	-	-	-	O	O

Description of Scenarios

- A - No development of four Roseville specific plan areas; expected 2005 development elsewhere.
- B - Buildout of Northwest Plan Area; expected 2005 development elsewhere.
- C1 - Buildout of North Central Plan Area with one regional shopping center in North Central Plan Area; expected 2005 development elsewhere.
- C2 - Buildout of North Central Plan Area with two regional shopping centers in North Central Plan Area; expected 2005 development elsewhere.
- D1 - Buildout of all four Roseville Specific Plan Areas with one regional shopping center in the North Central Plan Area; expected 2005 development elsewhere.
- D2 - Buildout of all four Roseville Specific Plan Areas with two regional shopping centers in the North Central Plan Area; expected 2005 development elsewhere.

Legend:

- Does not need mitigation
- O Mitigated with at-grade improvements
- X Mitigated with grade-separated improvements
- * TSM and peak hour turning movement prohibitions preclude grade separation improvements
- N/A Will not exist under that scenario

Foothill & Carlsberg intersections if TSM measures and the peak hour left-turn ban at Eureka & Taylor were implemented.

In addition to the five intersections listed in the paragraph above, grade separated improvements would also be required at the Roseville Parkway & Carlsberg intersection if the Northwest Plan were built-out, at the Roseville Parkway & Taylor intersection if the North Central Plan were built-out with two regional shopping centers, and at the Roseville Parkway & Taylor, Roseville Parkway & Carlsberg, Lead Hill & Harding, and Cirby & Sunrise intersections if all four specific plan areas were built-out. The latter two intersections, Lead Hill & Harding and Cirby & Sunrise, would not need grade separated improvements if TSM measures were implemented in the Northwest, North Central & North Industrial employment sectors.

The number of intersections which would require mitigations, both at-grade and grade separated, by scenario are shown in Table V-8. With expected 2005 development outside of the Roseville specific plan areas, grade separated improvements would be required at eight intersections if all four specific plans were built-out, six and five intersections if the North Central Plan were built-out with two and one regional shopping centers, respectively, and six intersections if the Northwest Plan were built-out.

TSM and peak hour turning prohibition would preclude the need for grade separation improvements at four intersections: Cirby & Sunrise, Lead Hill & Harding, Eureka & Taylor and Foothill & Carlsberg.

Freeways: On the 65 Bypass, two lanes per direction are required between Blue Oaks and Carlsberg Boulevard and three lanes between Harding Boulevard and I-80 under all scenarios. The section of the 65 Bypass between Carlsberg Boulevard and Harding Boulevard is the only one which differs in lane

Table V-8

NUMBER OF INTERSECTIONS WHICH WOULD REQUIRE MITIGATIONS

Scenario	No. of Intersections Which Would Require At-Grade Mitigations	No. of Intersections Which Would Require Grade-Separated Mitigations		Total No. of Inter- sections which would Require Mitigations	
		W/O TSM	With TSM ¹	W/O TSM	With TSM ¹
A	0	2	2	2	2
B	2	6	4	8	6
C1	3	5	3	8	6
C2	2	6	4	8	6
D1	3	9	5	12	8
D2	3	9	5	12	8

Description of Scenarios:

- A - No development of four Roseville specific plan areas; expected 2005 development elsewhere.
- B - Buildout of Northwest Plan Area; expected 2005 development elsewhere.
- C1 - Buildout of North Central Plan Area with one regional shopping center in North Central Plan Area; expected 2005 development elsewhere.
- C2 - Buildout of North Central Plan Area with two regional shopping centers in North Central Plan Area; expected 2005 development elsewhere.
- D1 - Buildout of all four Roseville Specific Plan Areas with one regional shopping center in the North Central Plan Area; expected 2005 development elsewhere.
- D2 - Buildout of all four Roseville Specific Plan Areas with two regional shopping centers in the North Central Plan Area; expected 2005 development elsewhere.

¹ Including peak hour left-turn prohibition at Eureka & Taylor.

requirements by scenario. With no development of the Roseville specific plan areas, two lanes per direction are required. With specific plan development of Scenarios B, C or D, three lanes per direction are required.

Traffic demand volumes dictate that the ramps connecting the 65 Bypass with I-80 south need to be three lanes wide, whether or not the Roseville specific plan areas are developed. This indicates that the 65 Bypass primarily serves North Industrial area in Roseville and the Northwest Rocklin area, including Stanford Ranch.

The lane requirements on I-80 from the 65 Bypass to Atlantic are the same under all scenarios. Three lanes per direction are needed from the 65 Bypass to Taylor road, and four lanes per direction are needed from Taylor Road to Atlantic.

The section of I-80 between Atlantic & Douglas would require three lanes per direction if there was no development of the Roseville Specific Plan areas, and four lanes per direction if there was specific plan development as in Scenarios B, C & D.

The section of I-80 south Douglas would need three lanes per direction in year 2005 if no development occurred in the Roseville Specific Plan areas; four lanes per direction if the specific plan areas developed to expected 2005 levels and either the North Central or Northwest Specific Plan areas were built out; and five lanes per direction if all four Roseville specific plan areas were built out.

Appendix A

Freeway Sensitivity Analysis & L.R. 102 Impact

Although the traffic model provided accurate estimates of peak hour traffic volumes on the Roseville arterials and intersections, the accuracy of the traffic volumes on the freeways, particularly the 65 Bypass, is questionable. For example, in Scenario A (No development in the four Roseville specific plan areas and expected 2005 development elsewhere), the number of jobs is substantially more than number of employable residents in areas north and west of the 65 Bypass, i.e. the North Industrial area of Roseville and the Northwest Rocklin area. To fill these jobs, the model imports workers from Sacramento and other established areas south of Roseville and thus adds a considerable load to the freeways. In reality, this may be unreasonable for two reasons:

1. Sacramento County itself is expected to have more jobs than employable residents in 2005, i.e. there will be no surplus of workers from Sacramento to fill Roseville and Rocklin jobs.
2. To provide the surplus of workers, new residential areas would need to develop. These new areas would most likely be located near the jobs, i.e. in areas north and west of Roseville. If this occurred, the 65 Bypass would not be a primary commuter route between the new residential areas and the North Roseville Industrial and Northwest Rocklin areas.

However, accepting for a moment, that the higher freeway volumes could occur, to study the worst-case impacts, this study performed a sensitivity analysis to see how the Roseville intersections would be impacted if the traffic demand on the 65 Bypass exceeded its capacity. Specifically, the study analyzed the congestion impacts of the ramp connecting the 65 Bypass to

southbound I-80 during the p.m. peak hour.

In the land-use scenario that had assumed buildout of the four Roseville specific plan areas, the equivalent of two regional shopping centers in the North Central Specific Plan Area, and expected 2005 development levels elsewhere, the p.m. peak hour demand on this ramp was 4,300 vehicles. The theoretical capacity of the ramp is 1,700 vehicles per lane or 3,400 per two lanes. If the ramp was widened to two lanes, the ramp demand would exceed its capacity by about 900 vehicles per hour. (In actuality, the demand would spread into the hours before and after the peak hour and the throughput capacity of the two-lane ramp would probably reach the 3,600 to 3,800 vehicles per hour.)

Assuming however, that the 900 vehicles would use alternative routes in the peak hour, the likely alternative routes would be:

- o About 50% would exit the 65 Bypass at the Harding interchange, travel south and access I-80 via the Atlantic interchange, or travel south on Harding and travel into the Northeast and Southeast Specific Plan Areas via Eureka or Lead Hill Roads.
- o About 25% of the 900 vehicles would come from the North Industrial area in Roseville and use Roseville Parkway as an alternative route to the 65 Bypass.
- o The remaining 25% would use various alternative routes throughout the area such as Taylor Road, Carlsberg Boulevard and Route 65.

Five intersections would be most negatively impacted by reassigned traffic onto Roseville streets due to congestion on the ramp connecting the 65 Bypass to southbound I-80. The intersections are:

1. Roseville Parkway & Harding
2. Roseville Parkway & Taylor

3. Roseville Parkway & Carlsberg
4. Lead Hill & Harding
5. Atlantic & Harding S.

All of these intersections were specified as needing grade separation improvements except for the intersection of Atlantic and Harding. At this T-intersection, a fly-over ramp would be needed to bring its v/c ratio to less than 0.80.

With grade separation improvements each of these intersections would possess the available capacity to handle traffic spill-over from the freeway.

Legislative Route (L.R.) 102 is a proposed freeway that would connect I-5 or State Routes 99, 70 in northwest Sacramento County with I-80 near Auburn. It would likely cross Baseline Road to the east of Roseville and Route 65 to the north of Roseville. Because of the uncertainty of its alignment and future existence, its impact on Roseville roads was not analyzed in this study. However, traffic impacts of L.R. 102 on Roseville roads were analyzed as part of the "South Placer County Transportation Study" prepared for Placer County Transportation Commission. According to that study L.R. 102 would not impact the 65 Bypass traffic volumes in Roseville, and would reduce traffic volumes on the I-80 segment south of Douglas Boulevard by about 15%.

A 15% reduction in peak hour traffic volumes on I-80 south of Douglas would change the lane requirements under 2005 conditions with buildout of North Central Specific Plan or buildout of all four Roseville specific plans from five lanes in each direction (see Figures V-6 and V-8) to four lanes in each direction.

**Northwest Roseville Specific Plan
Fiscal Analysis**



July 28, 1988

FISCAL IMPACT ANALYSIS OF THE
NORTHWEST ROSEVILLE SITE SPECIFIC PLAN

by

Cynthia E. Davis
Loren L. Parks

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SUMMARY

The proposed development encompasses 2679.3 acres in the area north of Baseline Road and west of Washington Boulevard, in the northwest portion of the City of Roseville. Of this area, 1,551.5 acres will be used for residential purposes; 117.6 acres for commercial retail businesses; 15.0 acres for commercial recreation purposes; 43.6 acres for business/professional offices; 44.5 acres for combined commercial business/professional purposes; 131 acres for parkland and 175 acres for a public golfcourse; 103.3 acres for schools, fire station, and electrical substation; and 497.8 acres for miscellaneous other uses (churches, floodways, open space, recreation corridor, and urban and park reserves). The mix of 8,194 new dwelling units includes 5,357 single family homes, 732 single family cluster units and 2,105 multi-family apartment units. Average values of these units are anticipated to range from \$50,000 to over \$350,000. Using the City estimates of 2.64 persons per low density dwelling unit (single family detached housing), 2.06 persons per medium density dwelling unit (single family attached housing), and 1.76 persons per high density dwelling unit (multi-family apartments), the development will generate an additional population of 19,355--a 56.35 percent increase over the State's estimate as of January 1, 1988.

The City of Roseville will collect revenues from and incur expenses for providing services to the new residents and businesses attracted to this area. The objective of this study is to estimate the net fiscal impact associated with the proposed development assuming no change in service levels, complete buildout under the proposed design, and constant dollars based on the 1988-89 Proposed Budget for the City of Roseville.

Results for the fiscal analysis indicate that the City will have a net annual surplus of approximately \$1,666,200. The principal revenue sources are property taxes which total \$2,019,300 per year including residential, commercial and unsecured property taxes and penalties; sales tax which totals \$3,932,300 annually for the new population and commercial development; utility users' taxes of \$762,100 annually; and motor vehicle and trailer coach in lieu fees of \$599,100 annually. Principal additional costs incurred by the City include net annual outlays of \$2,214,700 for police patrols and related activities; \$946,100 for operation of a new fire station in the northwest area of the City; \$584,600 for street and highway maintenance; and \$645,600 for maintenance and operation of new parks and recreation programming. Utilities, transportation services, the proposed public golf course, and other miscellaneous functions are self-supporting funds because of special tax districts or other revenue sources. Infrastructure for solid waste disposal, water, sewage disposal, storm drainage, and utilities are either adequate to absorb the additional development or planned for development as part of this plan, therefore no unreimbursed costs are predicted for these items.

Assuming continuation of the current household mix, the development would house 1,883 high school students attending schools in the Roseville Joint Union High School District, 2,490 elementary school (K-8) students attending schools in the Dry Creek Joint Elementary School District, and 693 students attending schools (K-8) in the Roseville City Elementary

School District. On-going costs associated with these students are assumed to be covered by property taxes accruing to the school districts and state subsidies for enrollment. Additionally, the districts are working with the City and the developers to implement Mello-Roos funding for capital costs which cannot be covered through mitigation fees paid by the developers or other funding sources presently available.

Although some development fees are uncertain or unknown at this time, the sum of known fees exceeds \$102 million. The largest items are traffic circulation fees (\$9.6 million), school and fire impact fees (\$24.5 and \$4.8 million respectively), and water connection charges (\$9.8 million). Additionally, known building permits and related fees which offset City operations total approximately \$19.7 million, and sewer connection fees are estimated to be in excess of \$23.5 million. Impact fees for parks (\$3.1 million), home improvement fees (\$0.5 million), refuse containers (\$0.5 million) are also an additional developer cost used to offset one-time city costs.

INTRODUCTION

The developers of the Northwest Roseville Plan propose to develop 2,679.3 acres of land west of Washington Boulevard and north of Baseline Road. The proposed design includes 8,194 residential units, commercial and business/professional acreage, and other miscellaneous uses including churches, a commercial recreation facility, park areas, and areas designated for use by fire, electrical utilities and schools. Assuming continuation of the current average population densities of 2.64 persons per low density dwelling unit (single family detached), 2.06 persons per medium density dwelling unit (single family attached), and 1.76 persons per high density dwelling unit (multiple family apartments), the development would house 19,355 persons including 3,183 elementary students (K through 8) and 1,883 high school students. New residents will generate additional revenues for the City as well as additional costs for services provided. The objective of this study is to estimate the net fiscal impact of the proposed development on the City of Roseville government.

The proposed development consists of 2,105 apartment units, 732 cluster units, and 5,357 single family homes on 1,551.5 acres. The array of dwelling units, market values, and other land uses shown in Table 1 indicates combined lot-plus-home values from \$50,000 to \$350,000. Residential market values reflect fully developed areas with streets, lights and other amenities. Residential values reflect the value of land owned in common, hence no separate market value is attributed to those areas.

Retail commercial development is proposed for 117.6 acres with an estimated 1,280,700 square feet of building space. The market value is estimated to be \$121.7 million assuming \$95 per square foot of finished floor space including land and site improvements. Neither the number nor design of commercial units is yet available, although the development is expected to include such businesses as a junior department store, a discount drug store, a variety store, a supermarket, convenience stores, a restaurant and/or coffee shop, barber/beauty shops, and a dry cleaners. In addition, 40.5 acres of land are designated for business/professional offices with an estimated 617,500 square feet of building space. The market value is estimated to be \$52.5 million assuming \$85 per square foot of finished floor space including land and site improvements. Again, neither the number nor design of office units is yet available. Other designated land uses include: 15 acres for a 20,000 square foot commercial recreation facility (racquet club); 44.5 acres for combined commercial and business/professional purposes; 8.4 acres for churches and 3.1 acres for a private school; 306 acres for new park land, including 175 acres for a public golf course; 460.9 acres for urban and park reserves; and 131.8 acres for schools, a fire station, an electrical substation, floodways and a recreation corridor.

METHODOLOGY

Methodological Approach

Methodological assumptions underlying the approach are as follows:

1. The analysis seeks to isolate the fiscal differences that would exist with and without the development once all construction is complete and occupied. Temporary impacts due to construction activity, for example, are ignored. Furthermore, no consideration is made of time lags between incurring costs and receiving revenues such as might occur with subventions from the State of California.
2. Cost and revenue projections are based on the City's 1988-89 Proposed Budget. Actual costs and revenues will differ from projections. Monetary amounts are expressed in current dollars.
3. Constant levels of service provided by the City are assumed. For example, if street maintenance is currently inadequate due to lack of funds the same level of service is assumed once the development is completed. Similarly, no degradation of service is allowed in the analysis.
4. Either the "average approach" or the "marginal approach" is used to forecast revenues and costs depending on the appropriateness and the amount of information available with which to make an estimate. The "average approach" typically involves extending the current per capita revenue or operating cost by the estimated increase in population. This approach tends to overestimate additional costs because the fixed cost components of operating costs often are unaffected by a slight increase in population. The average approach tends to be more accurate in revenue forecasting than cost forecasting; nearly all State subventions are based on population. The "marginal approach" quantifies the revenues or costs associated with a particular item, such as additional police officer and patrol car. The marginal approach employs interviews with department managers to determine exactly what is needed to serve a specific number of people at the same level of service and, when possible, in a particular area.
5. The analysis does not address the impact of the growing industrial and office employment centers adjacent to the plan area.

Numerical Base

Baseline numbers for calculations are as follows:

1. Roseville population (34,350) and dwelling units (14,011) are based on California Dept. of Finance estimates for January 1, 1988.
2. City urban acreage is based on the City of Roseville Planning Department's 1985 estimate of 4120.5 developed acres of residential (2380 acres), business/professional (57.5), commercial (663 acres), and light and general industrial (570 acres) zoned property. This estimate has not been updated recently, therefore a 15 percent growth factor over the

past two years is assumed to derive an adjusted current urban acreage estimate of 4,739 developed acres.

3. Current city maintained street miles (159.7) are based on the City of Roseville Public Works Department figures for January 1, 1988.

4. Current city park acres (280.81) exclude the municipal golf course and city owned and/or maintained bike trails, roadside openspace, streambeds, etc., and are based on the City of Roseville Parks and Recreation Department information.

5. Four residential developments (163.5 acres and 921 dwelling units at build-out) are largely constructed and occupied at this time. Therefore, although they are considered a part of this specific plan area, the costs and associated revenues have already been incurred by the City. Additionally, five residential developments (219.8 acres and 1006 dwelling units at build-out) plus one commercial development (12.4 acres) are presently under construction and are partially occupied, therefore the City has received the majority of the development fees associated with these sites and incurred some portion of the expected costs. Due to the small proportion of these developments to the entire northwest plan area, the already realized revenues and expenditures are not separated out for special consideration in this analysis.

REVENUES

Property Tax

A principal revenue increase for the City will be property tax on new homes and businesses. The maximum property tax is one percent of total assessed valuation unless there are outstanding bonds approved prior to Proposition 13. The equivalent tax rate allocated to the City of Roseville is 0.1758 for the 1988 calendar year.

Residential

The developer estimates that there will be a mix of residential housing ranging in value from \$50,000 per unit for apartment complexes to \$350,000 for estate homes. Of the 8,194 total dwelling units, it is planned that 2,105 will be multi-family apartment units, 732 will be cluster (single-family attached units), and the remaining 5,357 will be single family detached homes. Calculation of residential property tax is shown in Table 1.

The current assessed value (\$59,995,000) has been subtracted from the estimated new (developed) assessed value to accurately reflect the net increase to be expected from this development.

Commercial

An increase in commercial property taxes will occur due to new commercial and business/professional construction associated with this development. The value of new commercial retail space is obtained by assuming a value of \$95 per square foot including land value and site improvements. The value of new business/professional space is obtained by assuming a value of \$85 per square foot of building space including land value and site improvements. The value of the combined commercial-business/professional space is obtained by assuming an average value of \$90 per square foot of building space, while the churches and private school values are assumed based on building values of \$70 per square foot, with anticipated tax exemptions of 95 percent and 50 percent respectively. Values for the racquet club were assumed based on building values of \$105 per square foot.

Results

Net residential property tax receipts to the City are predicted to increase about \$1,545,900 annually, and commercial property tax increases are predicted to increase \$388,100. A total of 898.7 acres of property are either exempt from property taxes, are included as common area within the market value of residential or commercial property, or are not planned for development at this time (urban and park reserves).

TABLE 1

SUMMARY OF LAND USE AND PROPERTY TAX CALCULATION

Residential	Gross Acres	Estimated Value/Unit	No. of Units	New Value on Roll
Single Family	1219.7	\$350,000	26	\$ 9,100,000
		275,000	28	7,700,000
		200,000	1,012	202,400,000
		155,000	1,144	177,320,000
		135,000	1,568	211,600,000
		115,000	1,260	144,900,000
Single Family Att.	122.3	105,000	150	15,750,000
		75,000	582	43,650,000
Mult. Family Apts.	145.2	60,000	84	5,040,000
		50,000	2,021	101,050,000
Mobile Home Park	64.3	65,000	319	20,735,000
Total	1551.5		8,194	\$939,325,000

Value Currently on 1987-88 Roll (59,995,000)

Net Residential Property Tax\$1,545,900

Commercial	Acres	Value/SF	Est. SF	New Value on Roll
Retail Space	117.6	\$ 95	1,280,700	\$121,663,000
Bus/Prof. Offices	40.5	85	617,500	52,484,000
Bus/Prof. Commercial	44.5	90	484,600	43,614,000
Comm. Recreation	15.0	105	22,000	2,310,000
Church/Priv.School	11.5	70	101,500	7,103,000
Totals	229.1			\$227,175,000

Less anticipated exemptions (church & private school) (6,433,000)

Commercial Property Tax \$388,100

Other Property

Fire Station	1.0 acres
Public Schools	101.8
Elec. Substation	.5
Parks & Golf Course	306.0
Floodways/Openspace	28.5
Urban & Park Resv.	460.9

Totals 898.7

Total Estimated Property Tax \$1,934,000

TABLE 2
 PROJECTED ANNUAL REVENUES AND EXPENDITURES
 FROM THE NORTHWEST ROSEVILLE DEVELOPMENT

Item	\$ Thousand
<hr style="border-top: 1px dashed black;"/>	
<u>Revenues</u>	
Property Tax	
Residential	\$ 1,545.9
Commercial	388.1
Unsecured	77.4
Penalties	7.9
Property Transfer Tax	64.3
Sales and Use Tax	3,932.3
Hotel and Motel Tax	93.0
Utilities Users' Tax	762.1
Franchises	51.0
Business License Tax	74.9
Fines	116.7
Motor Vehicle In-Lieu	585.0
Trailer Coach In-Lieu	14.1
Cigarette Tax	72.1
Construction Permits & Development Fees	1,468.5
Other Miscellaneous Revenues	72.1

Total Annual Revenues	\$ 9,325.4
<u>Expenditures</u>	
General Government	\$2,170.9
Public Safety	
Police	2,214.7
Fire	946.1
Other Public Safety	24.2
Public Works and Planning	
Public Works Department	878.5
Planning & Other Related Functions	433.0
Library	346.2
Parks and Recreation	645.6

Total Annual Expenditures	\$ 7,659.2
Annual Net Revenues	\$ 1,666.2

 Source: Analytics Company

Unsecured Taxes and Penalties

Unsecured property taxes and penalties on delinquent tax payments are estimated on a constant per capita basis. Unsecured taxes are estimated to increase \$77,400 and penalties are estimated at \$7,900 for the new population.

Property Transfer Tax

Property transfer tax is collected at a rate of \$.275 per \$500 value for property conveyed within City limits. Extension of this revenue by the increase in dwelling units yields an annual increase of \$64,300. Commercial property, historically lower in the turnover rate relative to residential units, is anticipated to maintain the same proportion of tax revenue relative to residences.

Sales and Use Tax

One percent of all taxable sales within the City are received as revenue from the sales tax. Because the City of Roseville has a disproportionate mix of retail and automotive expenditures, the current sales tax revenue is reduced by the amount (42 percent) attributable to automotive sales. The balance is used to derive a per capita retail sales tax figure, to which is added the 1986-7 State-wide per capita amount of sales tax revenue from automotive related sales (\$10.44). The adjusted per capita sales tax figure for Roseville residents is \$113.55, which in the aggregate generates an estimated \$2,197,800 in new sales and use tax from the development (Table 3).

Additionally, new revenues are anticipated to result from the increase in commercial space through reduction of leakage to surrounding communities and through provision of an increased selection consumer goods to residents of the total Roseville market area. Assuming taxable sales per square foot of building space of between \$105 and \$134 for commercial retail space, no taxable sales for business/professional space, \$4 for commercial recreation facilities, and between \$60 and \$77 for combined use commercial-business/professional centers, generates anticipated new sales tax revenues of \$1,734,500 annually (Table 3). Proportion of taxable sales is based on unpublished estimates from the State Board of Equalization, with the assumptions that: 5 percent of commercial recreation space was devoted to retail sales (pro shop, fast food, etc); and rates of taxable sales are estimated at 70 percent of total sales for retail centers, 40 percent for combined commercial/business-professional centers, and 90 percent for actual commercial recreation retail space. The majority of business-professional uses have no taxable sales.

TABLE 3

SALES TAX REVENUE

New Taxes Generated by Population Increase

1988-89 Sales Tax Estimated Revenue	\$6,099,000
Less Automotive Sales (42%) ^a	-2,557,250
Non-Automotive Retail Sales	\$3,541,750
Divided by City Population	34,350
Per Capita Sales Tax for Retail Sales	\$103.11
Plus 1986-7 City Share of Statewide Automotive Per Capita ^a	10.44
Adjusted Roseville Sales Tax per Capita	\$113.55
Multiplied by New Population	19,355
Estimated New Sales Tax from Population Increase	\$2,197,800

New Taxes Generated by Commercial Development

Type of Use	Est. Sq.Ft.	Median Sales - \$/sf ^b			Est. New Taxable Sales
		1982 US	Adjusted	Taxable	
Commercial Retail	1,280,700				
Community Centers	1,004,100	\$116.34	\$149.97	\$104.98	\$105,408,000
Neighborhood Centers	276,600	149.05	192.14	134.50	37,203,000
Commercial/Bus-Prof.	484,600				
Community Centers	384,400	116.34	149.97	59.99	23,061,000
Neighborhood Centers	100,200	149.05	192.14	76.86	7,700,000
Commercial Recreation	22,000	3.18	4.09	3.68	81,000
Bus-Prof. Offices	617,500	0	0	0	0
Total Commercial Taxable Sales					\$173,454,000
Estimated New Sales Tax from Commercial Development					\$1,734,500
Total Estimated New Sales Tax					\$3,932,300

Source: State Board of Equalization (Research Office), and the Analytics Company

^a Automotive sales as a proportion of total sales, and statewide automotive per capita are based on 4th quarter 1986, and 1st, 2nd and 3rd quarters of 1987.

^b Assumptions for Median Sales are taken from Dollars & Cents of Shopping Centers: 1984, The Urban Land Institute, adjusted by a 17 percent Consumer Price Index factor for inflation since the 1982 survey and a 10.2 percent geographic increase because stores in the Far West have higher average sales than the overall United States averages.

Hotel and Motel Tax

Estimates of new revenues to be generated through Hotel and Motel Taxes are based on a per capita figure. It is anticipated that new revenues of \$93,000 will be generated on an annual basis at the current 6 percent room tax rate.

Utility Users Tax

Utility User Taxes are paid by users at the rate of 5 percent of individual, gas, electric and telephone bills. It is estimated, based on the ratio of new developed acres, that \$762,100 additional revenues will be generated annually.

Franchise Taxes

Franchise taxes are paid by purveyors of cable television and Pacific Gas and Electric Company. Increased revenues are based on the proportionate increase in developed acres, estimated at \$51,000 annually.

Business Licenses

Additional revenues are anticipated from business licenses. Estimated annual increases are estimated to be \$74,900 from business licenses based on the increase in developed acres within the City. Total developed acres are used in this revenue estimate since it is assumed that residential population will trigger home businesses and induced businesses at the same rate as other developed areas within the City, and that commercial and business/professional development in the plan area will be proportionate to existing development within the City.

Fines

The City receives revenue from vehicle code fines, parking violations and other court fines for offenses and citations issued within the City limits. As a result of this development, additional revenues of \$116,700 are predicted on a constant per capita basis.

State Subventions and Revenue Transfers

The City receives revenues from the State for a variety of programs. Revenue transfers from other City funds are considered as offsets to departmental expenditures and therefore not discussed independently in this analysis.

Motor Vehicle and Trailer Coach In-Lieu

Motor vehicle and trailer coach taxes are levied by the State in lieu of a personal property tax. Motor vehicle license fees are distributed to cities and counties according to two sections of the Revenue and Taxation Code. Section 1105-A provides for 81.25 percent of such funds to be allocated half to counties and half to cities. Payment to cities is based on each city's population to all city populations. Section 1105-B mandates allocation of 18.75 percent of the Motor Vehicle License Fee Account to cities that did not levy property taxes in 1977-78, and to all counties.

The complexity of assumptions and calculations required to exactly determine future revenue from this source is so complex that a close approximation is used instead--extension of current per capita revenues by the projected population increase. This would generate additional annual revenues of \$585,000 for Motor Vehicle In-Lieu payments and \$14,100 for Trailer Coach In-Lieu payments.

Cigarette Tax

Prior to 1988-89, Cigarette Taxes were dedicated to capital expenditures and had no impact on the General Fund. Commencing with the 1988-89 fiscal year, these revenues are recommended for use by the General Fund operating budgets. Therefore, based on a per capita extension, anticipated new revenues are projected at \$72,100 annually.

Gasoline Tax and Transportation Development Funds

The City receives a proportion of Gasoline Taxes from purchases within the City limits. Annual increased revenues of \$254,500 are anticipated based on a per capita extension. These funds are deposited in the Gas Tax Fund for use in street maintenance and improvements.

Additionally, Transportation Development (SB325) funds are allocated to the City for transit purposes. Annual increased revenues of \$338,100 are projected on a per capita basis. Transportation Development Funds are dedicated to local transit expenditures (RADAR/RUSH and Commuter Service), and therefore have no direct impact on the General Fund.

Construction Permits and Development Fees

The City receives revenue from individual builders and developers for construction permits, building inspection fees, engineering inspection fees, plan check fees, and map checking and planning fees. These fees serve as offsets for expenditures incurred in providing services, however the fees are shared by several divisions and departments within the City General Fund, as well as overhead costs of City operations. Therefore, they are not included as offsetting revenues for any City departments. Using an extension based on new developed acres, anticipated new revenues from these sources is estimated to total \$1,468,500 annually.

Other Miscellaneous Revenues

There are several "catchall" accounts for miscellaneous revenues derived from service fees. These include such accounts as: rental/concession fees, assessment district fees, other licenses and permits, other taxes, miscellaneous fees, other revenue, and miscellaneous sales. In these cases, revenues are predicted by extending current per capita revenues by the net increase in population. Anticipated new revenues are \$72,100 annually.

Other reimbursements for service, such as animal licenses, building permits, development fees, and library and recreation fees are considered offsets to specific departmental expenditures. For those departments, costs are extended on a net basis.

Interest Earned on Investments

Based on a proportionate increase in General Fund expenditures, Interest Earned on Investments would generate an additional annual revenue of \$130,700 for the General Fund assuming the current investment ratio and interest rates. Because this revenue can fluctuate significantly depending on factors other than development, this revenue has not been included in the net surplus shown in Table 2. However, if it were considered as a revenue source from this development, the net annual surplus would increase from \$1,666,200 to \$1,796,900.

EXPENDITURES

General Government

The City of Roseville has seven departments which can be considered general government: Finance, City Manager, City Council, Personnel, City Attorney, Purchasing and the City Clerk. Although the impact of this development will be significant on city government as a whole, it is not anticipated that growth in the general government area will consistently be in the same proportion as population growth. Therefore, projected increases in expenditures were based either on a straight per capita extension of costs, a proportionate increase in the total General Fund budget, proportionate increases in developed acreage or dwelling units, or on a one-quarter of per capita cost basis. Based on these various methodologies, anticipated net annual costs for these seven departments are \$2,170,900 (Table 4).

A straight per capita projection is used for projecting costs for Risk Management. A one-quarter per capita extension is used for the City Clerk, Licensing, Public Information Operations, City Council, City Manager, Management Information Systems, Finance Administration, City Attorney, and Personnel budgets, as well as the Non-Departmental expenses for Elections and Employee Insurances.

Finally, the proportionate increase in General Fund expenditures is used to project increased costs in General Accounting, Purchasing/Stores, and Non-Departmental Expenditures such as Central Stores, General Liability Insurance, Central Reproduction, and Vehicle Replacement.

Utilities Accounting, Mechanical Maintenance, Community Promotions, and Investments are assumed to have no impact on the City General Fund as a result of development within the northwest plan area. CATV (Local Cable Programming) is funded through franchise fees collected from cable television providers.

Public Safety Costs

Public safety encompasses a variety of activities such as police and fire protection as well as animal control, weed abatement, emergency medical services, and civil defense services.

Police

The City of Roseville Police Department expects to hire 26.5 additional officers and 12.7 additional support staff to serve the increase in population while maintaining their existing one sworn patrol officer per 904 population ratio. At a fully burdened annual cost of \$60,000 per sworn officer and \$30,000 per support staff (plus eight vehicles at \$16,500 each), the annual cost increase will be \$2,214,700. The development of a police substation in the plan area is not anticipated at this time.

TABLE 4

PREDICTED ANNUAL INCREASES IN GENERAL GOVERNMENT EXPENDITURES
DUE TO THE NORTHWEST ROSEVILLE DEVELOPMENT

City Clerk	\$ 24,900
Licensing	20,400
General Accounting	116,300
Public Information Operations	9,600
City Attorney	23,900
Management Information Systems	54,900
Personnel	36,300
Purchasing/Stores	52,500
Risk Management	46,600
City Council	2,400
City Manager	32,500
Finance Administration	54,000
Non-Departmental Expenditures	1,590,700
Elections	2,900
Employee Insurances	103,000

Total	\$2,170,900

Fire Protection

The William E. Jensen Memorial Fire Station #2 has been constructed on a one-acre site on Junction Boulevard in the northwest plan area. Fire Service Taxes paid on new construction provided for the construction of this facility. However, annual ongoing operational costs for staff and equipment are estimated to increase \$811,500 based on current operating costs for two outlying stations and the Main Downtown Station. Fire Training, Fire Prevention and Emergency Medical Services are anticipated to increase at a rate of 75% of the per capita rate over the long term, for an increase of \$98,400. Additionally, Fire Administration is projected to increase at a rate of one-half the proportionate increase in overall department expenditures, for an annual increase of \$36,200. Total anticipated net annual costs are \$946,100.

Other Safety

The police department provides for animal control services. This is extended on a one-half per capita basis for an net annual increase in costs of \$24,200. Additionally, weed abatement and civil defense functions are provided by the fire department. These functions are not expected to be significantly impacted as a result of this development.

Public Works and Planning Costs

This area of public government is especially population and development sensitive. Included in this area are Engineering, Building Inspection, Street Maintenance, Street Light and Signal Maintenance, Building Maintenance, Utilities, Local Transportation, and Planning. Total increased costs are estimated at \$1,311,500 annually. Offsetting development fees and construction permits are discussed under the Revenues section.

Public Works Department

Operating costs for the development sensitive department of public works are extended on a one-half per new developed acre for Engineering, and a per new street mile extension for Street Maintenance, assuming 60.2 new street miles in the plan area. Public Works Administration is anticipated to increase at one-half of the proportionate increase to these direct costs. Utilities Administration, capital construction costs, and City operated utilities (electric, water, sewer, solid waste) are either offset by fees for services or are not included in the General Fund. Therefore no net increases are projected in these areas. The net cost increase for this department is estimated at \$878,500.

Other Public Works Functions

One-half the proportion of newly developed acreage is used to estimate costs for the Planning Department and Building Inspection. Street Lighting and Signal Maintenance are projected using the increase in new street

miles. Building Maintenance costs are predicted on a one-quarter per capita basis as with other General Government/support departments. Projected net cost increases for these functions is anticipated to be \$433,000 on an annual basis. Local Transportation, Utilities, and Mechanical Maintenance (City vehicles) are funded through non-General Fund revenues or inter-fund transfers, therefore having no direct impact on the General Fund.

Library

The City Library is funded through general revenues and service fees. There are plans to build a new branch library within the city-wide park at the intersection of Pleasant Grove Boulevard and Cook-Riolo Road included in the northwest plan, however the branch would serve the whole north area of the city. On-going costs for operations are extended on a per-new-library-user cost basis, using the Library estimate that 80 percent of the new population will use the library. Net increased annual costs are thereby estimated at \$346,200.

Parks and Recreation

The City currently maintains 280.81 acres in 16 designated parks, including open space areas, a swimming pool, and recreation programs. Additionally, the City maintains roadside openspace, creeks, ditches, bike trails, and street trees within city limits. These operations are funded out of the general fund and augmented by charges for services.

Park and Landscape Maintenance cost increases are predicted on a per new park and open space acre. Park Security cost increases are projected on a basis of new developed park acreage. Tree Maintenance cost increases are based on 35 percent of the total new developed acreage, and Streambed Maintenance cost increases are projected on a basis of total new parks, open space and miscellaneous residential acres since the Parks Department provides these services for the entire city, not just park areas.

Recreation Programs, Aid to Youth Leagues, Aid to Senior Programs, and Aquatics Programs cost increases are projected on a one-half per capita basis. Child Care programs are considered self-supporting through fees and therefore have no net impact on the City costs. Parks Administration cost increases are projected at one-half of the proportionate overall department cost increase.

In addition to the General Fund services provided by the Parks and Recreation Department, the City owns and operates the Diamond Oaks Municipal Golf Course as a separate, revenue supported enterprise fund. It is anticipated that the proposed 175 acre golf course within the northwest plan area will be operated on the same basis, thereby having no net impact on the General Fund.

Total anticipated increases in the Parks and Recreation Department are projected at \$645,600 annually.

CAPITAL COSTS

The City has contracted with Angus McDonald & Associates for completion of a Public Facilities Financing Plan to specifically identify needs and financing alternatives for capital improvements triggered by buildout of the various plan areas. Based on progress reports to date, several capital improvements will be required with the substantial development expected over the next several years, of which the northwest area is only one part. Improvements for all facilities, including General Fund operations, which have been identified at this time are estimated to cost in excess of \$393.4 million dollars, of which approximately \$176 million can be financed through existing fees. The remaining \$217.4 million must be financed through Mello-Roos or other bonds, state funding or grants, increased fees or levies through special benefit assessments, or through reserves accrued by the City for construction purposes.

Improvements that will specifically benefit the residents of the northwest plan area, and which are triggered at least partially, by the buildout of this area include: a proposed branch library to serve the whole north area, at a cost of approximately \$1.2 million for a facility similar to the new Maidu branch library in southeast Roseville; land acquisition and development of the several park sites and municipal golf course included in the northwest plan; acquisition of transit vehicles to serve the new population and commercial development; road construction and widening projects for the northwest area; and construction or expansion of existing wastewater treatment facilities, and water treatment and pumping facilities.

Additionally, the city anticipates a need for expansion of the existing corporation yard, expansion of the existing Public Safety building or construction of a new Public Safety building, and construction of a third building in the City Hall vicinity to house new employees as the City grows. At this time, to provide services to a total population of 90,000, expansion of various administrative facilities is expected to cost approximately \$14.8 million, while expansion and remodeling of the Public Safety building is projected to cost \$3.5 million.

Also addressed in the draft Financing Plan is the construction of new schools necessitated by the City's growth. Costs for land acquisition and construction of school facilities range from approximately \$10 million for an elementary school, to \$15 million for an intermediate school, and \$40 million for a high school facility. Support facilities for the schools such as busses, district administration facilities, and garage and warehouse facilities are in addition to actual school construction costs.

SCHOOLS

The Northwest Roseville area is proposed to contain 8,194 dwelling units which will generate an estimated 2,490 elementary students (K through 8) in the Dry Creek Joint Elementary District, 693 elementary students in the Roseville City Elementary District, and 1,883 high school students in the Roseville Union High School District based on current yield rates for the respective districts (Table 5). State subsidies and property tax revenues are anticipated to provide funding for ongoing costs at the current level of service for operation of facilities and students needs.

Developer fees on new construction will generate approximately \$11.24 million dollars for the Dry Creek Joint Elementary District, \$3.66 million dollars for the Roseville City Joint Elementary District, and \$9.62 million for the Roseville Union High School District in one-time revenues. Additionally, the school districts are working with the City and the developers to designate approximately 89.6 acres of land for three future elementary (K-6) school sites, one intermediate (7-8) school site, and one high school site to accommodate these new students, and to explore additional financing alternatives, such as Mello-Roos Act bonds, for construction of facilities and necessary support services, such as school busses, library and athletic facilities, administration facilities, cafeterias, and multiple use facilities. Approximately 47 acres in park sites are planned contiguous to proposed school sites to augment designated school acreage.

TABLE 5
 ANTICIPATED IMPACT ON THE SCHOOL DISTRICTS
 WITHIN THE NORTHWEST ROSEVILLE PLAN AREA

	Dry Creek Elementary -----	Roseville Elementary -----	Roseville High School -----	Total -----
Projected Student Yield	2,490	693	1,883	5,065
Current Capacity	221	4,265	3,334	7,820
Current Enrollment	309	4,137	3,522	7,968
Avail. Space	(88)	128	(188)	(148)
Projected Classrooms Required ^a	89	24	71	184
Projected New School Sites Required ^b	4.2	1.0	1.3	6.5
Projected Acreage for New Sites ^c	52.0	14.5	56.5	123.0

 Sources:

Proposed Mello-Roos Tax Plan for Roseville Jt. Union High School District, Roseville City School District, Eureka Union School District, Dry Creek Jt. Elementary School District

School Component Draft and EIR, Public Services and Facilities Element, City of Roseville General Plan; amended December 1986.

^a Projected classrooms based on individual district policy regarding number of students per classroom, as indicated in the Roseville General Plan, School Component, 12/86: Dry Creek Elementary, 28 students per classroom; Roseville City Elementary, 29 students per classroom; and Roseville Union High School, 26.5 students per classroom.

^b Projected school sites based on city-wide policy regarding number of students per school site, as indicated in the Roseville General Plan, School Component, 12/86: Elementary Schools (K-6), 600 students per site; Intermediate Schools (7-8), 850 per site; and High Schools, 1500 students per site.

^c Projected acreage is based on city-wide policy regarding acres per student by type of facility, as indicated in the Roseville General Plan, School Component, 12/86: Elementary Schools (K-6), .02 acres per student; Intermediate Schools (7-8), .024 acres per student; and High Schools (9-12), .03 acres per student.

DEVELOPER'S FEES

According to the City of Roseville Development Fee Schedule, the developer of the Northwest Roseville Plan will incur a total outlay in excess of \$102.2 million upon full buildout (Table 6). Some fees are yet unknown. Since these fees represent one-time payments they are not included in calculation of annual fiscal impacts summarized in Table 2.

Total commercial fees identified at this time are \$5.41 million and residential fees thus far have been identified totalling \$96.75 million. Fees which are still unknown or incomplete at this time include water connection fees, electrical underground fees, electric street light fees, encroachment and grading permits, and subdivision map fees. Based on the final design of commercial property, additional refinement of all fees must be completed.

The largest items are Sewer & Regional Sewer Fees (\$23.5 million), Fire Taxes and Fire Services Contract Fees (\$4.8 million), Traffic Circulation Fees (\$9.6 million), school mitigation fees (\$24.5 million), and Strong Motion Taxes (\$5.9 million). Engineering fees and construction inspection permits designed to offset City costs are estimated at \$19.7 million at this time.

TABLE 6
SUMMARY OF DEVELOPER'S FEES ASSOCIATED WITH
NORTHWEST ROSEVILLE DEVELOPMENT

Item	Commercial	Residential	Total
Building Permit	\$263,400	\$ 4,429,200	\$ 4,692,600
Plan Check Fee	171,200	4,253,800	4,425,000
Energy Plan Check Fee	85,600	64,600	150,200
Sewer Connection Fees	2,151,500	21,304,400	23,455,900
Water Connection Fee	unknown	9,768,600+	9,768,600+
Traffic Circulation Fee	1,278,800	8,355,100	9,633,900
Fire Tax Fee	639,400	n/a	639,400
Fire Services Contract Fee	n/a	4,177,600	4,177,600
Parking Fee	179,000	54,500	233,500
Strong Motion Tax	19,200	5,848,600	5,867,800
School Mitigation Fee			
Roseville High School Dist.	250,600	9,373,600	9,624,200
Dry Creek Elem. School Dist.	227,000	11,016,800	11,243,800
Roseville City Elem. Sch. Dist.	149,000	3,512,300	3,661,300
Home Improvement Fee	n/a	545,900+	545,900+
Park Tax Fee	n/a	3,126,800	3,126,800
Electrical Underground Fee	n/a	unknown	unknown
Electric Street Light Fee	unknown	n/a	unknown
Encroachment Permit	unknown	10,285,600+	10,285,600+
Grading Permit Fee	unknown	n/a	unknown
Tentative Subdivision Map	n/a	10,400+	10,400+
Final Subdivision Map	n/a	2,300+	2,300+
Traffic Signal Equip. Fee	n/a	126,000+	126,000+
Refuse Container Fee	unknown	491,600	491,600+
Est. Taxes/Fees Paid by Developer	\$5,414,700	\$96,747,700	\$102,162,400
Est. Taxes per Comm. Sq.Ft.	\$2.16		
Est. Taxes per Res. Dwelling Unit		\$11,807	

+ Indicates additional fees unidentified at this time.

Source: Analytics Company

CONTACTS AND REFERENCES

City of Roseville

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Gregory Cowart	Chief, Police Dept.
Steve Dillon	Planning Director
Phil Ezell	Director, Finance Department
Anthony Fink	Chief, Fire Dept.
Ron Hayes	Crime Prevention Officer, Police Dept.
Robert Hutchison	City Manager
Jerry Jackson	Asst. Dir. for Utilities, Public Works Dept.
Allen Johnson	Administrative Services Director
Dave McIntyre	Engineering Division, Public Works Dept.
Sue Nickerson	City Librarian

Other Agencies

Yvonne Basque	Asst. Auditor, County of Placer
James Bush	Facilities Planner, R'ville City Elem. Sch. Dist.
Census/Data Div.	State Dept. of Finance
Kelvin Lee	Superintendent, Dry Creek Elem. School District
Bob Rossi	State Board of Equalization, Research Office
Kenneth Sahl	Superintendent, Roseville Union H. S. District

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**Northwest Roseville Specific Plan
Archaeological Assessment**



**CULTURAL RESOURCE INVENTORY AND EVALUATION OF
RICH, SHENKER, AND CARLSBERG PARCELS,
ROSEVILLE, PLACER COUNTY, CALIFORNIA**

For

Carlsberg Constructors, Inc
1398 Blue Oaks Road
Roseville, California 95678

FINAL REPORT

January, 1986

By

Public Anthropological Research
P.O. Box 160756
Sacramento, California 95816-0756

Authors:

James Gary Maniery. M.A.
Mary L. Maniery, M.A.

MANAGEMENT SUMMARY

Carlsberg Constructors, Inc, (hereafter referred to as Carlsberg) a subsidiary of Carlsberg Corporation, proposes to develop an estimated 2,052 acres of land in northwest Roseville, California. The acreage is divided into three parcels: Rich, Shenker, and Carlsberg (also known as Northwest Roseville Specific Plan). Proposed development includes a retirement community, residential areas, and a golf course.

As part of the environmental planning process for the project, Carlsberg initiated a cultural resources investigation to identify, evaluate, and provide a management plan for any potentially significant cultural resources that may be impacted by the proposed project. The cultural resources investigation was conducted in December 1985 and January 1986, in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended in 1985). The work was completed under a contractual agreement between Public Anthropological Research (PAR) and Carlsberg.

A record search at the California Archaeological Sites Inventory, North Central Information Center, in Sacramento, California, indicated that one previously-recorded historic site (CA-Pla-428H) and several historic and prehistoric isolated artifacts were located within the project area. Other isolates (or activity areas) and one prehistoric site (CA-Pla-423) were located adjacent to three parcels under investigation. No further cultural resource management is recommended at these previously recorded sites.

The current inventory resulted in the location and recordation of eight new isolated artifacts (four prehistoric and four historic), updating site CA-Pla-428 (partially located within the project area), and several recent alterations to the landscape (e.g., modern trash dumps, abandoned automobiles, farm equipment). No unique or significant cultural resources were identified on the surface of the three parcels and no further cultural resource management is recommended.

The proposed development project does involve subsurface excavation. Therefore PAR recommends that in the event future surface-disturbing activities unearth prehistoric or historic remains, the State Historic Preservation Office, Sacramento, California be contacted immediately to assess the importance of the find and recommend an appropriate plan to protect significant cultural values that may be damaged or destroyed.

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1.0 INTRODUCTION

1.1 Purpose and Need

As part of the environmental permit process Carlsberg has initiated a Cultural Resource Inventory and Evaluation of an estimated 2,052 acres in northwest Roseville (Figures 1.1, 1.2). Carlsberg contracted with Public Anthropological Research (PAR), a Sacramento-based cultural resource management firm, to inventory and evaluate all prehistoric, historic, ethnographic and Native American sites within the project area. PAR's work was conducted in compliance with CEQA regulations as outlined in Appendix K (1985:16-18).

1.2 Project Description

Carlsberg proposes to develop three parcels; Rich, Shenker, and Carlsberg (also known as the Northwest Roseville Specific Plan). The proposed development includes construction of roads, retirement community, residential areas, and a golf course (Figure 1.3).

1.3 The Project Area

The Rich parcel is bound on the east by State Route 65, on the west by Foothill Blvd., and on the south by Baseline Road and the Kaseberg School. The Shenker Parcel is bound on the east by Foothill Blvd., on the south by Carlsberg Parcel, and on the north by Hewlett-Packard. The western boundary follows the north-south line between sections 29 and 30 (Roseville, CA., 7.5 Minute Series, USGS Quadrangle Map, 1967 [photorevised 1981]). Carlsberg Parcel is also bounded by Foothill Blvd. on the east, and by Baseline Road on the south, the powerline on the west and Shenker Parcel on the north.

1.4 Summary of Previous Cultural Resource Investigations

Two previous cultural resource investigations have been completed within the project (Foster and Foster 1981; Peak and Associates 1979a). In addition to these studies, three surveys have been undertaken immediately adjacent to the study area (Foster 1981; Peak and Associates 1979b; Roop 1978) and eight surveys within the general vicinity (Basgall 1978; Basgall and Johnson 1978; Chavez 1985; Hildebrandt et al. 1978; Palumbo 1966; Peak and Associates 1980; and Peck and Peeler 1979). Figure 1.4 shows surveys conducted on or adjacent to the project area.

Of the two projects conducted within the APEI, Foster and Foster's work resulted in the location of Native American and historic Euroamerican sites, historic features and isolated arti-

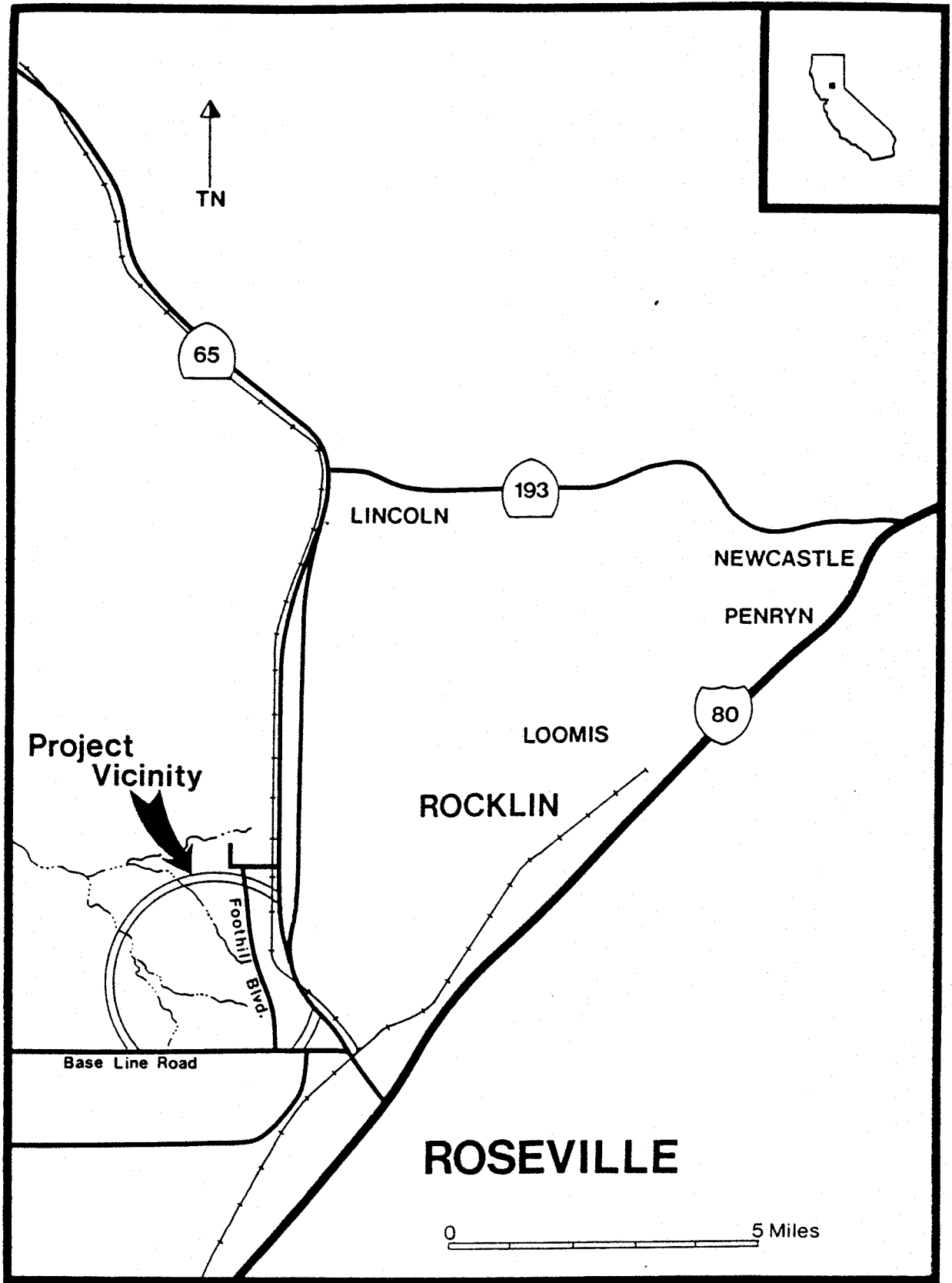


Figure I.1 Project Vicinity Map

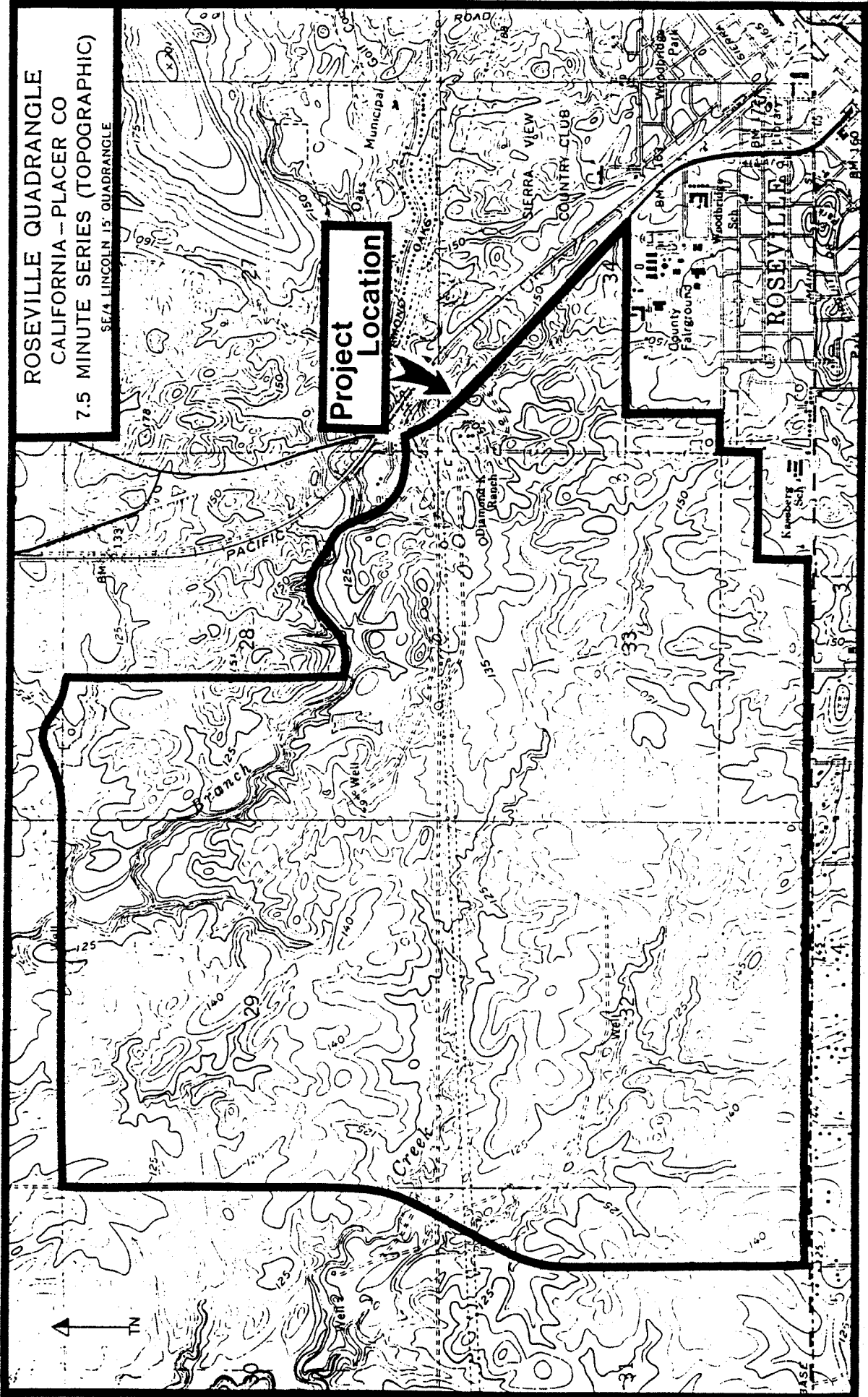


Figure 1.2 Project Location Map

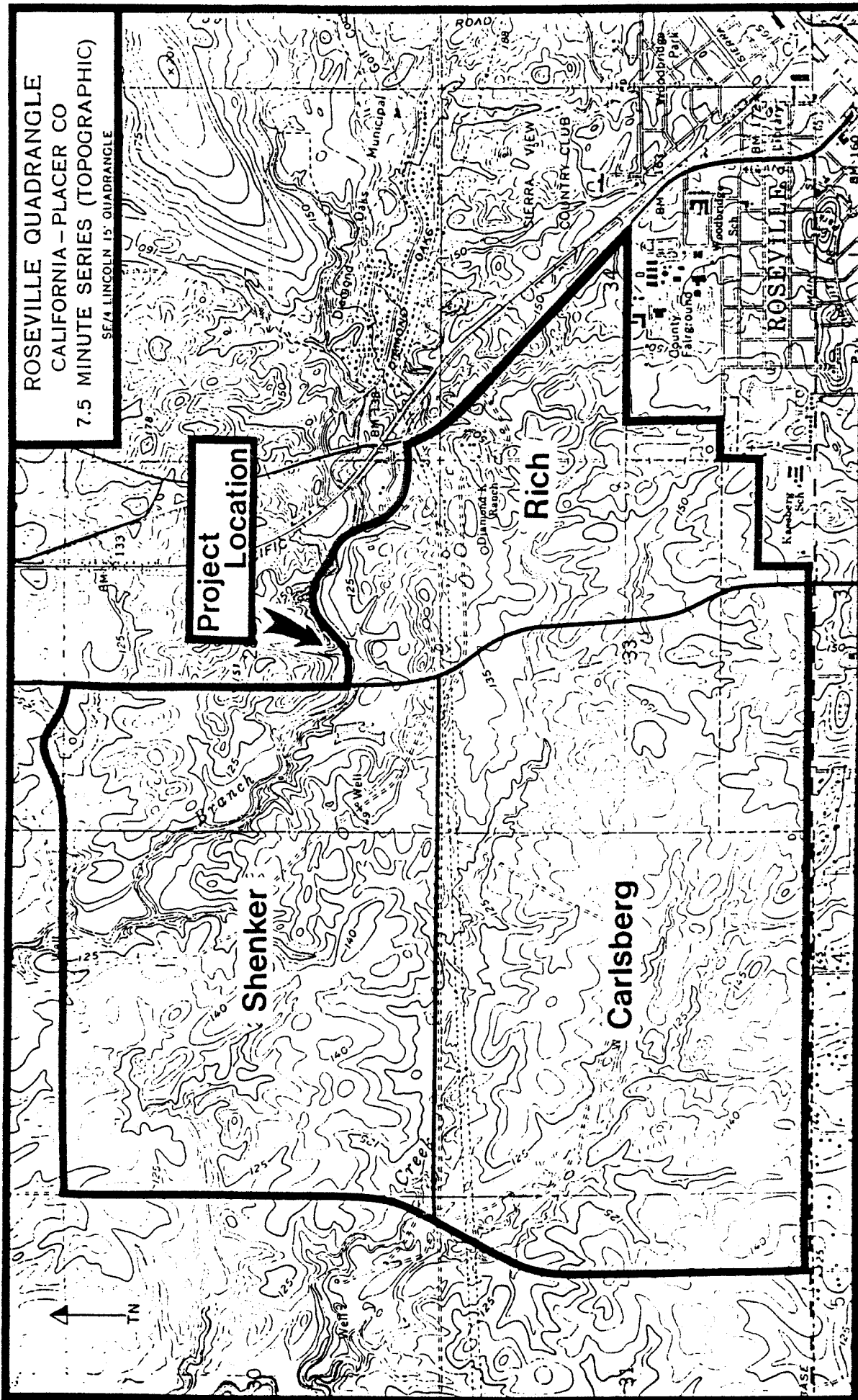


Figure 1.3 Map of Shenker, Carlsberg and Rich Parcels

facts (1981:1). One historic Euroamerican site and two isolates are within the APEI and are discussed below. Their work was completed in conjunction with the Roseville--Placer County--Rocklin West Sewer Assessment District.

CA-Pla-428H, a historic Euroamerican site, is partially located within the project and was reexamined and updated as part of the current survey. The resource was described as a possible ". . . early homestead that was later used for ranching activities . . ." Site characteristics included an unmortared stone foundation, portions of a mortared stone fireplace, privy pit, two fruit trees, two large century plants, an old wellhead (windmill remains), a standing windmill, and three piles of large milled timbers with corrugated roofing material and scattered artifacts (Foster and Foster 1981:13). Boundaries of the site were estimated to be 220 by 180 meters.

Two isolated artifacts (IA-5 and HF-8) were originally located within the project area but could not be relocated during the current investigation. IA-5 was described as an andesite unifacial mano and HF-8 as an unidentified circular depression (ibid., p. 15).

Peak and Associates (1979a) work was performed for the Sacramento Municipal Utility District's Project C, Phase I 230kv Transmission Line, Tower No. 355, Placer County to Elverta Substation, Sacramento County, California. No cultural resources were located by Peak.

The reports referred to above are on file at the California Archaeological Sites Inventory, North Central Information Center (N.C.I.C.), California State University, Sacramento.

2.0 PROJECT GUIDELINES AND METHODS

2.1 Framework for Analysis

The cultural resource survey was conducted in compliance with CEQA regulations outlined in Appendix K, Section 21083.2, which requires applicants to identify whether a project will have a significant effect on unique cultural resources within the APEI. The survey and evaluation was governed by a set of specific guidelines outlined in CEQA pertaining to cultural heritage resources.

2.1.1 Research Goals. Taking into consideration the guidelines provided by CEQA, the inquiry at this phase of investigation is as follows:

1. Do any unique archaeological sites or historic properties occur within the APEI?
2. Will the project have any adverse effects on identified unique properties?
3. Will the project restrict or effect existing Native American religious or sacred uses within the area?
4. What treatment measures are feasible to mitigate any adverse effects or impacts on unique resources?

To address these questions, a survey was performed to locate, identify, record and assess all cultural resources within the APEI (refer to Figure 1.2). Potential significant effects to each resource was also considered. No surface-disturbing activities (i.e., excavation) were conducted during this phase of investigation.

The specific goals of the survey were as follows:

1. To locate, record, and map all cultural resources within the three parcels.
2. To assess the impacts and research potential of all cultural resources.
3. To provide a report documenting methods and results of the survey, and evaluating located resources.

2.2 Methods and Techniques

A comprehensive field inventory of all project APEI's was accomplished through the integration of three tasks: 1) an intensive archaeological reconnaissance; 2) written correspondence with appropriate state agencies; and 3) survey of archival data at several repositories containing information on northwest Roseville.

2.2.1 Archival and Office. Archival research was conducted at the following repositories and agencies.

- o California Room, California State Library, Sacramento
- o California Archaeological Sites Inventory, North Central Information Center, California State University, Sacramento
- o USDI, Bureau of Land Management, Cadastral Survey Division, Sacramento District Office
- o Reference Library, California State University, Sacramento

Information was sought concerning prehistoric, ethnographic, and historic use of the project area, previous archaeological investigations in the region, and Native American Sacred sites.

Correspondence was also conducted with the State Historic Preservation Office's Native American Coordinator (Mr. Dwight Dutschke), and with the Native American Heritage Commission in Sacramento. These agencies were asked to provide information concerning known sacred sites, traditional values, concerns, villages, or ceremonial use areas within the APEI.

2.2.2 Field. The cultural resource specialists used a combination of complete and general survey methods during the field phase of the project (Figure 2.1). Land within 100 meters of Kaseberg and Pleasant Grove creeks and their tributaries, mounded areas, seeps, and areas identified on historic maps as possible home sites were given a complete investigation. In these sensitive areas the field crew spaced 15 to 25 meters apart and walked zig-zagging transects, closely inspecting the ground surface.

Portions of the project that consisted of open fields, subjected to decades of plowing and grazing, were considered to have low archaeological sensitivity and were given a more general coverage. In this type of reconnaissance the archaeological team walked wider transects, with intervals between 25 and 100 meters apart, zig-zagging to examine potentially-sensitive areas and

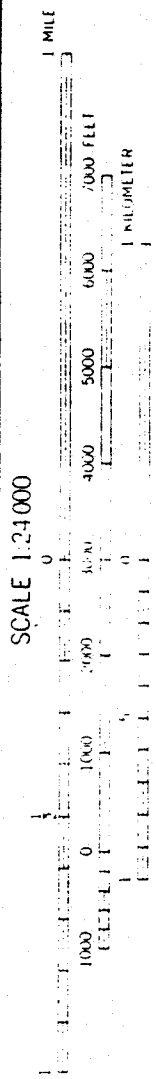
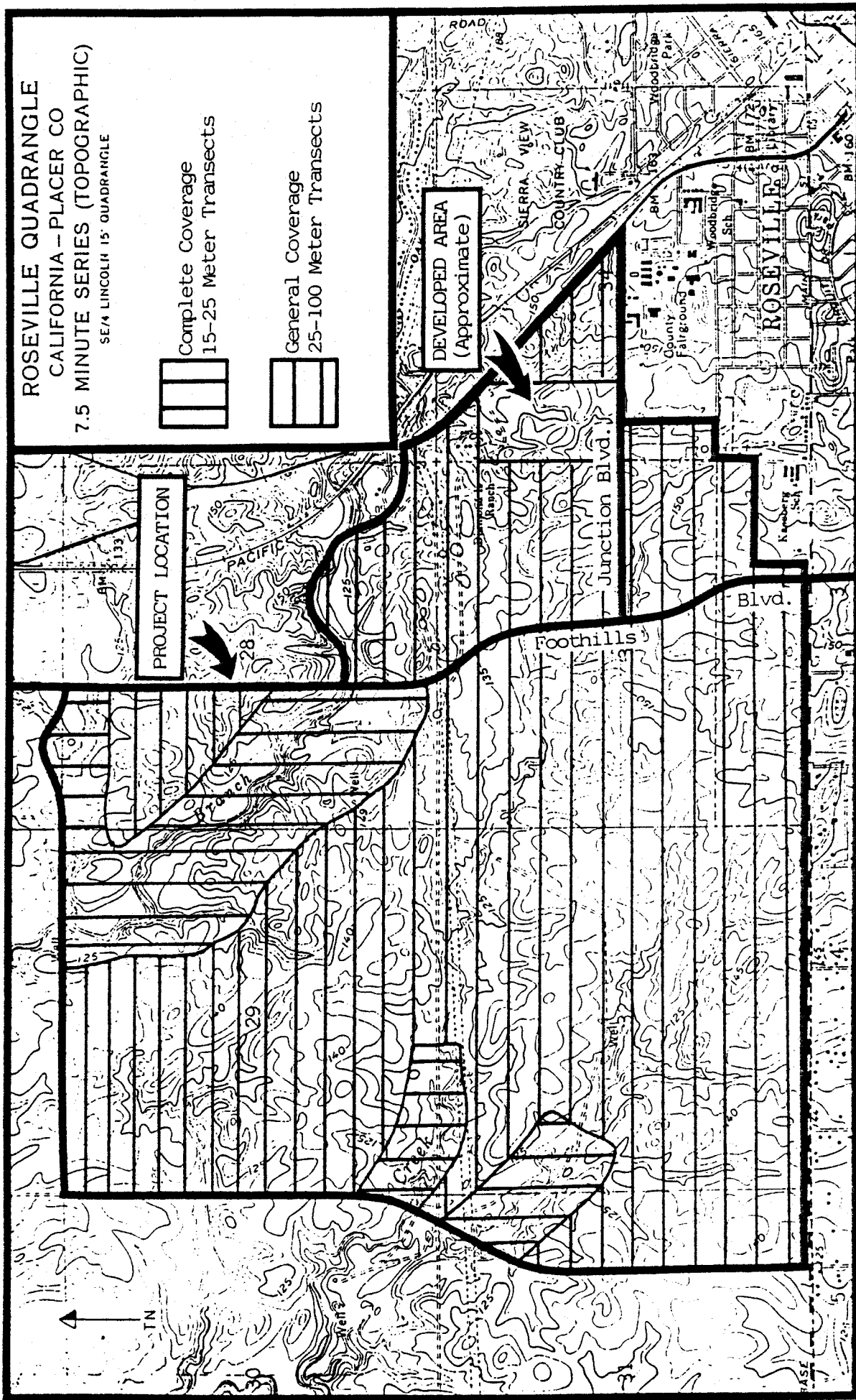


Figure 2.1 Types of Survey Coverage

water sources. During both complete and general survey methods trowels were used to expose the ground surface (not excavating) when needed, to reveal the smallest of physical material remains (e.g., small stone flakes and tools, fragments of glass, ceramic sherds, bone).

When encountering an artifact or feature, the archaeologists spaced five meters apart and walked transects in each cardinal direction from the center point of the feature or from the artifact. This method is useful in determining whether the material is an isolated occurrence or part of a larger archaeological site. It also permits accurate determination of site boundaries for future management decisions.

Once size and context were identified, relative age of the artifact was determined. According to various state and federal legislation, a site or object must be at least 50 years old to be considered a historic property. Recent objects and features were noted and marked on a map. Prehistoric and historic artifacts, features, and sites were recorded using appropriate State of California forms, mapped, photographed, and located on a USGS 7.5 minute series topographic quadrangle (Appendix A). These forms were then filed with the North Central Information Center, California State University, Sacramento, and entered into the California Sites Archaeological Data Management File.

3.0 AN OVERVIEW OF THE CULTURAL AND NATURAL HISTORY OF RICH, SHENKER, AND CARLSBERG PROJECT AREA

3.1 The Physical Environment

The project is located on the eastern edge of the Sacramento Valley in a portion of the Great Central Valley or Lower Sonoran Zone (Storer and Usinger 1963:26). Elevations range from 105 feet (above mean sea level [amsl]) to 155 feet amsl. The topography is characterized by gently-sloping hills and seasonal streams. South Branch Pleasant Grove and Kaseberg creeks and their tributaries are the primary seasonal water courses flowing east-west through the project. During the winter months away from the streams, water collects ubiquitously on the ground surface, forming randomly-occurring sumps and vernal pools.

Native vegetation includes valley oak, interior live oak, blue oak, scrub oak, cottonwood, willow and others. Today, various oaks remain clustered along the creeks and drainages with scattered occurrences of oaks on the hillsides. Annual grasses are also growing on the exposed hills, along with several introduced species including star thistle, soft chess, tarweed and red-stemmed filaree. The most prominent animal species observed during the survey include jackrabbit, various birds (red-shafted flicker, red-tailed hawk, yellow-billed magpie, and others) and domestic cattle.

The geologic history of the project spans about one million years (Hackel 1966; Hill 1975; and Storer and Usinger 1966). The prominent formations identified are characteristic of the Quaternary period of the Cenozoic era and include the Turlock Lake (sand, silt, and gravel) and Riverbank (alluvium) respectively (Wagner et al. 1981). Lesser occurrences of Basin deposits (peaty mud) and alluvium have also been recorded. Deep pockets of alluvium occur east along Pleasant Grove Creek from its confluence with South Branch. Virtually no rock outcrops were observed during the field survey. Only within the stream channels could small rounded cobbles, quartz rocks intermixed with sandy and clay soils be observed. In few instances, however, intrusive andesitic rocks (two of which have been identified as prehistoric tools) were found within the parcels. These rocks may have originated in the Mehrten Formation which begins east of Highway 65.

3.2 The Cultural Environment

3.2.1 Archaeology. The prehistory of the Central Valley Region, particularly the northern Sacramento Valley, was based on archaeological investigations that began early in this century. J. A. Barr, W. H. Holmes and P. M. Jones were among the earliest to publish results of excavations carried out in the Stockton region; here, information on artifact types and antiquity was first developed for the valley region. Later in the 1930's,

Sacramento Junior College and the University of California, Berkeley, entered the picture and shed light on the diversity of prehistoric cultures in the great valley (Moratto 1984).

By 1940, three archaeological periods were introduced based on mortuary patterns and ornamental artifacts (Early Period, Transitional Period and Late Period). The Central California Taxonomic System was eventually developed, resulting in a refinement of the early scheme. This system, still applied today, included the Early Horizon, Middle Horizon and Late Horizon. Although some disagreement during the 1940's surfaced the three sequences spanned a time-period from 2500 B.C. to A.D. 1880. As more and more archaeological sites were investigated the time frame and complexity of the cultures represented changed. In the 1950s and 1960s, for example, the earliest phase was postulated to extend back to 5500 B.C. (Moratto 1984:167-216).

Work has continued toward refinement of the prehistoric periods throughout California. For additional information on the subject the reader is referred to Moratto's book, California Archaeology, which provides a good summary of the archaeological work and development of prehistory for both the valley region and the state (Moratto 1984:167-216).

In as much as the immediate project vicinity has received little archaeological research (Palumbo 1966), the surveys by Roop in 1981 (north of the three parcels) resulted in a hypothesis concerning subsistence and settlement patterns in the Valley and other lowlands of central California (Moratto 1984:198). Roop postulated a correlation between certain ground stone tools (milling stones, manos, pestles of a type designed for use in wooden mortars, and occasional flaked-stone tools) and vernal pools. The pools, after a succession of moist to dry conditions, are said to support a distinctive early spring flora. In short, "Roop (1981) has proposed that Indians camped near these pools for brief intervals each spring to harvest freshwater shrimp, take occasional waterfowl, and especially to gather the greens, bulbs, and seeds of clover, hairgrass, cryngium, navarretia, tarweed, brodiaea, and other plants associated with the pools" (Moratto 1984:198). To this authors' knowledge, this hypothesis has not been scientifically tested.

3.2.2 Ethnography and Ethnohistory. The Native Americans who occupied the project vicinity at the time of Euroamerican contact (ca. 1850's) are known as the Nisenan (or sometimes referred to as the Southern Maidu [Dixon 1905; Kroeber 1925; Wilson and Towne 1978:387]). Several ethnographers, including Beals (1933), Faye (1923), Gifford (1927), Kroeber (1925), Powers (1976), and Wilson and Towne (1978) have studied these Maidu people and generally agree that Nisenan territory included the drainages of the Bear, American, Yuba and southern Feather River. Their permanent settlements were ". . . generally on the ridges that separated

parallel streams, either on crests or on knolls or terraces part way up" (Kroeber 1925:395).

A typical village consisted of several conical houses covered with bark slabs. The nearest ethnographic village in relationship to the project was called Pichiku (Wilson and Towne 1978:388). The name Pich-u-gut is also given for a village site in Roseville (as quoted in Palumbo 1966:9). The exact location of these villages has never been pinned down but many long time residents of Roseville indicate a village was located in the vicinity of what is today Roseville Square off Douglas Boulevard (Maniery 1985; Palumbo 1966).

The lower foothills and great valley were rich in natural resources and the Maidu took advantage of many available foods. Acorns were important to their diet and were supplemented with seeds, nuts, berries, herbs and fruit. Virtually every animal was hunted and/or trapped, excluding lizards, snakes and grizzly bears. Maidu were nomadic throughout much of the year, moving from place to place following game and gathering plants.

In the 1860's both the Fiddyment and Kaseberg ranches allowed Maidu families to collect acorns, tubers and grasshoppers during the late summer and fall (Davis 1975). These activities would take place along Pleasant Grove Creek (Foster and Foster 1981:9). According to Wilson (1972:32-38), "Traditionally, families would usually go to special places to get acorns, and they may have owned certain trees (ibid., p. 37). Wilson's information is based on ethnographic work with Elizabeth Enos, a foothill Nisenan living north of Auburn.

The Nisenan hunting and gathering cycle was altered drastically with the discovery of gold in Coloma in 1848. As miners poured into the Auburn area the Native Americans were forced out of their winter villages, land was fenced, streams were silted and food resources became increasingly difficult to procure. Stephen Powers, after traveling through the region in the 1870s, noted that the "Nishiman [sic] . . . had the misfortune to occupy the heart of the Sierra mining region, in consequence of which they have been miserably corrupted and destroyed" (1976:317). By the time of his visit, Nisenan were surviving as best they could, working for whites in mines or on ranches, panning for gold, or adopting even more abstract forms of survival (Wilson and Towne 1978:396-397).

3.2.3 History. The earliest Euro-American use of the project area was probably in the late 1840s when Placer and Sacramento counties were swarming with men searching surface placer deposits for gold. By 1854 the project area was sparsely settled and ranching had begun on a small scale. A man named Leet acquired 10,500 acres of land through government script around this time and settled on Pleasant Grove Creek (Lardner and Brock 1924: 211). In 1856 he sold out to Stephen A. Boutwell, who began to

acquire other land near the California and Oregon Railroad (now Southern Pacific). Boutwell and his partner, William Dunlap, used their land for a sheep ranch, combining their holdings with those of a new partner, James W. Kaseberg, in 1864. Lardner and Brock (1924:212) note that during the 1870s as many as 30,000 head of sheep were sheared on the ranch each year. They also note that some of the first thoroughbred and trotting horses raised in California were on the Boutwell, Dunlap, and Kaseberg ranch.

Early county histories contain interesting tidbits of information on the ranch. Perhaps most intriguing is the mention of the annual Placer County Odd Fellows day, held every April on the ranch at Leet's Grove, one and one-half miles north of Roseville. Boutwell, a member of the Odd Fellows, and his partners yearly reserved 160 acres of grass from sheep-grazing for the picnic (Lardner and Brock 1924:212). At the 1872 event, for example, the Placer Herald noted that 44 carloads of people were brought up from Sacramento and 300 others from western Placer County attended the picnic. Forty policemen kept order and champagne bottles dotted the landscape (Placer Herald 1872:1).

By 1887 Kaseberg had bought out Boutwell and Dunlap and had increased the ranch to an estimated 50,000 acres, identified on historic maps as Kaseberg Ranch (Davis 1964:5, 1975:21; Lardner and Brock 1924:211-212; Uren 1887:map). His holdings were adjoined on the north by another famous sheep and cattle ranch -- Spring Valley Ranch -- owned by J. Parker Whitney (Lardner and Brock 1924; Miller 1969) and by the smaller ranch of Walter Fiddymont. Both Kaseberg and Whitney became well known in the Roseville area and in California for their imported French Merino sheep, producers of high-quality wool.

By the late nineteenth century Kaseberg had sold much of his holdings and had built a Victorian mansion on a wooded knoll just west of present Highway 65. By the time of his death in 1905 his ranch included 8000 acres of land along Kaseberg and Pleasant Grove creeks and the mansion. His son, William, continued to graze sheep and cattle and live in the mansion until his death in 1954 (Davis 1975:21). This mansion and associated buildings, now located on the Diamond K Ranch, was nominated to the National Register of Historic Places in 1978 and represents a significant era in Roseville history.

4.0 THE RICH, SHENKER AND CARLSBERG CULTURAL RESOURCE BASE

4.1 Identified Cultural Resources

One previously-recorded historic home site was visited and the record updated. In addition, eight isolated artifacts (four prehistoric and four historic) were identified and recorded during the project (Table 4.1; Figures 4.1 - 4.6). State of California archaeological isolate records and a map depicting site locational information are contained in Appendix A of this report.

Table 4.1. ISOLATED RESOURCES

Temp-orary No.	N.I.C.N. (a)	Description	Material	Size (b)
PAR-1	AF-31-38	Unifacial Mano	andesite	9.0 X 6.5 X 4.3
PAR-2	AF-31-39	Plow Blades	iron	22" X 14"
PAR-3	AF-31-40	Liquor Bottle	glass	one pint
PAR-4	AF-31-41	Pestle	andesite	14.5 X 9.3 X 7.5
PAR-5	AF-31-42	Metate	andesite	25 X 20 X 10-20
PAR-6	AF-31-43	Farm Equip-ment (binder)	wood/iron	12'10" X 40"
PAR-7	AF-31-44	Bifacial Mano	andesite	11.0 X 7.7 X 4.6
PAR-8	AF-31-45	Cast Iron Stove Parts	iron	20" X 2' 6.75" X 8.5"

- a. The California Archaeological Sites Inventory, North Central Information Center assigns permanent numbers to recorded isolates submitted to their office.
- b. All measurements are given using the metric system unless otherwise noted.

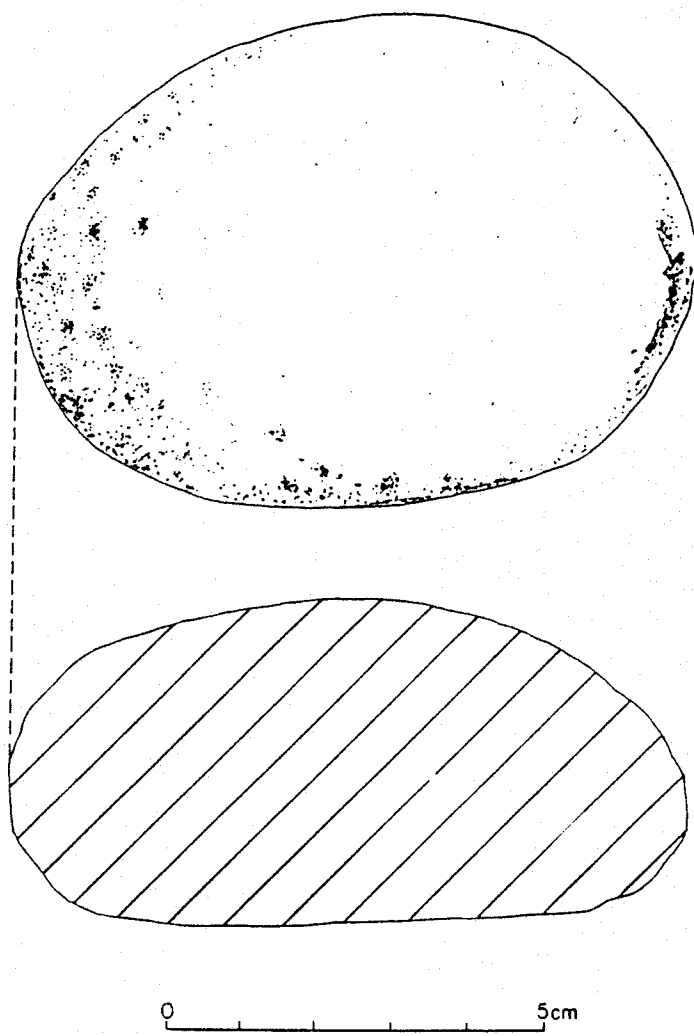
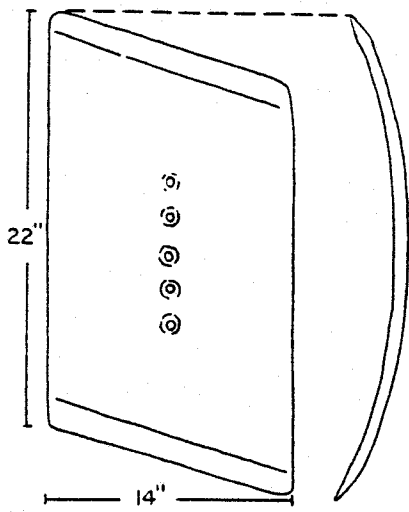
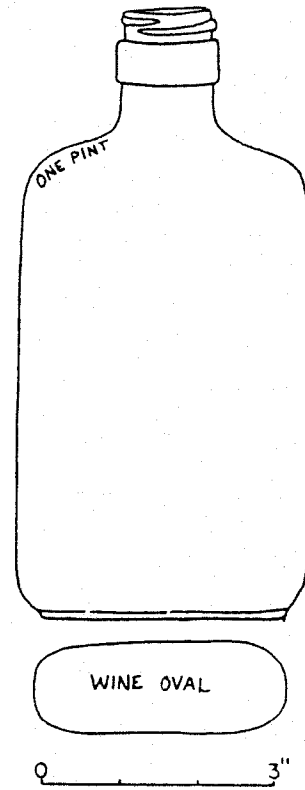


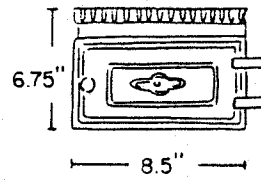
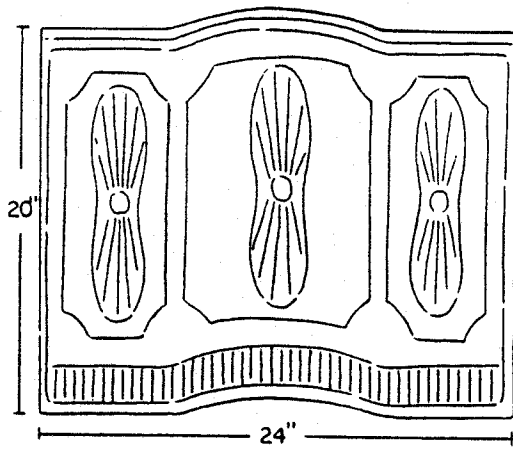
Figure 4.1 Unifacial Mano AF-31-38 (PAR-1)



A

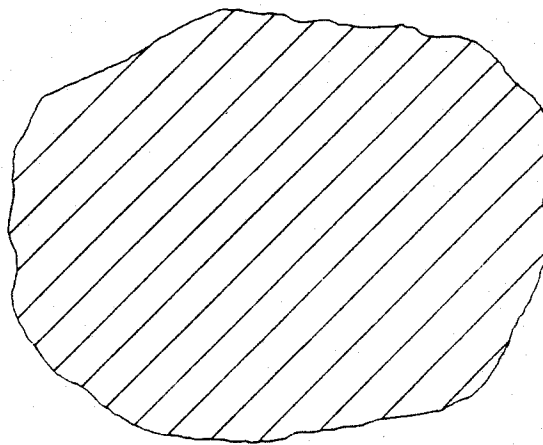


B



C

Figure 4.2 A-Plow Blade AF-31-39 (PAR-2) B-Liquor Bottle
 AF-31-40 (PAR-3) C-Cast Iron Stove Parts AF-31-45 (PAR-8)



0 5cm

Figure 4.3 Pestle AF-31-41 (PAR-4)

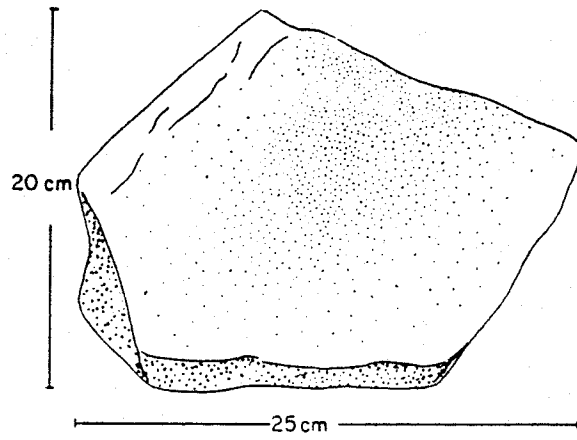


Figure 4.4 Metate AF-31-42 (PAR-5)

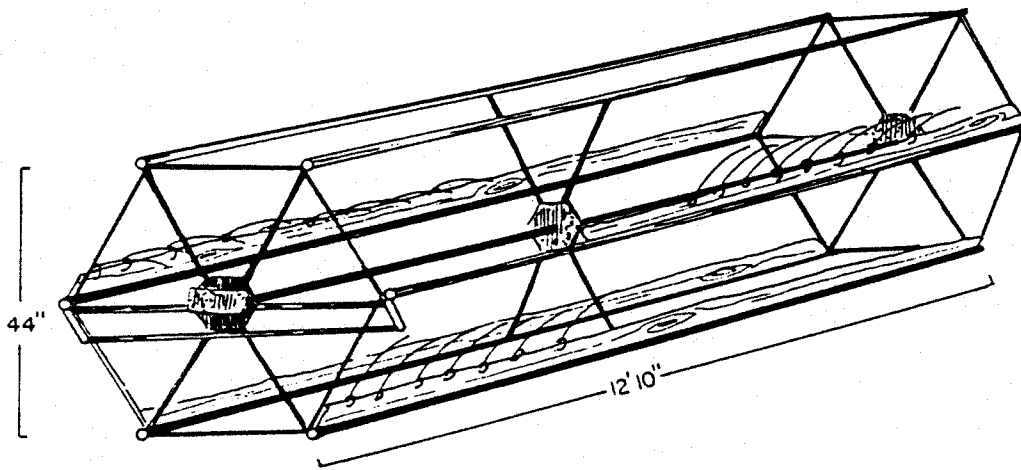


Figure 4.5 Farm Equipment - Binder AF-31-43 (PAR-6)

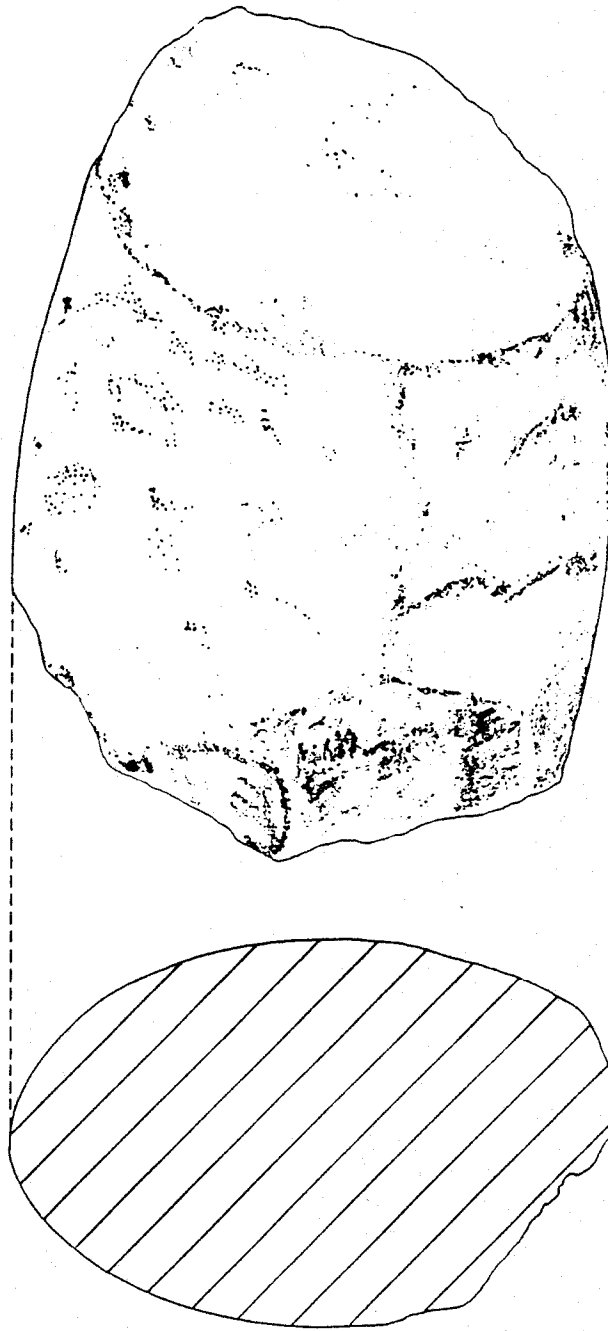


Figure 4.6 Bifacial Mano AF-31-44 (PAR-7)

4.1.1 Isolated Resources. Table 4.1 shows the variation of isolated resources encountered during the inventory. Appendix A provides detailed descriptions of each resource and their locations.

Significance: Because of their ubiquitous nature, documentation in published sources and disturbed spatial context, all of the isolated artifacts discussed above are not recommended as potentially unique resources under CEQA.

No further cultural resource management is recommended at PAR-1 through PAR-8.

4.1.2 Archaeological Resources. Ca-Pla-428H: This site was originally recorded in 1981 by John and Dan Foster as part of a sewer alignment project. They recorded several wells, an unmortared house foundation, privy hole, more recent trash dumps and windmills, as well as several domestic trees and century plants. They suggested that the site was originally used as a home site and was reused in later years for ranching activities.

PAR noted that the standing windmill recorded in 1981 by the Foster's had been torn down and the material added to one of the several trash dumps. In addition, recent City of Roseville sewer substation and road construction had realigned the original fence and removed a portion of the windmill foundation. Additional wooden features and a mortared stone foundation were located approximately 250 meters south of the windmill and added to the site map.

Significance: Portions of Pla-428H that may contain significant archaeological values (i.e., privy) are not within, and will not be impacted by, the project; therefore, there will be no adverse effect to this site. The surface feature recorded by PAR has been mapped, photographed and added to the original site record.

No further cultural cultural resource management is recommended at Pla-428.

4.1.3 Recent Alterations. Several objects of recent antiquity (less than 50 years old) were noted during the reconnaissance. In three different areas the landscape appears to have served as a waste disposal dump (e.g., automobiles, household items). A resident of Diamond K Mobile Home Park indicated that people started dumping in one particular area along Foothill Boulevard four years ago. Other objects observed included a brick outdoor barbeque pit, aluminum cans, glass liquor and food containers, John Deere farm equipment, metal fragments, iron piping and other recent debris.

5.0 RECOMMENDED MANAGEMENT MEASURES

The isolated artifacts are not considered unique artifacts under CEQA due to their isolated nature, and no further cultural resource management is recommended. The information available from these artifacts has been recorded on the appropriate state forms and filed with the North Central Information Center at California State University, Sacramento.

As with any surface survey, vegetal cover inhibited the ground visibility in much of the project. In light of this, it is possible that unrecorded cultural resources and subsurface deposits may be encountered during future construction. To this end PAR recommends that in the event any historic surface or subsurface archaeological features or deposits are uncovered during construction, work in that immediate vicinity halt immediately and Carlsberg contact the State Historic Preservation Officer in Sacramento for determination of resource significance.

6.0 SUMMARY

A cultural resource investigation of approximately 2,052 acres of land within the Rich, Shenker and Carlsberg parcels was conducted in December, 1985 and January, 1986, by Public Anthropological Research. The work was performed under contract with Carlsberg Constructors, Inc., of Roseville as part of their planning process for the Northwest Roseville Specific Plan.

Four historic and four prehistoric isolated artifacts or features were recorded during the survey. In addition, one previously-recorded historic home site, CA-Pla-428H, was revisited and the record updated. Those portions of this site considered to have archaeological significance (i.e., privy pits) are outside the project boundaries and will not be affected by the project. No further cultural resource management is recommended at CA-Pla-428H or at the eight isolated locations.

One eligible National Register of Historic Places property, the Diamond K Ranch complex, was noted during the survey. Two buildings in particular, a circa 1852 brick house and the 1892 Kaseberg victorian-style mansion, contain architectural value and have local significance. The complex and buildings are outside the three parcel boundaries and will not be affected by the project.

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