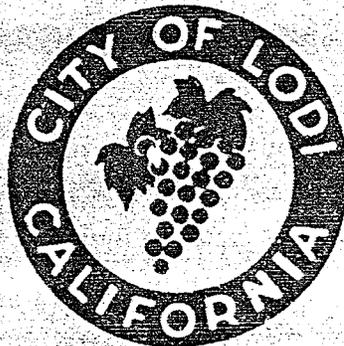


100-1111  
Final Copy

# Options Assessment Report General Plan Update City of Lodi



Prepared for:

City of Lodi Community Development Department

Prepared by:

Jones & Stokes Associates, Inc.

Contributors:

J. Laurence Mintier & Associates  
Black & Veatch  
City of Lodi Public Works Department  
Psomas and Associates  
TJKM Transportation Consultants

January 1989

MEMORANDUM, City of Lodi, Community Development Department

TO : HOLDERS OF OPTIONS ASSESSMENT REPORT - GENERAL PLAN UPDATE

FROM: COMMUNITY DEVELOPMENT DIRECTOR

DATE : JANUARY 24, 1989

SUBJECT: OPTIONS ASSESSMENT REPORT - GENERAL PLAN UPDATE

Please replace Pages 2-8, 2-9 and 2-10 with the attached pages.

## Buildout Calculation Assumptions

In April 1987, the Lodi Community Development Department conducted a detailed inventory of existing land uses in the GP study area (1987 Existing Land Use Inventory). Buildout calculations for the three land use options are based on the 1957 Existing Land Use Inventory. The existing conditions baseline data provided in Table 2-1 differ from the existing conditions data provided in the Background Report because Woodbridge data have been eliminated from the GP study area and because the 1987 Existing Land Use Inventory has been refined.

## Committed Undeveloped Lands

A number of parcels surveyed for the 1987 Existing Land Use Inventory were considered to be vacant when in fact a tentative parcel or subdivision map had been approved for them. These committed, undeveloped lands have been included in the calculations of new development based on the approved use and number of units.

## Lodi General Plan Time Frame

Each of the three land use options has a 20-year time horizon (1987-2007). Complete buildout of the GP study area is expected to occur within this 20-year time frame. This Options Assessment Report analyzes and compares the impacts of each of the land use options.

## Annexation Assumption

Annexation is expected to occur within the GP time frame. Therefore, the Options Assessment Report analyses assume that new development under Options 2 and 3 would be under City jurisdiction at buildout.

## Future Detention Basin/Parks

The need for additional storm drainage detention basins has been estimated based on discussions with City staff (J. Laurence Mintier & Associates 1988). An estimated 8 acres of detention basins (surface area) are required per 100 acres of urban development. Current City policy designates that detention basins also be developed for park purposes.

The detention basin sites shown in Figure 2-3 are not proposed locations but possible sites identified for statistical purposes. A preliminary analysis of detention basin and park needs is analyzed in Chapter 8, "Public Services."

### Future School Sites

The need for additional school sites has been estimated based on discussions with Lodi Unified School District (LUSD) staff (J. Laurence Mintier & Associates 88). According to LUSD staff, the following estimates of school site acreage are used: 10 acres per elementary school, 14 acres per middle school, and 45-50 acres per high school.

The school sites shown in Figure 2-4 are not proposed locations but possible sites identified for statistical purposes. A preliminary analysis of school needs is analyzed in Chapter 8, "Public Services."

### Industrial Reserve

It is assumed that some undeveloped, underdeveloped, or agriculturally used land north of Kettleman Lane between the existing city limits and the CCTC tracks would develop with industrial uses beyond the 20-year time frame of the Lodi GP (Figure 2-5). An industrial reserve land use category has therefore been created for this land.

Currently, the existing GP and zoning ordinance designate this area for industrial uses. Market forecasts generated for the GP Update, however, do not indicate that this area would be absorbed during the GP time frame. Therefore, the City has created an industrial reserve category to set aside this area for industrial development **past** the GP time frame.

## DESCRIPTION OF LAND USE OPTIONS

Each of the three land use options described below represents a different land use scenario for future growth in the Lodi GP study area.

The Options Assessment Report will assess and compare the impacts of buildout of the GP study area in accordance with the land uses designated under Options 1, 2, and 3.

### Option 1

Option I reflects the adopted Lodi GP as modified by Ordinance No. 1237 (Measure A), which amended the Land Use Element of the Lodi GP by removing from the Land Use Element any area not within the city limits. Measure A requires that annexation of properties to the City for development purposes must be approved by a vote of the

electorate. This option also reflects the adopted **GP** as modified by Ordinance No. 1409, which limits new residential development in the Eastside study area to a maximum density of 7 dwelling units per gross acre.

For purposes of analyzing and comparing the three land use options, the existing GP land use designations were translated into the proposed GP land use designations. In some area, adjustments were made to reflect development that has occurred and to provide consistency between the GP and zoning.

Under Option 1, no new detention basins are designated. Two existing sites are planned for detention basins C-Basin and C-Basin.

One additional elementary school is designated under this option (Figure 2-4) because the LUSD is currently constructing an elementary school at Scarborough Drive and Wimbledon Drive. In addition, the LUSD is planning to construct a new middle school on LUSD-owned property located on Mills Avenue near West Elm Street.

Option 1 identifies a 9-acre developed parcel at the southwestern corner of Lower Sacramento and Turner Roads with redevelopment potential. The land use is expected to shift from office to neighborhood/community commercial.

### **Buildout Land Uses**

The Option 1 land use map is shown in Figure 2-6. Table 2-1 presents the increment of new growth and total acres by proposed GP designation expected under buildout of Option 1 in 2007.

Option 1 proposes 588 acres of new development, of which **364**, or 62 percent, are committed but undeveloped. Of the total new development, **34** percent is designated as residential (80 percent low density residential, 16 percent medium density residential, 2 percent high density residential, and 2 percent Eastside residential), **4** percent commercial (52 percent neighborhood/community, 35 percent general commercial, and 13 percent downtown commercial), 7 percent office, 46 percent industrial (11 percent Light and 89 percent Heavy), and 10 percent public/quasi-public. Option 1 does not designate any new acreage as detention basin/park, agriculture, or industrial reserve.

Under Option 1, a total of 1,338 new dwelling units are proposed (874 low density residential, 341 medium density residential, 87 high density residential, and 36 Eastside residential). Of the 1,338 units, 783 low density residential, 325 medium density residential, 10 high density residential, and 25 Eastside residential units are considered committed but undeveloped.

A total of 2,935 new employees are projected from development of commercial, office, industrial, and public/quasi-public uses.



**OPTIONS ASSESSMENT REPORT  
FOR THE  
CITY OF LODI GENERAL PLAN UPDATE**

Prepared for:

City of Lodi Community Development Department  
221 West Pine Street  
Lodi, CA 95241  
Contact: James Schroeder  
209/333-6711

Prepared by:

Jones & Stokes Associates, Inc.  
1725 - 23rd Street, Suite 100  
Sacramento, CA 95816  
Contact: Ron Bass/Francine Demos-Petropoulos  
916/444-5638

Contributors:

J. Laurence Mintier & Associates  
**Black & Veatch**  
City of Lodi Public Works Department  
Psomas and Associates  
TJKM Transportation Consultants

January 1989

This document should be cited as:

Jones & Stokes Associates, Inc. 1988. Options assessment report for the City of Lodi general plan update. (JSA 86-101.) Sacramento, CA. Prepared for: City of Lodi Community Development Department, Lodi, CA.

# TABLE OF CONTENTS

---

---

CHAPTER 1 - Introduction	1-1
Introduction	1-1
Scope of the Options Assessment Report	1-3
Organization of the Options Assessment Report	1-3
CHAPTER 2 - Project Description	2-1
GP Area Study Location	2-1
Existing Land Uses in the GP Area	2-1
Land Use Assumptions	2-4
Description of Land Use Options	2-9
CHAPTER 3 - Summary of Impacts	3-1
CHAPTER 4 - Land Use	4-1
Option 1	4-1
Option 2	4-1
Option 3	4-4
Implications for the General Plan	4-4
CHAPTER 5 - Housing	5-1
Option 1	5-1
Option 2	5-3
Option 3	5-4
Implications for the General Plan	5-5
CHAPTER 6 - Population	6-1
Option 1	6-1
Option 2	6-1
Option 3	6-3
Implications for the General Plan	6-3
CHAPTER 7 - Employment	7-1
Option 1	7-1
Option 2	7-1
Option 3	7-3
Implications for the General Plan	7-3
CHAPTER 8 - Public Services	8-1
Water	8-1
Sewerage	8-3
Storm Drainage	8-5
Law Enforcement	8-10
Fire Protection	8-13
Parks and Recreation	8-16
Schools	8-19

TABLE OF CONTENTS (Continued) .

	<u>Page</u>
CHAPTER 9 - Transportation	<b>9-1</b>
CHAPTER 10 - Bibliography	10-1
- References Cited	10-1
- Persona! Communications	10-1
CHAPTER 11 - Report Preparation	
Jones & Stokes Associates, Inc.	11-1
J. Laurence Mintier & Associates	11-1
Black & Veatch	11-2
City of Lodi Public Works Department	11-2
Psomas and Associates	11-2
TJKM Transportation Consultants	11-2
APPENDIX A - Executive Summary of the City of Lodi General Plan Update Land Absorption Study	<b>A-1</b>

## LIST OF TABLES

---

---

	Page
Table 2-1. Comparison of Approximate Gross Acres, Dwelling Units, Population, and Employment for Existing Conditions and by Land Use Option	2-3
Table 2-2. Land Use Assumptions	2-5
Table 3-1. Summary of Impacts by Land Use Option	3-2
Table 4-1. Agricultural land Conversion by Land Use Option	4-2
Table 5-1. New Housing <b>and</b> Employment Development by Land Use Option	5-2
Table 6-1. Comparison of Approximate Population for Existing Conditions and by Land Use Option	6-2
Table 7-1. Comparison of Approximate Employment for Existing Conditions and by Land Use Option	7-2
Table 8-1. Future Well Demands by Land Use Options	8-2
Table 8-2. Police Protection Requirements Resulting from New Development by Land Use Options	8-11
Table S-3. Fire Protection Requirements Resulting from New Development by Land Use Options	8-14
Table 8-4. Developed Parkland Requirements Resulting from New Development by Land Use Option	8-17
Table 8-5. Projected Enrollment and Capacity of Lodi Public Schools by Land Use Option	8-20
Table 9-1. Recommended Capacities for the Lodi General Plan Study Area	9-2
Table 9-2. Comparison of Road Miles by Arterial Type	<b>9-4</b>

## LIST OF FIGURES

---

	<u>Page</u>
Figure 2-1. Regional Location	2-2
Figure 2-2. Lodi GP Study and Eastside Areas	Follows 2-9
Figure 2-3. Storm Drainage Detention Basins/Parks	Follows 2-9
Figure 2-4. School Sites	Follows 2-9
Figure 2-5. Industrial Reserve (Options 2 and 3)	Follows 2-9
Figure 2-6. New Development Potential (Option 1)	Follows 2-10
Figure 2-7. New Development Potential (Option 2)	Follows 2-11
Figure 2-8. New Development Potential (Option 3)	Follows 2-12
Figure 8-1. Water System Improvements Required Under (Option 1)	Follows 8-2
Figure 8-2. Water System Improvements Required Under (Option 2)	Follows 8-2
Figure 8-3. Water System Improvements Required Under (Option 3)	Follows 8-3
Figure 8-4. Preliminary Sanitary Sewer Improvements Required Under Option 1 (Sewers 12 Inches and Larger in Diameter)	Follows 8-3
Figure 8-5. Preliminary Sanitary Sewer Improvements Required Under Option 2 (Sewers 12 Inches and Larger in Diameter)	Follows 8-4
Figure 8-6. Preliminary Sanitary Sewer Improvements Required Under Option 3 (Sewers 13 Inches and Larger in Diameter)	Follows 8-4
Figure 8-7. Master Storm Drainage System Improvements Required Under Option 2	8-7
Figure 8-8. Master Storm Drainage System Improvements Required Under Option 3	8-9

## LIST OF FIGURES (Continued)

	<u>Page</u>
Figure 8-9. Schools Required Under Option 1	Follows 8-20
Figure 5-10. Schools Required Under Option 2	Follows 8-21
Figure 8-11. Schools Required Under Option 3	Follows 8-22
Figure 9-1. Daily Traffic Volumes (Option 1)	9-5
Figure 9-2. Future Circulation Network (Option 1)	9-6
Figure 9-3. Daily Traffic Volumes (Option 2)	9-7
Figure 9-4. Future Circulation Network (Option 2)	9-8
Figure 9-5. Daily Traffic Volumes (Option 3)	9-9
Figure 9-6. Future Circulation Network (Option 3)	9-10



## CHAPTER 1. Introduction

---

### INTRODUCTION

California state law requires each city and county to adopt a general plan "for the physical development of the city or county, and any land outside its boundaries which bears relation to its planning." The role of the general plan is to act as a constitution for development, the foundation on which all land use decisions are to be based. The general plan expresses community development goals and embodies public policy relative to the distribution of future land use.

State general plan law (Government Code Section 65302 of the State General Plan Guidelines) requires that a general plan contain the following elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety. In addition, a general plan may include optional elements of local importance that relate to the physical development of a city.

The City of Lodi (City) General Plan (GP) Update will also include a Growth Management Element as one of these optional elements.

This Options Assessment report constitutes Phase V of the City of Lodi GP Update process. To date the Issue Identification, Data Collection and Analysis, and Identification and Screening of Planning Options phases have been completed. The following is a brief description of the GP Update process.

- o **Issue Identification.** The purpose of this phase was to identify community concerns and planning issues to guide data collection and subsequent policy development. To identify community concerns, a series of opinion surveys and interviews were conducted in April 1987. Major planning issues were identified by the Lodi City Council, Lodi Planning Commission, City department heads, community leaders, and residents at large. These opinion surveys and interviews were intended to allow interested persons to express their concerns and become involved in the planning process. The Summary of Community Opinion Survey and Interviews Report is hereby incorporated by reference (Jones & Stokes Associates 1987). A copy of this report is available for review at the City of Lodi Community Development Department.
- o **Data Collection and Analysis.** The purpose of this phase was to thoroughly update information on all of the issues described above. The analysis of these data highlighted their implication for land use and development. The data and analyses are presented in the Background Report and will be used as a data source for the GP. The Background Report is hereby incorporated by reference

(Jones & Stokes Associates 1988a). A copy of this report is available for review at the City of Lodi Community Development Department.

- o **Land Absorption Study.** This study was prepared to provide an evaluation of the market demand for major land uses in the Lodi area over a 20-year period (1987-2007). The evaluation focused on four broad land use categories defined by the markets for residential, commercial, office, and industrial land. These market evaluations include 20-year absorption schedules for land use options based on two primary assumptions: a 2.0-percent annual housing stock growth compounded over 20 years and a 3.5-percent annual average population increase through 2007. This study **was** used to project the availability of new land that will be needed **to** satisfy future market demand. The Land Absorption Study is hereby incorporated by reference (Jones & Stokes Associates 1988b) and is summarized in Chapter 2. A copy of this report is available for review at the City of Lodi Community Development Department.
- o **Identification and Screening of Planning Options.** Based on the Summary of Community Opinion Survey and Interview Report, the Background Report, and input from City staff, three Citywide land use planning options were selected by the City: Existing GP (Option 1), Low Growth (Option 2), and High Growth (Option 3). The City of Lodi Draft General Plan Options Report, hereby incorporated by reference (J. Laurence Mintier & Associates 1988), outlines the three land use options and the assumptions used in developing these land use options, summarizes new development potential associated with each of the land use options and the assumptions and principles on which these calculations and the options are based, and presents 20-year development phasing scenarios for Options 2 and 3 that are segregated into 5-year increments identifying the amount of land that **would** be developed in each of the proposed GP designations. A copy of this report is available for review at the City of Lodi Community Development Department.
- o **Options Assessment Report.** The purpose of this study is to comparatively assess the implications and impacts of the three land use options. Based on public review and direction from the Lodi Planning Commission and City Council, a preferred land use option will be selected to form the basis of the Draft GP.
- o **Draft General Plan.** The Draft GP will be prepared in three parts: 1) the Policy Document, 2) the revised Background Report, and 3) the Draft Environmental Impact Report (EIR). The Policy Document will address the elements required by state planning law, as described earlier, and the optional Growth Management Element, the Urban Design Subelement, and the Schools Subelement.
- o **Draft Environmental Impact Report.** The Draft GP EIR will analyze the preferred land use option and alternatives in comparison to the preferred option. Based on public review, the Draft GP will be fine-tuned.
- o **Final General Plan and Environmental Impact Report.** Following public review of the Draft GP and EIR, the Final GP and EIR will be prepared.

## SCOPE OF THE OPTIONS ASSESSMENT REPORT

This report comparatively assesses the implications and impacts of the three land use planning options to aid the Lodi Planning Commission and City Council in selecting the preferred land use option that will form the basis of the Lodi Draft GP.

City Community Development and Public Works Department staff determined that the following issues were of concern in selecting the preferred land use option.

- o land use
- o housing
- o population
- o employment
- o public services
  - water
  - sewerage
  - storm drainage
  - law enforcement
  - fire service
  - parks and recreation
  - schools
- o transportation

## ORGANIZATION OF THE OPTIONS ASSESSMENT REPORT

The Options Assessment Report is organized as follows.

Chapter 1, "Introduction," provides a brief overview of the GP Update process.

Chapter 2, "Project Description," describes the three land use options identified by City staff and land use assumptions used in identifying the options.

Chapter 3, "Summary of Impacts," summarizes and compares the impacts of each land use option.

Chapters 4-9 are each devoted to a single impact topic. Relevant data on the environmental setting are contained in the Background Report. The impacts of each land use option are identified, evaluated in terms of their significance, and compared to the other land use options, possible policy options available to the City are suggested for possible incorporation into the Draft GP Policy Document.

Chapter 10, "Bibliography," identifies the documents and individuals consulted in preparing this Options Assessment Report.

Chapter 11, "Report Preparation," lists those individuals and firms involved in preparing this Options Assessment Report.

Technical appendices are included at the end of the report.



## CHAPTER 2. Project Description

---

### GP AREA STUDY LOCATION

The regional location of the Lodi GP planning area (GP study area) is shown in Figure 2-1. The GP study area comprises 10,526 acres. Its boundaries include all areas within the incorporated city limits and the unincorporated area immediately adjacent to the city limits. The GP study area is bounded by the Mokelumne River on the north, Curry Road on the east, Armstrong Road on the south, and the Woodbridge Irrigation District (WID) Canal on the west (Figure 2-2).

### EXISTING LAND USES IN THE GP STUDY AREA

Table 2-1 presents the current land acreage totals by proposed GP land use designation.

The GP study area contains 10,526 acres of land (5,000 in the incorporated area and 5,526 in the unincorporated area), of which 29 percent is residential (89 percent low density residential, 6 percent medium density residential, and 5 percent high density residential), 4 percent commercial (39 percent neighborhood/community commercial, 56 percent general commercial, and 5 percent downtown commercial), less than 1 percent office, 7 percent industrial (45 percent light industrial and 55 percent heavy industrial), 9 percent public/quasi-public, 4 percent detention basin/park, and 42 percent agriculture and approximately 5 percent vacant land. Currently, there are no Eastside residential, planned residential, or industrial reserve designations in the GP study area.

A total of 17,506 units exist in the GP study area (17,158 units in the incorporated area and 348 units in the unincorporated area), of which 70 percent are low density residential, 9 percent are medium density residential, and 21 percent are high density residential.

An estimated 21,953 employees currently work in the GP study area (20,154 in the incorporated area and 1,799 in the unincorporated area).

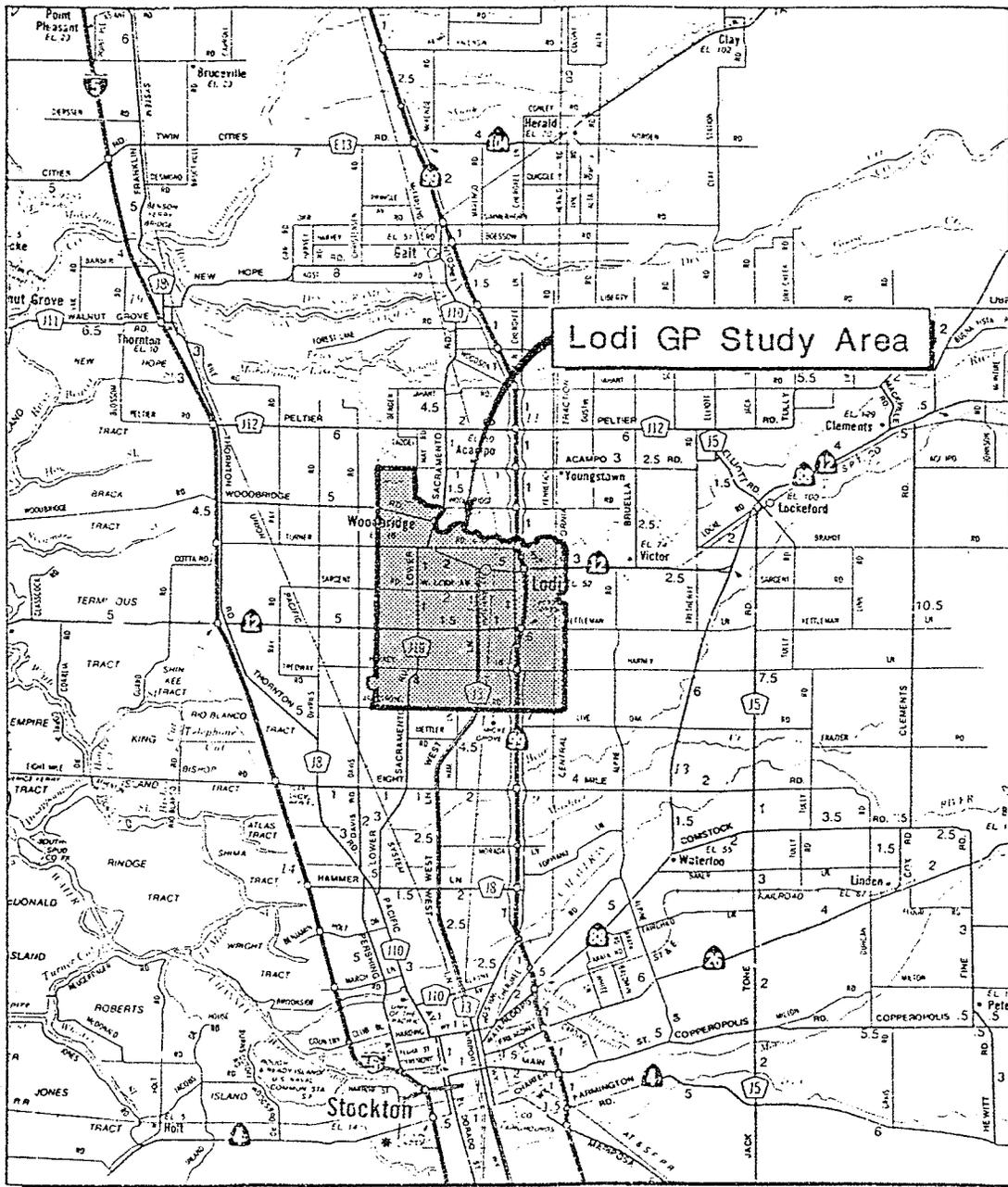


FIGURE 2-1. REGIONAL LOCATION

Table 2-1. Comparison of Approximate Gross Acres, Dwelling Units, Population, and Employment for Existing Conditions and by Land Use Option

Land Use Designation	EXISTING CONDITIONS			OPTION 1			OPTION 2			OPTION 3			OPTION 4			OPTION 5									
	Increment of Growth			Increment of Growth			Increment of Growth			GP Buildout			GP Buildout			GP Buildout									
	City	County	Total	City	County	Total	City	County	Total	City	County	Total	City	County	Total	City	County	Total							
	Sub-Total	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under	Coa/Under						
RESIDENTIAL	5,000	5,526	10,526	364	224	0	511	364	224	1,413	2,471	364	224	2,414	3,036	5,018	5,526	10,574	5,018	5,526	10,574	5,018	5,526	10,574	
Residential																									
Low Density	2,017	720	2,735	111	11	0	151	111	11	0	151	111	11	0	151	2,194	720	2,915	2,194	720	2,915	2,194	720	2,915	
Medium Density	159	13	172	31	1	0	32	31	1	0	32	31	1	0	32	131	13	205	131	13	205	131	13	205	
High Density	162	0	162	1	3	0	1	1	3	5	1	1	3	5	1	1	3	166	1	3	166	1	3	166	
Eastside Residential	0	0	0	1	2	0	3	1	2	0	3	1	2	0	3	1	2	3	1	2	3	1	2	3	
Planned Residential	0	0	0	0	0	0	0	0	0	1,236	1,236	0	0	0	1,968	1,968	0	0	0	0	1,236	1,236	0	0	
SUBTOTAL	2,350	733	3,083	174	24	0	184	174	24	1,236	1,434	174	24	1,360	2,151	2,556	733	3,219	2,556	1,968	4,525	2,556	2,633	5,249	
COMMERCIAL																									
Neighborhood/Community	149	0	149	0	12	0	12	71	50	0	12	121	133	11	161	0	161	161	71	233	161	121	242	161	
General	149	23	212	3	5	0	8	3	5	56	64	3	5	37	105	157	23	220	157	35	276	197	120	317	
Downtown	15	0	15	1	2	0	3	1	2	0	3	1	2	0	3	1	2	2	0	2	2	2	0	2	
SUBTOTAL	358	23	381	4	19	0	23	4	19	134	157	4	19	214	241	311	23	401	311	157	534	311	241	622	
Office	65	0	65	27	11	0	38	27	11	0	38	27	11	23	61	103	0	103	103	0	103	103	23	126	
Industrial																									
Light	221	16	237	21	0	0	21	25	0	55	21	104	9	134	11	250	14	343	267	163	365	316	193	610	
Heavy	333	49	382	196	112	0	242	100	125	0	225	100	16	0	146	11	575	49	624	558	49	603	479	49	528
SUBTOTAL	554	343	897	121	158	0	271	121	158	5	240	121	158	9	210	111	425	163	364	425	152	577	425	152	577
Public/Quasi-Public	451	151	602	31	26	0	57	31	26	38	31	31	26	64	122	151	451	151	451	151	451	151	451	151	602
Detention Basins/Parks	326	10	366	0	0	0	0	0	0	34	34	0	0	174	174	326	10	366	326	114	440	326	114	540	
Agriculture	150	4,251	4,401	0	0	0	4,474	4,474	0	1,936	1,936	0	0	1,475	1,475	0	4,474	4,474	0	1,936	1,936	0	4,475	4,475	
Precast	112	111	563	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Industrial Reserve	0	0	0	0	0	0	0	0	0	935	935	0	0	955	955	0	0	0	0	935	935	0	955	955	
POPULATING UNITS	117,150	310	17,568	7,103	195	0	1,338	1,147	195	6,654	9,992	1,147	195	13,719	15,857	114,696	310	18,414	114,696	9,802	27,450	114,696	14,667	32,563	
Low Density	111,918	330	12,257	313	51	0	874	783	51	0	874	783	51	0	874	114,792	330	13,131	114,792	330	13,131	114,792	330	13,131	
Medium Density	1,594	3	1,443	325	16	0	312	325	16	0	311	325	16	0	343	1,935	3	2,944	1,935	3	2,944	1,935	3	2,944	
High Density	1,446	0	1,446	10	77	0	87	10	77	0	87	10	77	0	87	3,733	0	3,733	3,733	0	3,733	3,733	0	3,733	
Eastside Residential	0	0	0	25	11	0	36	25	11	0	36	25	11	0	36	36	0	36	36	0	36	36	0	36	
Planned Residential	0	0	0	0	0	0	0	0	0	6,654	6,654	0	0	13,719	13,719	0	0	0	0	6,654	6,654	0	13,719	13,719	
POPULATION	116,327	910	17,216	2,972	507	0	3,431	2,972	507	22,540	25,379	2,972	507	35,643	39,140	119,405	910	58,745	119,405	23,440	73,215	119,405	36,609	146,111	
EMPLOYMENT	110,154	1,739	21,953	1,357	1,531	0	2,935	1,357	1,531	3,854	6,812	1,357	1,692	6,649	9,771	113,049	1,739	21,844	122,116	5,649	21,765	122,212	6,441	31,731	
Neighborhood/Community	3,171	0	3,171	0	336	0	336	2,141	2,520	0	336	3,384	3,721	11	4,210	0	4,210	4,210	2,141	6,356	4,210	3,384	7,594		
General	1,514	391	5,512	75	125	0	200	75	125	1,400	1,600	75	125	2,425	2,625	5,114	391	5,712	5,114	1,330	7,112	5,114	3,023	4,137	
Downtown	171	0	171	24	56	0	81	24	56	0	81	24	56	0	81	571	0	571	571	0	571	571	0	571	
Office	1,950	0	1,950	437	174	0	614	437	174	0	614	437	174	373	911	2,566	0	2,574	2,566	0	2,574	2,566	341	2,946	
Light	1,707	705	4,112	130	50	0	180	130	55	56	341	130	645	56	831	3,847	705	4,552	4,552	761	4,753	4,662	761	5,243	
Heavy	2,457	367	2,864	460	653	0	1,113	460	653	0	1,035	460	712	0	672	3,610	367	3,977	3,977	3,617	3,493	2,249	3,67	3,524	
Public/Quasi-Pub	2,711	171	2,439	266	110	0	406	266	110	210	616	266	110	641	651	3,124	171	3,145	3,144	331	3,455	3,124	549	3,433	

## LAND USE ASSUMPTIONS

### General Plan Designations, Density Standards, and Floor:Area Ratios

Table 2-2 describes the proposed GP land use designations, average density standards, and average floor:area ratios [FAR] used in developing the three land use options. FAR is the ratio between building square footage to lot square footage.

Two new GP land use designations are proposed: Eastside residential and planned residential. Eastside residential reflects the adoption of Ordinance No. 1409, which limits new residential development in the Eastside area (Figure 2-2) to a maximum of 7 units per acre. However, as indicated in Table 2-2, an average density of 5 units per acre is assumed. Planned residential is a reserve designation applied to unincorporated lands only. When this land is annexed to the City of Lodi and residential development is approved, the planned residential designation would be replaced with a Low-, Medium-, or High-Density residential designation based on its approved density. On the average, new units would be developed according to the following formula: 65 percent low, 10 percent medium, and 25 percent high density residential.

Summarized below are the proposed GP land use designations and permitted uses.

#### Residential

This land use category contains the following types of residential uses:

- o **Low density residential** allows single family detached and second units and two family units on corner lots or lots sided by a commercial or industrial district. The primary corresponding zoning districts are Residence District-One-Family and Residence District-Two-Family. This designation assumes buildout at 5 units per acre with 2.6 persons per unit.
- o **Medium density residential** allows single family, two-, three-, and four-family, and multifamily and group dwellings. The primary corresponding zoning districts are Planned Development, Low-Density Multi-Family, and Garden Apartment Residence. This designation assumes buildout at 12 units per acre with 2.6 persons per unit.
- o **High density residential** allows single family, two family, multifamily, and group dwellings, in addition to hotels, motels, and boarding houses. The primary corresponding zoning districts are Medium-Density Multi-Family Residence and High-Density Multi-Family Residence. This designation assumes buildout at 24 units per acre with 2.6 persons per unit.
- o Eastside residential reflects the Lodi City Council's adoption of ordinance No. 1409. This ordinance limits new residential development in the Eastside

**Table 2-2. Land Use Assumptions**

Proposed GP Designation	Density Standard (units/acre)	FAR (percent FAR/acre)
Residential		
o Low Density	5	--
o Medium Density	12	--
o High Density	24	--
o Eastside Residential	5	--
o Planned Residential	7	--
Commercial		
o Neighborhood/Community	--	30
o General	--	30
o Downtown	--	150
Office	--	35
Industrial		
o Light	--	40
o Heavy	--	40
Public/Quasi-Public	--	--
Detention Basin/Park	--	--
Floodplain	--	--
Agriculture	--	--
Industrial Reserve	--	--

**Source:** J. Laurence Mintier & Associates 1988.

area to a maximum density of 7 dwelling units per acre but deems all existing multifamily units to be conforming uses. This designation allows single family detached units. This designation assumes buildout at 5 units per acre with 2.6 persons per unit.

- o **Planned residential** is a residential reserve designation applied to unincorporated land. As this land is incorporated and residential development is approved, this designation would be replaced with a low, medium, or high density residential designation, based on its approved density. New units within this designation would be developed according to the following formula: 65 percent low density residential, 10 percent medium density residential, and 25 percent high density residential. This designation assumes buildout at 5 units per acre for low density, 12 units per acre for medium density and 24 units per acre for high density with 2.6 persons per unit. (See above discussions for low-, medium-, and high-density designations for allowed uses.)

#### Commercial

- o **Neighborhood/community commercial** allows retail stores, business offices, and service. The primary corresponding zoning districts are commercial-shopping. This designation assumes buildout at 30 percent FAR.
- o **General commercial** allows retail stores, business offices, service, and storage and warehousing. The primary corresponding zoning districts are Neighborhood commercial and general commercial. This designation assumes buildout at 30 percent FAR.
- o **Downtown commercial** allows retail stores, business offices, and service in downtown Lodi. The primary corresponding zoning districts are Neighborhood commercial, and general commercial. This designation assumes buildout at 150 percent FAR.

#### Office

- o **Office** allows business and professional uses, rest and convalescent homes, and multifamily and group dwellings. The primary corresponding zoning district is residential-commercial-professional office district. This designation assumes buildout at 35 percent FAR.

#### Industrial

- o **Light industrial** allows retail stores, business offices, service, storage and warehousing, and wholesale business and manufacturing. The primary corresponding zoning district is commercial-light industrial and light industrial. This designation assumes buildout at 40 percent FAR.

- o **Heavy industrial** allows retail stores, business offices, service, storage and warehousing, wholesale business and manufacturing, factory, and transportation. The primary corresponding zoning district is heavy industrial. This designation assumes buildout at 40 percent FAR.

#### **Public/Quasi-Public**

This category contains uses such as educational, institutional, and religious.

#### **Detention Basin/Park**

This category contains storm drainage detention basins and parks.

#### **Floodplain**

This category contains areas within the floodplain of the Mokelumne River.

#### **Agriculture**

This category contains areas in permanent agriculture.

#### **Industrial Reserve**

This category contains some undeveloped, underdeveloped, or agriculturally used land north of Kettleman Lane between the existing city limits and the Central California Traction Company (CCTC) tracks that would develop with industrial uses beyond the 20-year time frame.

### **Land Absorption Assumptions**

As indicated in Chapter 1, "Introduction," the Land Absorption Study provided an evaluation of the market demand for major land use categories in the Lodi area over a 20-year period (1987-2007). The purpose of the study was to provide market information and forecasts to help guide the formation of the land use options.

Evaluations were prepared for four major land use categories defined by the markets for residential, commercial, office, and industrial land. The market evaluation resulted in 20-year absorption schedules showing cumulative land absorbed in acres in 5-year increments. These evaluations were based on two primary assumptions: a 2.0-percent annual housing stock growth rate compounded over 20 years and a 3.5-percent annual average population increase through 2007. The increment of new land, vacant as of April 1987, needed to satisfy future market demand was assumed in defining Options 2 and 3. (Appendix A contains a copy of the Executive Summary from this study.)



## Buildout Calculation Assumptions

In April 1987, the Lodi Community Development Department conducted a detailed inventory of existing **land** uses in the GP study area (1987 Existing Land Use Inventory). Buildout calculations for the three **land** use options are based on the 1987 Existing Land Use Inventory. The existing conditions baseline data provided in Table 2-1 differ from the existing conditions data provided in the Background Report because Woodbridge data have been eliminated from the GP study area and because the 1987 Existing Land Use Inventory has been refined.

### Committed Undeveloped Lands

A number of parcels surveyed for the 1987 Existing Land Use Inventory were considered to be vacant when in fact a tentative parcel or subdivision map had been approved for them. These committed, undeveloped lands have been included in the calculations of new development based on the approved use and number of units.

### Lodi General Plan Time Frame

Each of the three **land** use options has a 20-year time horizon (1987-2007). Complete buildout of the GP study area is expected to occur within this 20-year time frame. This Options Assessment Report analyzes and compares the impacts of each of the **land** use options.

### Annexation Assumption

Annexation is expected to occur within the GP time frame. Therefore, the Options Assessment Report analyses assume that new development under Options 2 and 3 would be under City jurisdiction at buildout.

### Future Detention Basin/Parks

The need for additional storm drainage detention basins has been estimated based on discussions with City staff (J. Laurence Mintier & Associates 1988). An estimated 8 acres of detention basins (surface area) are required per 100 acres of urban development. Current City policy designates that detention basins also be developed for **park** purposes.

The detention basin sites shown in Figure 2-3 are not proposed locations but possible sites identified for statistical purposes. A preliminary analysis of detention basin and park needs is analyzed in Chapter 8, "Public Services."

## Future School Sites

The need for additional school sites has been estimated based on discussions with Lodi Unified School District (LUSD) staff (J. Laurence Mintier & Associates 1988). According to LUSD staff, the following estimates of school site acreage are used: 10 acres per elementary school, 14 acres per middle school, and 45-50 acres per high school.

The school sites shown in Figure 2-4 are not proposed locations but possible sites identified for statistical purposes. A preliminary analysis of school needs is analyzed in Chapter 8, "Public Services."

## Industrial Reserve

It is assumed that some undeveloped, underdeveloped, or agriculturally used land north of Kettleman Lane between the existing city limits and the CCTC tracks would develop with industrial uses beyond the 20-year time frame of the Lodi GP (Figure 2-5). An industrial reserve land use category has therefore been created for this land.

Currently, the existing GP and zoning ordinance designate this area for **industrial** uses. Market forecasts generated for the GP Update, however, do not indicate that this area would be absorbed during the GP time frame. Therefore, the City has created an industrial reserve category to set aside this area for industrial development past the GP time frame.

## DESCRIPTION OF LAND USE OPTIONS

Each of the three land use options described below represents a different land use scenario for future growth in the Lodi GP study area.

The Options Assessment Report will assess and compare the impacts of buildout of the GP study area in accordance with the land uses designated under Options 1, 2, and 3.

### Option 1

Option 1 reflects the adopted Lodi GP as modified by Ordinance No. 1237 (Measure A), which amended the Land Use Element of the Lodi GP by removing from the Land Use Element any area not within the city limits. Measure A requires that annexation of properties to the City for development purposes must be approved by a vote of the

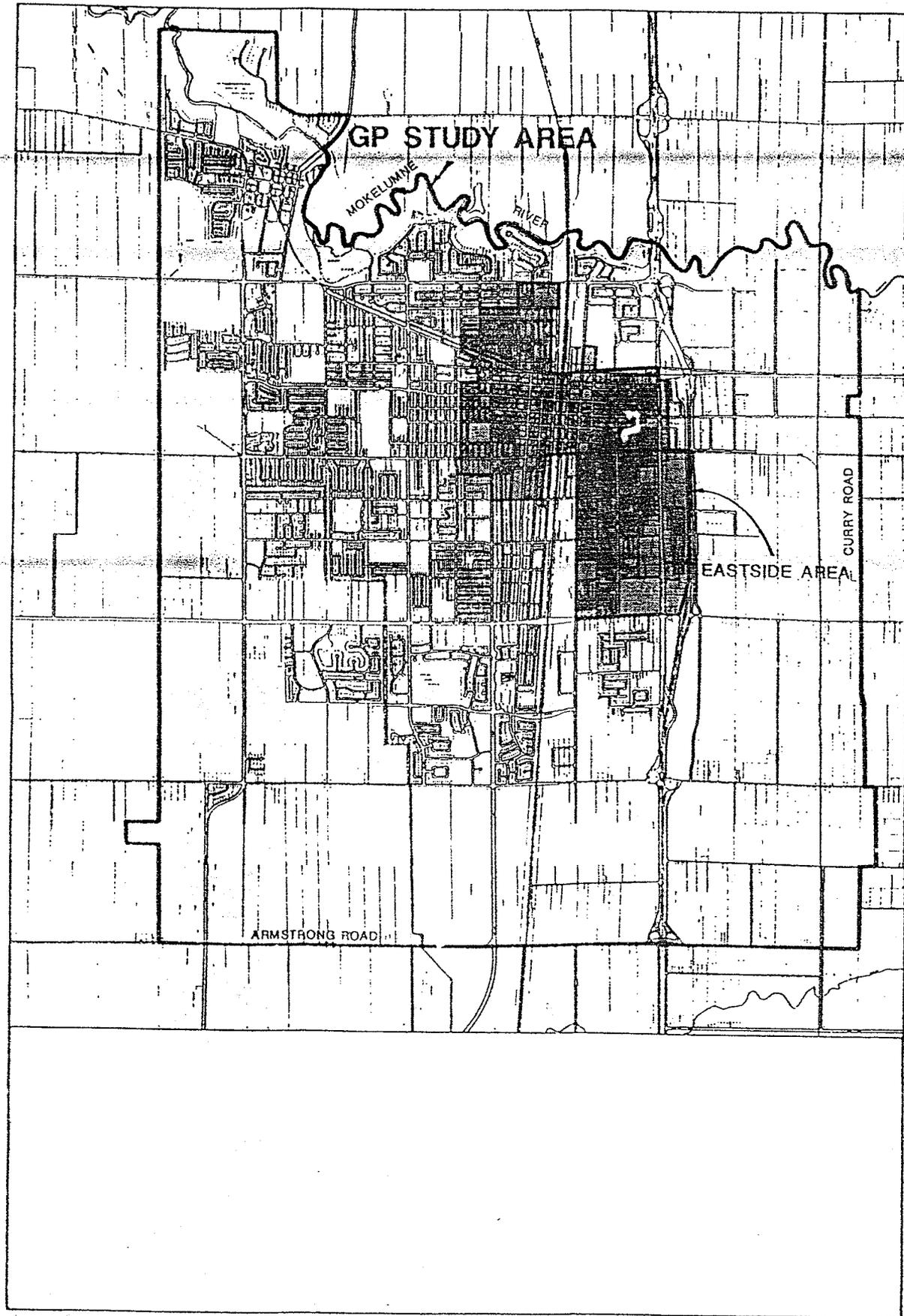
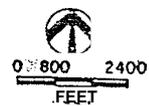
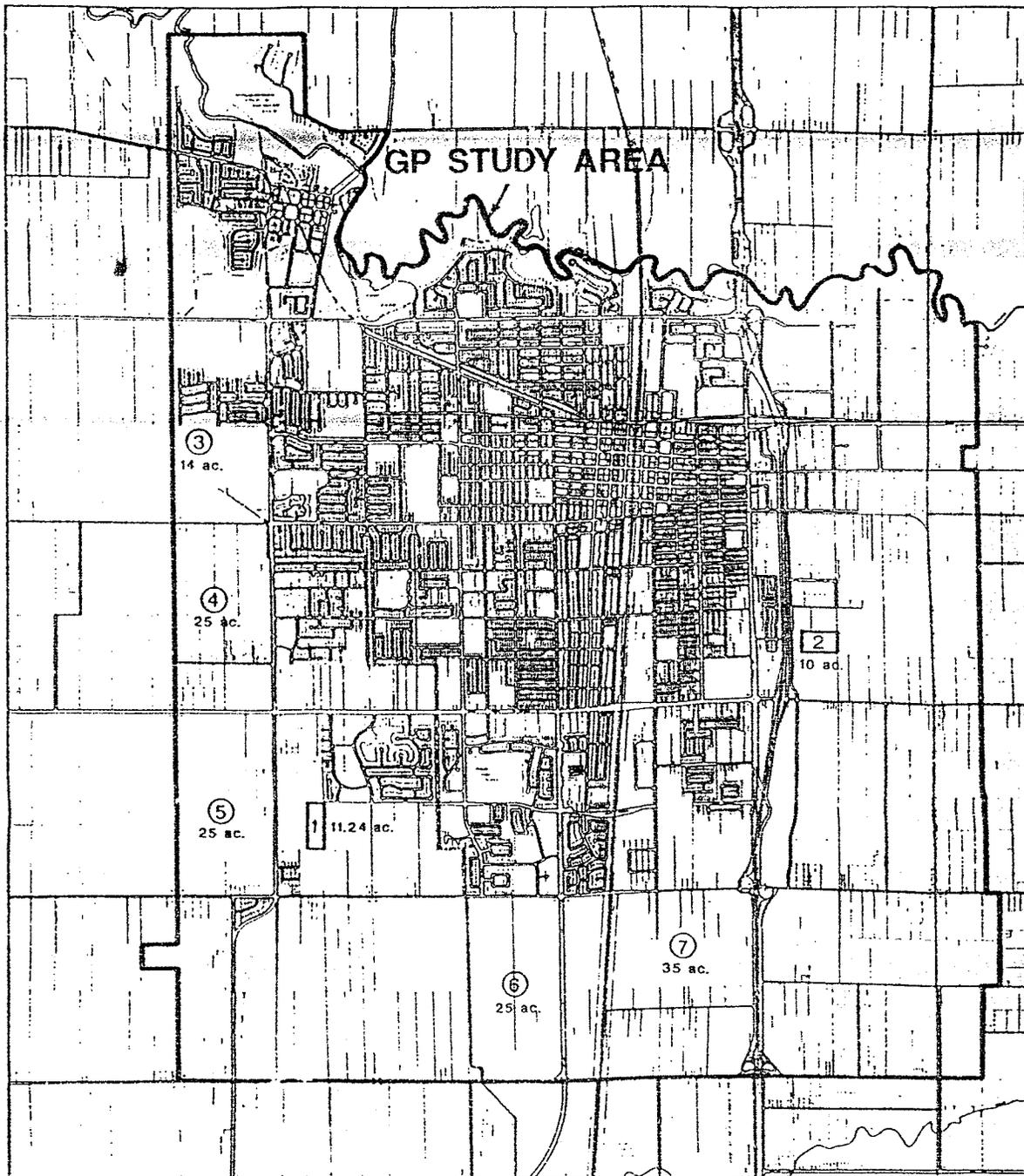


FIGURE 2-2. LODI GP STUDY AND EASTSIDE AREAS

Lodi General Plan



FEET



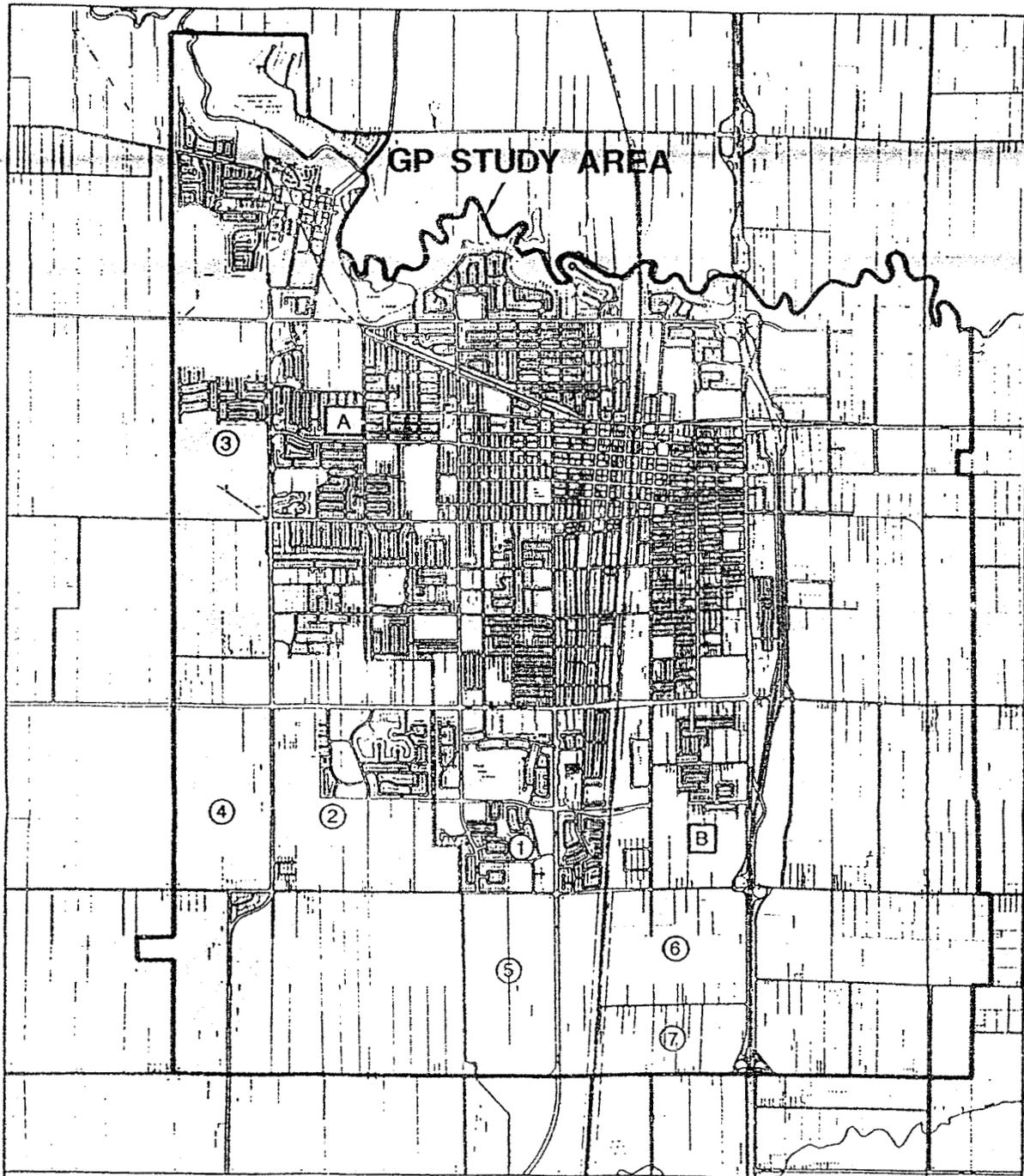
Land Use Option 1: None  
 Land Use Option 2: 1-5  
 Land Use Option 3: 1-7

FIGURE 2-3. STORM DRAINAGE DETENTION BASINS/PARKS

Source: J. Laurence Mintler & Associates 1988

Lodi General Plan



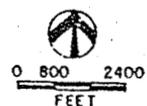


Land Use Option 1: Middle School A: Elementary School 1  
 Land Use Option 2: Middle School A; High School B; Elementary Schools 1-4  
 Land Use Option 3: Middle School A: High School B; Elementary Schools 1-7

FIGURE 2-4. SCHOOL SITES

Source: J. Laurence Mintler & Associates 1988

Lodi General Plan



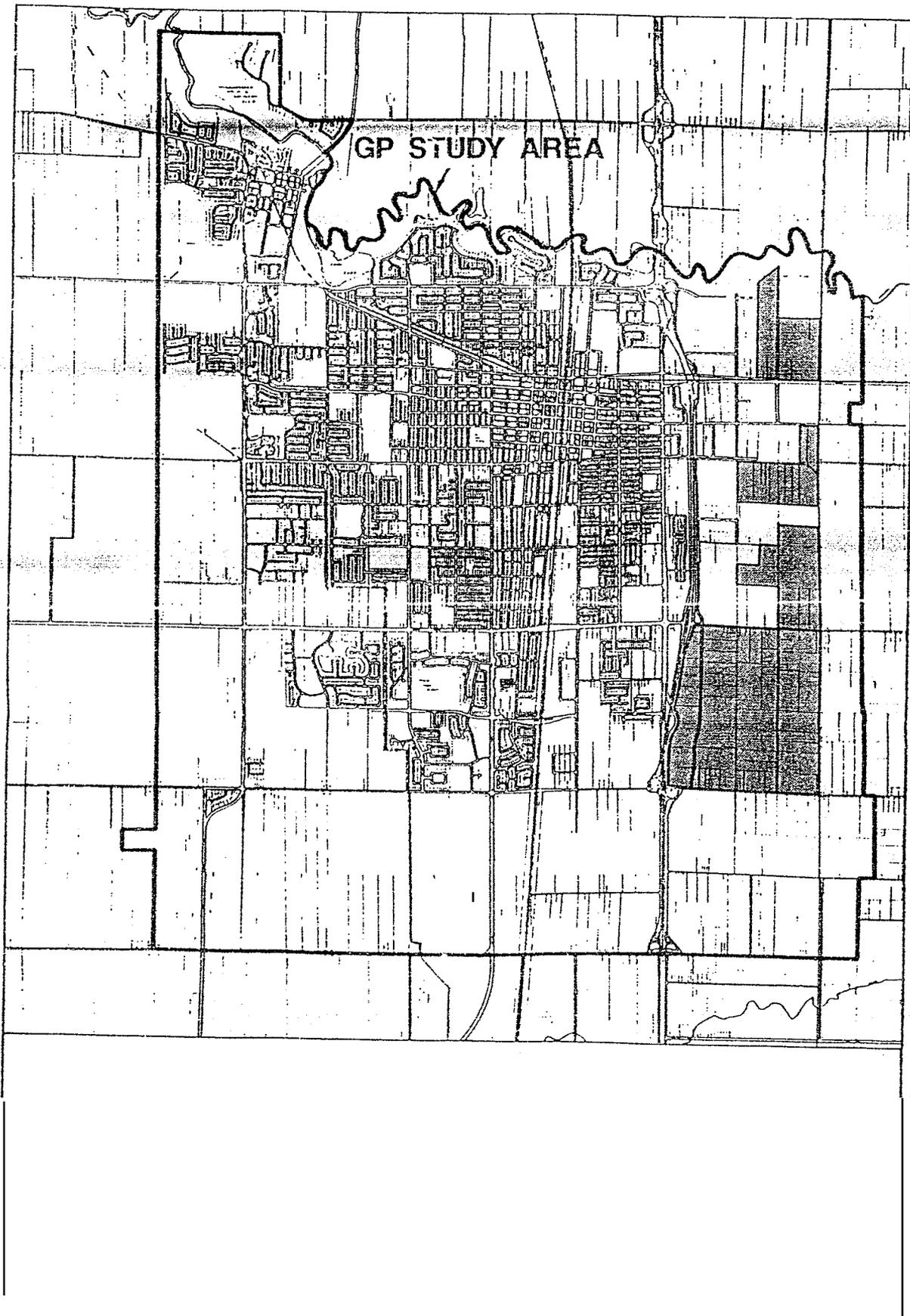


FIGURE 2-5. INDUSTRIAL RESERVE (OPTIONS 2 AND 3)

Source: J. Laurence Mintler & Associates 1988

Lodi General Plan



electorate. This option also reflects the adopted GP as modified by Ordinance No. 1409, which limits new residential development in the Eastside study area to a maximum density of 7 dwelling units per gross acre.

For purposes of analyzing and comparing the three land use options, the existing GP land use designations were translated into the proposed GP land use designations. In some areas, **adjustments** were made to reflect development that **has** occurred and to provide consistency between the GP and zoning.

Under Option 1, no new detention basins are designated. Two existing sites are planned for detention basins C-Basin and G-Basin.

One additional elementary school is designated under this option (Figure 2-4) because the LUSD is currently constructing an elementary school at Scarborough Drive and Wimbledon Drive. In addition, the LUSD is planning to construct a new middle school on LUSD-owned property located on Mills Avenue near West Elm Street.

Option 1 identifies a 9-acre developed parcel at the southwestern corner of Lower Sacramento and Turner Roads with redevelopment potential. The land use is expected to shift from office to neighborhood/community commercial.

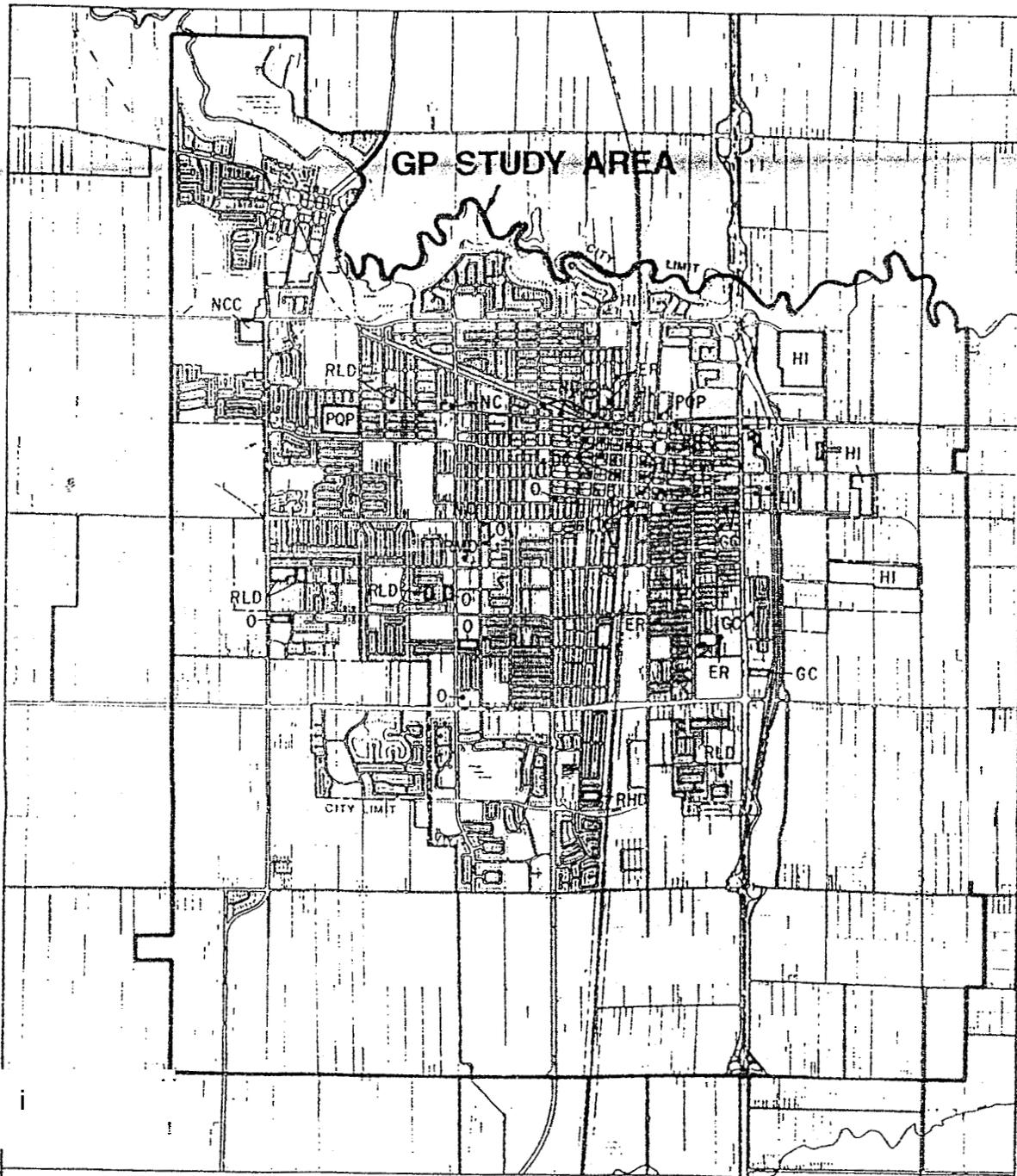
### **Buildout Land Uses**

The Option 1 land use map is shown in Figure 2-5. Table 2-1 presents the increment of new growth and total acres by proposed GP designation expected under buildout of Option 1 in 2007.

Option 1 proposes 588 acres of new development, of which 364, or 62 percent, are committed but undeveloped. Of the total new development, 34 percent is designated as residential (50 percent low density residential, 16 percent medium density residential, 2 percent high density residential, and 2 percent Eastside residential), 4 percent commercial (52 percent neighborhood/community, 35 percent general commercial, and 13 percent downtown commercial), 7 percent office, 46 percent industrial (11 percent Light and 89 percent Heavy), and 10 percent public/quasi-public. Option 1 does not designate any new acreage as detention basin/park, agriculture, or industrial reserve.

Under Option 1, a total of 1,338 new dwelling units are proposed (874 low density residential, 341 medium density residential, 87 high density residential, and 36 Eastside residential). Of the 1,338 units, 783 low density residential, 325 medium density residential, 10 high density residential, and 25 Eastside residential units are considered committed but undeveloped.

A total of 2,935 new employees are projected from development of commercial, office, industrial, and public/quasi-public uses.



**LEGEND**

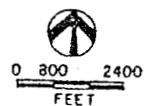
- RLD RESIDENTIAL LOW DENSITY
- RMD RESIDENTIAL MEDIUM DENSITY
- RHD RESIDENTIAL HIGH DENSITY
- ER EASTSIDE RESIDENTIAL
- NCC NEIGHBORHOOD/COMMUNITY COMMERCIAL
- GC GENERAL COMMERCIAL
- DC DOWNTOWN COMMERCIAL
- O OFFICE
- LI LIGHT INDUSTRIAL
- HI HEAVY INDUSTRIAL
- POP PUBLIC/QUASI-PUBLIC

Note: Does not include committed, undeveloped land.

FIGURE 2-6. NEW DEVELOPMENT POTENTIAL (OPTION 1)

Source: J. Laurence Mintler & Associates 1988

Lodi General Plan



## Option 2

Option 2 is based on an assumption that the City would adopt a 2-percent annual residential growth rate and that the mix of new residential development would occur according to the following formula: 65 percent low density residential, 10 percent medium density residential, and 25 percent high density residential. This option assumes that nonresidential development would occur at a moderate rate.

For the incorporated area, Option 2 is identical to Option 1, except that 17 acres of heavy industrial uses east of State Route (SR) 99 have been shifted to light industrial.

For the unincorporated area, new residential and commercial development has been designated west of Lower Sacramento Road and between Kettleman and Harney Lanes. No new development is proposed south of Harney lane. All new industrial development, with the exception of the area along Stockton Street south of Kettleman Lane, would occur within the existing city limits.

Under Option 2, one new detention basin is designated west of Lower Sacramento Road and the E-Basin (Westgate Park) would be expanded in addition to the planned expansion of the detention basins designated under Option 1 (Figure 2-3).

Three new elementary schools and one new middle school are designated in addition to the elementary school designated under Option I (Figure 2-4).

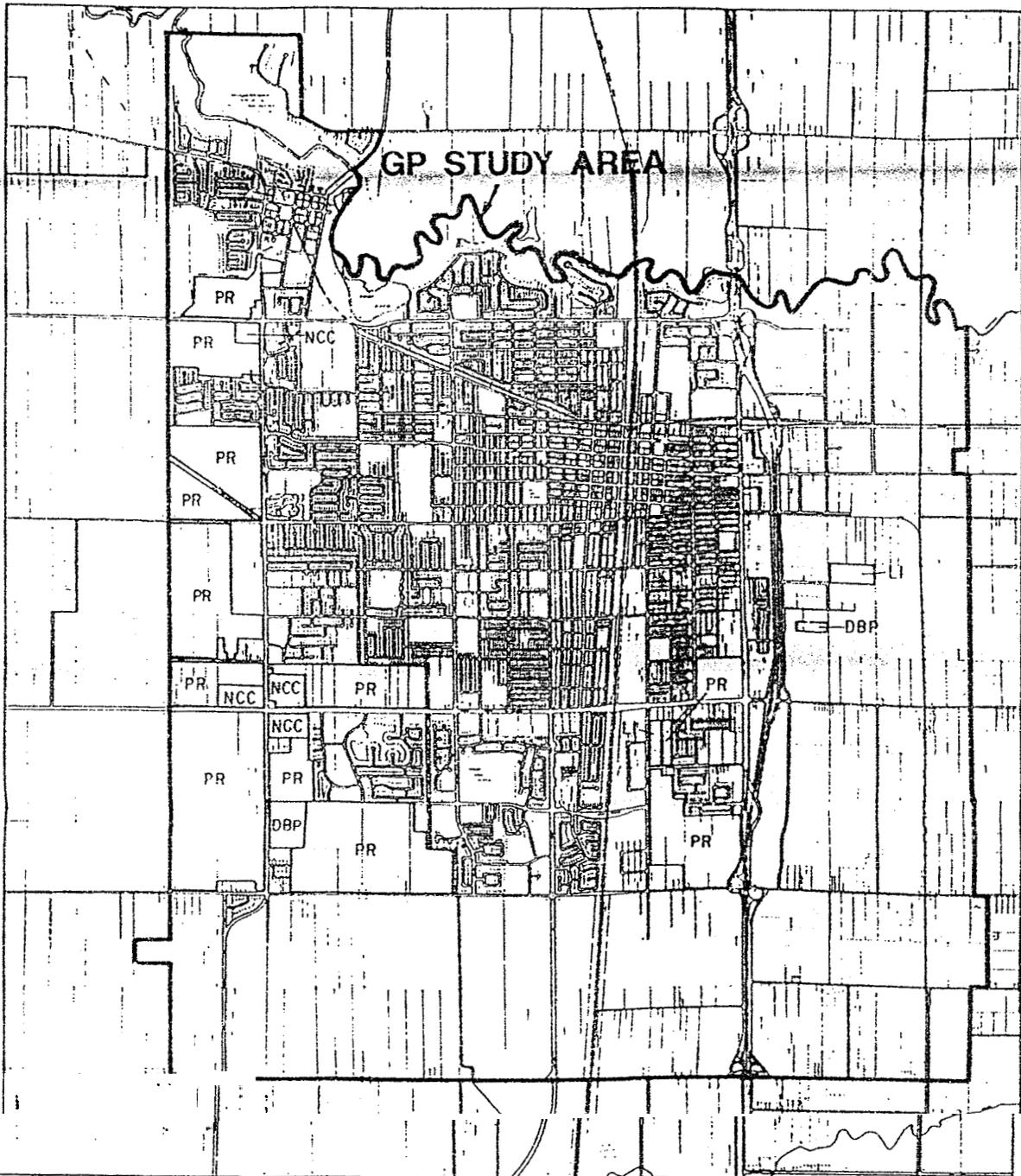
### Buildout Land Uses

The Option 2 land use map is shown in Figure 2-7. Table 2-1 presents the increment of new growth and total acres by proposed GP designation expected under buildout of Option 2 in 2007.

Option 2 proposes 2,071 acres of new development, of which 364, or 18 percent, are committed but undeveloped. Of the total new development, 69 percent is designated as residential (11 percent low density residential, 2 percent medium density residential, less than 1 percent high density residential and Eastside residential, and 86 percent planned residential), 8 percent commercial (57 percent neighborhood/community, 41 percent general commercial, and 2 percent downtown commercial), 2 percent office, 14 percent industrial (20 percent Light and 80 percent Heavy), 4 percent public/quasi-public, and 4 percent detention basin/park. Option 2 also designates an estimated 1,006 acres as agriculture and 999 acres as industrial reserve.

Under Option 2, a total of 9,992 new dwelling units are proposed, (574 low density residential, 341 medium density residential, 87 high density residential, 36 Eastside residential, and 8,654 planned residential). Of the 9,992 units, 783 low-density, 325 medium-density, 10 high-density, and 25 Eastside residential units are considered committed but undeveloped.

A total of 6,812 new employees are projected from development of commercial, office, industrial, and public/quasi-public uses.



**LEGEND**

- RLD RESIDENTIAL LOW DENSITY
- RMD RESIDENTIAL MEDIUM DENSITY
- RHD RESIDENTIAL HIGH DENSITY
- ER EASTSIDE RESIDENTIAL
- NCC NEIGHBORHOOD/COMMUNITY COMMERCIAL
- GC GENERAL COMMERCIAL
- DC DOWNTOWN COMMERCIAL
- O OFFICE
- LI LIGHT INDUSTRIAL
- HI HEAVY INDUSTRIAL
- POP PUBLIC/QUASI-PUBLIC
- PR PLANNED RESIDENTIAL
- DBP DETENTION BASIN/PARK

Note: Does not include committed, undeveloped land.

FIGURE 2 7. NEW DEVELOPMENT POTENTIAL (OPTION 2)

Source: J. Laurence Mintler & Associates 1988

Lodi General Plan



## Option 3

Option 3 is based on an assumption that residential growth would occur at a 3.5-percent annual rate either by policy action of the City or **as a** result of market forces. New residential development would occur according to the following formula: 65 percent low density residential, 10 percent medium density residential, and 25 percent high density residential. This option also assumes that nonresidential development would occur according to historical market forces.

For the incorporated area, Option 3 is identical to Option 1, except that 66 acres of heavy industrial uses east of SR 99 have been shifted to light industrial.

For the unincorporated area, new residential development is similar to that under Option 2, except that it extends south of Harney Lane to Armstrong Road between the WID Canal and SR 99. Compared to Option 2, commercial development has been expanded significantly along Kettleman Lane and the intersection of Harney Lane and Hutchins Street.

Under Option 3, two new detention basins are designated south **of** Harney Lane, in addition to the two existing sites planned for detention basins **under** Option 1 and the one new detention basin designated west of Lower Sacramento Road and the expansion of E-Basin designated under Option 2.

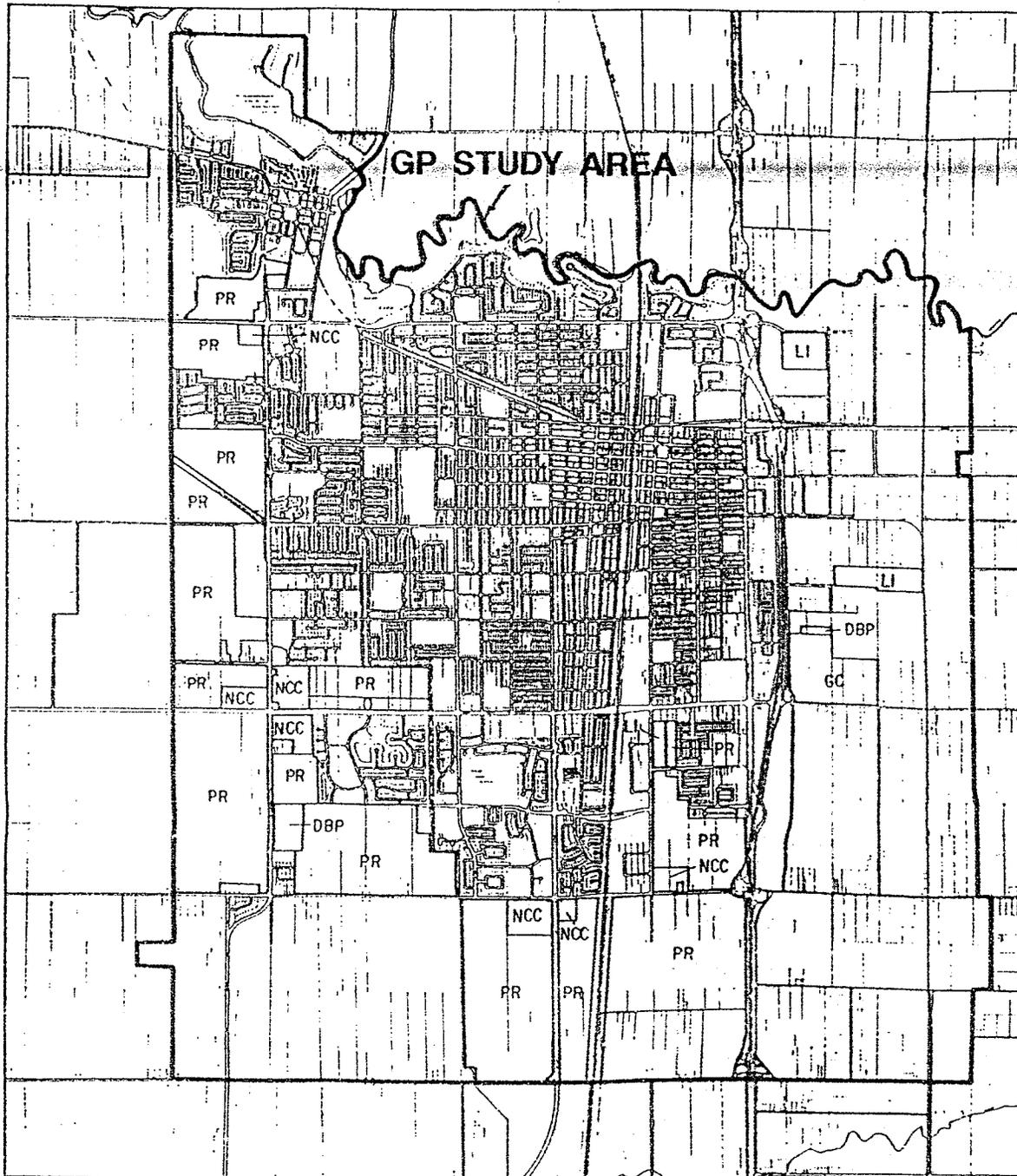
Six new elementary schools and one new middle school are designated under Option 3, in addition to the schools designated under Options 1 and 2 (Figure 2-4).

### Buildout Land Uses

The Option 3 land use map is shown in Figure 2-8. Table 2-1 presents the increment of new growth and total acres by proposed GP designation expected under buildout of Option 3 in 2007.

Option 3 proposes 3,036 acres of new development, of **which 364**, or 12 percent, are committed but undeveloped. Of the total new development, 71 percent is designated as residential (11 percent low density residential, 2 percent medium density residential, less than 1 percent high density residential and Eastside residential, and 86 percent planned residential), 8 percent commercial (57 percent neighborhood/community, 41 percent general commercial, and 2 percent downtown commercial), 2 percent office; **14** percent industrial (20 percent Light and **50** percent Heavy), **4** percent public/quasi-public, and **6** percent detention basin/park. Option 3 also designates an estimated 1,996 acres as agriculture and 955 acres as industrial reserve.

Under Option 3, a total of 15,057 new dwelling units are proposed (874 low density residential, 341 medium density residential, 87 high density residential, 36 Eastside residential, and 13,719 planned residential). Of the 13,719 units, 753 low density residential,



**LEGEND**

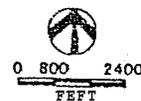
- |                                       |                          |
|---------------------------------------|--------------------------|
| RLD RESIDENTIAL LOW DENSITY           | PR PLANNED RESIDENTIAL   |
| RMD RESIDENTIAL MEDIUM DENSITY        | DBP DETENTION BASIN/PARK |
| RHD RESIDENTIAL HIGH DENSITY          |                          |
| ER EASTSIDE RESIDENTIAL               |                          |
| NCC NEIGHBORHOOD/COMMUNITY COMMERCIAL |                          |
| GC GENERAL COMMERCIAL                 |                          |
| DC DOWNTOWN COMMERCIAL                |                          |
| O OFFICE                              |                          |
| LI LIGHT INDUSTRIAL                   |                          |
| HI HEAVY INDUSTRIAL                   |                          |
| POP PUBLIC/QUASI-PUBLIC               |                          |

Note: Does not include committed, undeveloped land.

FIGURE 2-8. NEW DEVELOPMENT POTENTIAL (OPTION 3)

Source: J. Laurence Miller & Associates 1988

Lodi General Plan



325 medium density residential, 10 high density residential, and 25 Eastside residential units are considered committed but undeveloped.

A total of 9,775 new employees are projected from development of commercial, office, industrial, and public/quasi-public uses.



## **CHAPTER 3. Summary of Impacts**

---

Table 3-1 presents a summary of impacts by land use option. For detailed discussions of these impacts, refer to the appropriate chapters following this chapter,

Table 3-1. Summary of Impacts by Land Use Option

Issue Area	Option 1	Option 2	Option 3
LAND USE	Conversion of 588 acres of vacant open space and agricultural land.	Conversion of 2,071 acres of vacant open space and agricultural land.  Removal of 1,270 acres of land from agricultural production.  Conversion of 500 acres of land under Williamson Act contract.  Extension of the urban-rural-agricultural interface.  Agricultural-residential land use conflicts.	Conversion of 3,016 acres of vacant open space and agricultural lands to urban uses.  Removal of 2,200 acres of land from agricultural production.  Conversion of 500 acres of land under Williamson Act contract.  Extension of the urban-rural-agricultural interface.  Agricultural-residential land use conflicts.
HOUSING	Addition of 1,338 housing units (874 low density, 311 medium density, 87 high density, and 16 Eastside residential).  Housing to jobs deficiency of 1,127 units.	Addition of 9,992 housing units (6,499 low density, 1,206 medium density, 2,251 high density, and 36 Eastside residential).  Housing to jobs excess of 4,270 units.	Addition of 15,057 housing units (9,791 low density, 1,111 medium density, 1,511 high density, and 36 Eastside residential).  Housing to jobs excess of 6,813 units.
POPULATION	Population increase of 3,479.	Population increase of 25,979.	Population increase of 39,148.
EMPLOYMENT	Employment generation of 2,935.	Employment generation of 6,812.	Employment generation of 9,778.
PUBLIC SERVICES			
Water	Generate a demand for an additional 7 wells.  Need for additional pipelines.	Generate a demand for an additional 17 wells.  Need for additional pipelines.	Generate a demand for an additional 24 wells.  Need for additional pipelines.
Wastewater	Need for parallel sewers to relieve existing sewers.	Need for parallel sewers to relieve existing sewers, new north-south trunk sewer, additional pump stations, and force mains.	Need for parallel sewers to relieve existing sewers, new north-south trunk sewer, new east-west trunk sewer, additional pump stations, and force mains.
Drainage	Portion of the planned master storm drainage system lying outside of the UP area resulting in problems with the scheduled completion of the improvements currently underway.	Require one additional storm drainage detention basin with incoming trunk lines and an outlet pipe.	Require three additional storm drainage detention basins and additional trunk and outlet lines.
Law Enforcement	Generate a demand for an additional 14 officers and four additional patrol vehicles.	Generate a demand for additional 48 officers and 12 additional patrol vehicles.	Generate a demand for an additional 68 officers and an additional 17 patrol vehicles.

Table 3-1. Summary of Impacts by Land Use Option

Fire Protection	<p>Need for a new station to cover development in the western part of the City.</p> <p>Generate a demand for an additional 12 firefighters and six apparatus.</p>	<p>Require additional administrative personnel, additional office space, and possibly expansion of the existing jail.</p> <p>Need for a new station to cover development in the western part of the City.</p> <p>Generate a demand for an additional 15 firefighters and accompanying apparatus.</p> <p>Need for possibly a fifth fire station, one additional engine company, nine firefighters, and one accompanying apparatus if further study of existing and planned fire station adequacy determines that the department cannot adequately serve the southwestern part of the City with four stations.</p>	<p>Require additional administrative personnel and dispatchers, additional office space, expansion of both the existing jail and dispatching center, and a new beat in the southern portion of the City.</p> <p>Need for a new station to cover development in the western part of the City.</p> <p>Generate a demand for an additional 26 firefighters, three accompanying apparatus, and one additional engine company.</p> <p>Need for possibly a fifth fire station and one accompanying apparatus if further study of existing and planned fire station adequacy determines that the department cannot adequately serve the southwestern and southeastern parts of the City with four stations.</p>
Parks and Recreation	<p>Generate a need for an additional 162 acres of developed parkland.</p>	<p>Generate a need for an additional 337 acres of developed parkland. An estimated 122 acres would consist of storm drainage detention basins and parks, therefore, the remaining 265 acres should consist of neighborhood and community parks.</p>	<p>Generate a need for an additional 519 acres of developed parkland. An estimated 208 acres would consist of storm drainage detention basins and parks, therefore, the remaining 311 acres should consist of neighborhood and community parks.</p>
Schools	<p>Generate an additional 928 students.</p> <p>Need for the conversion of existing schools and need for the three proposed elementary and two proposed middle schools.</p>	<p>Contract an additional 6,917 students.</p> <p>Need for five elementary and three middle schools and one additional high and continuation school.</p>	<p>Generate an additional 10,171 students.</p> <p>Need for seven elementary and three middle schools and one additional high and continuation school.</p>
-----			
TRANSPORTATION	<p>Increase the total vehicle miles traveled.</p> <p>Require 13.7 miles of two-lane arterials, 6.6 miles of four-lane undivided roads, 8.5 miles of four-lane divided roads, and zero miles of six-lane divided roads.</p>	<p>Increase the total vehicle miles traveled.</p> <p>Require 12.1 miles of two-lane arterials, 10.0 miles of four-lane undivided roads, 7.3 miles of four-lane divided roads, and 2.0 miles of six-lane divided roads.</p> <p>Create a need for additional street personnel.</p>	<p>Increase the total vehicle miles traveled.</p> <p>Require 10.9 miles of two-lane arterials, 16.4 miles of four-lane undivided roads, 7.3 miles of four-lane divided roads, and 2.0 miles of six-lane divided roads.</p> <p>Create a need for additional street personnel.</p>
-----			



## CHAPTER 4. Land Use

### OPTION 1

Because this option is essentially identical to the City's existing General Plan, which limits development to lands within the existing City limits, the implications of Option 1 with respect to existing land use patterns, zoning, residential densities, commercial areas, and industrial areas are minimal.

Implementation of Option 1 would result in the conversion of approximately 588 acres of vacant open space and agricultural lands to urban uses, resulting in a substantial irreversible land use change (Table 4-1). Of these 588 acres, an estimated 158 acres are in intensive agricultural production (1987 Existing Land Use Inventory). All of these 158 acres are targeted for urban development in the existing GP. This acreage, located in the eastern portion of the City, consists of parcels ranging from 1.4 to 27.1 acres, most of which (143 acres) are designated on the adopted GP and zoning maps as heavy industrial. Because of their relatively small size and proximity to existing urban uses, the viability of these parcels for continued agricultural use is limited. Option 1, therefore, designates only marginal agricultural land for conversion to urban uses.

The primary concern regarding land use conflicts under this option pertains to existing conflicts. Areas where conflicts currently exist include South Sacramento Street, where single family residential uses abut industrial uses; Kettleman Lane, where pressure for strip commercial development has encroached on single family residential areas; and in peripheral areas, where residential development abuts agricultural uses. The first two conflicts are the result of past land use decisions, and the third is inevitable in rural, agricultural communities experiencing urban growth. Again, because this option follows the basic land use pattern set forth on the adopted GP map, these conflicts would not be aggravated or increased by implementation of this option.

In addition to the development of vacant land, Option 1 calls for the redevelopment of underutilized parcels, most of which are located in the Eastside area. Such redevelopment activity would have a positive impact on the City's existing development pattern.

### OPTION 2

Implementation of Option 2 would result in the conversion of approximately 2,071 acres of vacant open space and agricultural land to urban uses, resulting in a substantial irreversible land use change (Table 4-1). Of these 2,071 acres, an estimated 1,270 acres are in intensive agricultural production, 500 of which are currently under Williamson Act contract (1957 Existing Land Use Inventory).

Table 4-1. Agricultural Land Conversion by Land Use Option  
(in acres)

	Option 1	Option 2	Option 3
New urban development	588	2,071	<b>3,036</b>
Converted agricultural land	158	1,270	2,200
Converted agricultural land under Williamson Act contract	0	500	500

Source: 1987 Existing Land Use Inventory.

Implementation of Option 2 would remove land from agricultural production, extend the urban-rural-agricultural interface, and result in agricultural-residential conflicts.

The existence of residential development adjacent to agricultural uses often presents the following land use conflicts:

- o **Use of Chemicals.** Residential development proximate to agricultural operations often limits growers in determining when and how they can apply pesticides and what **kind** of pesticides they can apply.
- o **Nuisance Complaints.** Residential development adjacent to agricultural uses could result in complaints about agricultural burning, noise, dust, and odors from adjacent agricultural operations.
- o **Restrictions on Aircraft Application of Chemicals Near Residential Development.** Aircraft application in the vicinity of residential areas, as regulated by the Federal Aviation Administration, prohibits operation of cropduster aircraft over or even near residential areas.
- o **Vandalism and Trespass.** Residential development adjacent to agricultural uses could increase the potential for trespass, vandalism to crops and farm equipment, add to the probability of a lawsuit, and increase waste disposal.

The conflicts associated with the encroachment of urban uses on agricultural activities would, however, be partially minimized because, as detailed in Chapter 2, "Project Description," Option 2 directs new urban development to large blocks of contiguous land defined by streets, canals, or natural features.

The land uses identified within the existing city limits are the same as those identified under Option 1, with the exception of 17 acres of land east of SR 99 being shifted from heavy industrial to light industrial. The potential land use conflicts resulting from Option 2 within the existing city limits would, therefore, be similar to those of Option 1.

For areas outside of the existing city limits, Option 2 minimizes incompatible uses by concentrating new commercial centers at key intersections. Because of the nature of the proposed planned residential designation (see Chapter 2, "Project Description"), it is not currently possible to ensure that high density residential uses, instead of low or medium density uses, would be located proximate to these commercial areas. The high density residential-commercial interface is generally considered compatible.

Implementation of Option 2 would result in the conversion of 1,483 more acres of land. Of these total acres, Option 2 would result in the conversion of 1,112 more acres of productive agricultural land than under Option 1. In addition to existing land use conflicts, Option 2 would result in new agricultural-residential conflicts, and potential commercial-residential conflicts.

## OPTION 3

Implementation of Option 3 would result in the conversion of approximately 3,036 acres of vacant open space and agricultural lands to urban uses, resulting in a substantial irreversible land use change (Table 4-1). Of these 3,036 acres, an estimated 2,300 acres are in intensive agricultural production, 500 of which are currently under Williamson Act contract (1987 Existing Land Use Inventory).

Implementation of Option 3 would remove land from agricultural production, extend the urban-rural-agricultural interface, and result in agricultural-residential conflicts. (See Option 2 for a discussion of agricultural-residential conflicts.) The encroachment of urban uses on agricultural activities would, however, be partially minimized because, as detailed in Chapter 2, "Project Description," Option 3 directs new urban development to large contiguous blocks defined by streets, canals, or natural features.

The land uses identified within the existing city limits are the same as those identified under Option 1, with the exception of 66 acres of land east of SR 99, which is being shifted from heavy industrial to light industrial. The potential land use conflicts resulting from Option 3 would, therefore, be similar to those of Option 1.

For areas outside of the existing city limits, Option 3 minimizes incompatible uses by concentrating new commercial centers at key intersections. In addition, land designated for new office development has been located along the western portion of Kettleman Lane, near similar existing and newly developing uses. Because of the nature of the proposed planned residential designation, it is not currently possible to ensure that high density residential uses, instead of low and medium density residential uses, would be located near commercial and office areas and major intersections.

Implementation of Option 3 would result in the conversion of 2,445 more acres of land than Option 1 and 965 more acres of total land than Option 2. Of these 2,448 acres, Option 3 would result in the conversion of 2,042 more acres of productive agricultural land than Option 1 and 930 more acres than Option 2. In addition to existing land use conflicts, Option 3 would result in new agricultural-residential conflicts, potential commercial-residential conflicts, and potential office-commercial conflicts.

## IMPLICATIONS FOR THE GENERAL PLAN

### Option 1

- o Option 1 does not propose land uses that would aggravate existing conditions or reduce the amount of land identified for agricultural use under the adopted GP. The only agriculturally used land that would be converted to urban uses is dispersed mostly throughout the eastern portion of the City on relatively small parcels. *This* land is only marginally viable as agricultural land.

## Option 2

- o Consider approving only those development proposals that promote infill development and development that is contiguous to existing developed areas. Promoting infill development could entail establishing comprehensive development phasing programs tied to the provision of public facilities and services.
- o Consider requiring specific plans for areas of new development to ensure orderly, well-planned growth. Specifically, require that planned residential developments be spatially arranged to ensure that high density uses are located proximate to commercial areas and major intersections.
- o Require site plans to incorporate mitigation measures that reduce adverse effects on adjacent land uses.
- o Consider designating an agricultural buffer between areas identified for urban development and land in intensive agricultural production to minimize agricultural-residential conflicts.
- o Consider adopting right-to-farm policies or a right-to-farm ordinance that recognizes a farmer's right to continue agricultural practices that may at times be considered an inconvenience to nearby residents.

## Option 3

- o The implications for Option 3 would be the same as those for Option 2.



## CHAPTER 5. Housing

### OPTION 1

Option I would allow the addition of a projected 1,338 housing units to Lodi's existing housing stock (Tables 2-1 and 5-1). Of these 1,338 units, 874 would be low density residential, 341 would be medium density residential, 87 would be high density residential, and the remaining 36 would be in the proposed Eastside residential category, which is low density. An estimated 1,143 of the total 1,338 new units are considered committed, but undeveloped.

The growth of Lodi's housing stock allowed under Option 1 would represent an increase of 7.8 percent over the estimated existing housing stock. Option I would allow Lodi's housing stock to increase at an average rate of 67 units per year over the 20-year GP time frame. This would be lower than Lodi's estimated housing stock growth rate of 502 units per year between 1980 and 1987 (Jones & Stokes Associates 1988a).

Because little vacant land is left in Lodi that is suitable for residential development, virtually all of the new units to be developed under Option 1, beyond those units already committed but undeveloped, would be small infill projects.

The primary concern regarding housing impacts pertains to the jobs-housing balance. For purposes of determining housing impacts of the GP, it is assumed that maintenance of an internal jobs/housing balance is a fundamental objective. The concept of balancing housing development with employment generation involves three fundamental relationships:

- o the spatial relationship between employment centers and residential development,
- o the numerical balance between the number of employees generated by non-residential development and the number of housing units developed in residential development, and
- o the qualitative relationship between the cost of housing developed and the income levels of jobs generated in nonresidential developments.

The fundamental objective of maintaining a jobs/housing balance is to reduce commute distances.

For purposes of calculating the balance resulting from the land uses designated under each option, J. Laurence Mintier & Associates (1988) assumes that Lodi households have an average of 1.25 workers. A balance between the number of housing units developed and the number of jobs generated can, therefore, be calculated by dividing the number of jobs created by the average number of workers per household (1.25) and by adding enough units to achieve a healthy vacancy rate of 5 percent.

Table 5-1. New Housing and Employment Development by Land Use Option

Residential Category	Option 1	Option 2	Option 3
Low density	874	6,499 <sup>a</sup>	9,791 <sup>a</sup>
Medium density	341	1,001 <sup>a</sup>	1,513 <sup>a</sup>
High density	87	2,251 <sup>a</sup>	3,517 <sup>a</sup>
Eastside residential	36	36	36
Total new housing units	1,335	9,992	15,057
New jobs created	2,935	6,812	9,778

<sup>a</sup> Includes units that would be developed under the proposed planned residential designations. The planned residential designation assumes a distribution of 65 percent low density, 10 percent medium density, and 25 percent high density.

Application of this formula to existing conditions shown in Table 2-1 indicates that Lodi has a slight surplus of housing units with approximately 2,400 Lodi residents commuting to jobs outside of Lodi.

Implementation of Option 1 would increase employment within Lodi by a projected 2,935 (Tables 2-1 and 5-1). (See also Chapter 7, "Employment.") The majority of these new jobs, 1,293, would be created by the industrial development designated in the eastern portion of the City. According to the jobs-housing formula provided above, the number of new employees generated under Option 1 would create a demand for an additional 2,465 housing units. Option 1 would, therefore, result in a housing deficiency of 1,127 units. This deficiency may, however, be slightly distorted because, according to the 1980 U. S. Census, of the 94 percent of Lodi heads of households working in San Joaquin County, only 62 percent work in Lodi (Jones & Stokes Associates 1988a). Under this option, there is not enough land within the existing city limits to accommodate the number of housing units necessary to house the employees generated from buildout of nonresidential land.

Given the inability to achieve an adequate balance, the other two balance relationships described above, **spatial and** qualitative, could not be satisfactorily accomplished under Option 1.

The lack of land identified for new residential development would also have a negative effect on the existing housing market because it would limit the amount of housing available, thereby potentially increasing the demand for, and consequently the cost of, existing housing.

## OPTION 2

Option 2 would allow the addition of a projected 9,992 housing units to Lodi's existing housing stock (Tables 2-1 and 5-1). The majority of new units would be developed under the proposed planned residential land use designation, which assumes a distribution of 65 percent low density residential units, 10 percent medium density residential units, and 25 percent high density residential units. Applying this distribution, an estimated 5,625 low density, 1,565 medium density, and 2,163 high density units would be developed under the planned residential designation. Therefore, the total number of new units under each land use category would be 6,499 low density, 1,206 medium density, 2,251 high density, and 36 Eastside residential units.

The growth of Lodi's housing stock allowed under Option 2 would represent an increase of 58 percent over the estimated existing housing stock. Option 2 would allow Lodi's housing stock to increase at an average rate of 500 units per year over the 20-year GP time frame.

Implementation of Option 2 would increase employment within Lodi by a projected 6,812 (Tables 2-1 and 5-1). (See also Chapter 7, "Employment.")

According to the jobs-housing formula provided under Option 1, the number of housing units necessary to accommodate new employees in Lodi would be 5,722. Under

this option, an excess of 4,270 units is projected. The apparent oversupply of residential land would, however, accommodate new residents who would commute to jobs outside of Lodi or provide Lodi housing if additional industrial development occurs.

Although housing would exceed the number of new jobs, the affordability of housing for low- and moderate-income workers, would not be guaranteed. The unavailability of affordable housing could lead to workers commuting into Lodi, resulting in traffic circulation problems. The proposed planned residential designation, however, attempts to provide affordable housing by requiring new development to provide a combination of low-, medium-, and high-density units.

In identifying proposed land use categories for the GP, the planned residential category was formulated to provide a qualitative internal balance among housing types. Accordingly, the relationship between the cost of new units and the income levels of expected new jobs would be positive. Most of the new job growth in Lodi is expected to be either in the industrial sector or in local-serving commercial operations, with little office employment. It is expected that the income characteristics of these employees would result in the absorption of a higher percentage of the new medium- and high-density units developed under Option 2. The remaining lower density units could be expected to accommodate new residents commuting to job markets with higher-income-generating employment sectors.

Because Lodi is relatively small and isolated, the spatial relationship which usually plays such an important role in the consideration of the jobs-housing balance, is less crucial. The spatial balance resulting from Option 2 is therefore assumed to be positive.

Implementation of Option 2 would result in 8,654 more housing units than under Option 1. Housing units provided under this option would exceed the demand for new units generated by new employees, resulting in an oversupply of 4,270 units.

### OPTION 3

Option 3 would allow the addition of a projected 15,057 housing units to Lodi's existing housing stock (Tables 2-1 and 5-1). An estimated 13,719 of the new units developed under Option 3 would be in the planned residential designation, resulting in 8,917 new low density residential units, 1,372 new medium density residential units, and 3,430 new high density residential units. The total number of new units developed under each land use category would, therefore be 9,791 low density, 1,713 medium density, 3,517 high density, and 36 Eastside residential units.

The growth of Lodi's housing stock allowed under Option 3 would represent an increase of 88 percent over the estimated existing housing stock. Option 3 would allow Lodi's housing stock to increase at an average rate of 753 units per year over the 20-year GP time frame.

Implementation of Option 3 would increase employment within Lodi by a projected 9,773 (Tables 2-1 and 5-1). (See also Chapter 7, "Employment.")

According to the jobs-housing formula provided under Option 1, the number of housing units necessary to accommodate new employees would be 8,214. Under this option, ~~an excess of 6,843 units is projected.~~ As described above for Option 2, this oversupply would presumably be absorbed by new residents employed outside of Lodi or provide Lodi housing if additional industrial development occurs.

Although the number of new housing units would exceed the demand generated by new employees, the affordability of housing for low- and moderate-income workers would not be guaranteed. (See above discussion for Option 2.)

Because the assumptions used to identify residential land under Option 3 are virtually the same as under Option 2, and because of the nature of the proposed planned residential land use category, the spatial and qualitative jobs-housing impacts of Option 3 would be similar to those of Option 2.

Implementation of Option 3 would result in 13,719 more housing units than Option 1 and 5,065 more housing units than Option 2. Housing **provided** under this option would exceed the number of new jobs, resulting in an oversupply of 6,843 housing units, 2,573 more units than under Option 2.

## IMPLICATIONS FOR THE GENERAL PLAN

### Option 1

- o Additional residential land would be needed to achieve an adequate jobs-housing balance.

### Option 2

- o Consider conducting an annual employee survey of large firms in the GP area to gather useful data on housing; income, and commuting trends. (See Chapter 7, "Employment," for further discussion.)

### Option 3

- o The implications for Option 3 would be the same as those under Option 2.



## CHAPTER 6. Population

### OPTION 1

Under Option 1, future growth in Lodi would be directed by the adopted Lodi General Plan. Little additional growth would occur under Option 1 since most of the residential land within the existing city limits has been developed.

Vacant residential lands within the existing city limits would accommodate the development of an additional 1,338 housing units. Based on full occupancy of additional housing units and an average household size of 2.6 persons per unit, the additional housing units would accommodate a population increase of 3,479. As shown in Tables 2-1 and 6-1, Lodi's buildout population under Option 1 would reach an estimated 50,745, representing a 7.4-percent increase over the existing population.

Lodi grew at an estimated average annual rate of 3.5 percent between 1970 and 1987 (Jones & Stokes Associates 1988a). Continued growth at this long-term rate would lead to the absorption of existing vacant parcels within 2-3 years. Implementation of Option 1 would severely limit population growth within Lodi over the 20-year GP buildout period.

### OPTION 2

Under Option 2, future population growth in Lodi would be controlled by a policy limiting the City's annual housing stock growth to 2 percent per year. (See Chapter 2, "Project Description.")

Residential lands designated by Option 2 would accommodate development of an additional 1,338 housing units within the existing city limits and 8,654 housing units within the unincorporated portions of the GP area. Based on full occupancy of additional housing units and an average household size of 2.6 persons per unit, the additional housing units would accommodate a population increase of 25,979. As shown in Tables 2-1 and 6-1, Lodi's buildout population under Option 2 would reach an estimated 73,245, representing a 55-percent increase over the existing population.

Annual population growth over the 20-year GP buildout period would occur at a relatively constant rate because of the housing stock growth rate policy. Based on a population increase of 25,979, Lodi's population would increase at an average annual rate of 2.7 percent over the buildout period. This population growth rate would be below Lodi's estimated 1970-1987 average annual rate of 3.5 percent. Implementation of Option 2 would probably limit the population growth that would occur within Lodi over the 20-year GP buildout period in the absence of the housing stock growth policy.

Table 6-1. Comparison of Approximate Population for Existing Conditions and by Land Use Option

Location Within GP Area	Existing Population	Option 1			Option 2			Option 3		
		Incremental Growth	Bulldout Population	Percent Increase Over Existing	Incremental Growth	Bulldout Population	Percent Increase Over Existing	Incremental Growth	Bulldout Population	Percent Increase Over Existing
City	46,327	3,479	49,805		3,479	49,805		3,479	49,805	
County	940	0	940		22,500	23,440		35,669	36,609	
Total	47,267	3,479	50,745	7.4	25,979	73,245	55.0	39,148	86,414	82.8

Note: Population projections based on an average household size of 2.6 persons per housing unit (Schroeder pers. comm.).

Implementation of Option 2 would generate 22,500 more persons than under Option 1.

### OPTION 3

Under Option 3, future population growth in Lodi would result from an annual 3.5 percent increase in the City's housing stock over the buildout period. The housing stock growth rate would either be controlled by a policy similar to the one proposed under Option 2, or would occur as a result of market forces.

Residential lands designated by Option 3 would accommodate development of an additional 1,335 housing units within the existing city limits and 13,719 housing units within the unincorporated portions of the GP area. Based on full occupancy of additional housing units and an average household size of 2.6 persons per unit, the additional housing units would accommodate a population increase of 39,148. As shown in Tables 2-1 and 6-1, Lodi's buildout population under Option 3 would reach an estimated 86,414, representing an 82.8-percent increase over the existing population.

Annual population growth over the 20-year GP buildout period would occur at a relatively constant rate if controlled by a housing stock growth rate policy. Population growth generated by market forces could vary significantly from year to year. Based on a population increase of 39,148, Lodi's population would increase at an average annual rate of 4.1 percent over the buildout period. This population growth rate would exceed Lodi's estimated 1970-1987 average annual rate of 3.5 percent. Implementation of Option 3 would probably accommodate population growth that would occur in the absence of a growth limitation policy.

The population growth may or may not be limited, however, by a housing stock growth policy. Under market conditions, population growth in Lodi could exceed the 3.5-percent annual average growth rate projected under this option, resulting in secondary impacts on traffic and public services.

Implementation of Option 3 would generate 35,669 more persons than under Option 1 and 13,169 more persons than under Option 2.

## IMPLICATIONS FOR THE GENERAL PLAN

### Option 1

- o No additional policies would be required to minimize the impacts of population growth under this option because relatively little vacant land exists within the city limits. Population growth would be limited by the amount of land available under Option 1.

## Option 2

- o No additional policies would be required to minimize the impacts of population growth under this option because population growth would be largely controlled by the growth policy that would limit annual housing stock growth to 2 percent.

## Option 3

- o Consider adopting a policy limiting the annual growth rate of the housing stock to 3.5 percent to ensure that population growth does not exceed projected levels.



## OPTION 1

Option 1 would designate 390 acres for employment-generating uses, including 23 acres for commercial uses, 38 acres for office uses, 271 acres for industrial uses, and 58 acres for public/quasi-public uses (Table 2-1). Buildout of vacant lands under this option would generate a projected 2,935 new jobs within Lodi, based on employee density factors derived from a study of employment patterns in San Joaquin County (Factor and Schroeder pers. comms.). Two general employment sectors would account for a majority of the new jobs. Employment generated by the use of land designated for heavy industrial development would account for 1,113, or 38 percent of the new jobs, and employment generated by office uses would account for a projected 616, or 21 percent of total new jobs (Table 2-1).

Under Option 1, total employment in Lodi would increase from an estimated existing level of 21,953 to a projected buildout level of 23,585 (Tables 2-1 and 7-1).

The employment mix in Lodi at buildout under Option 1 would not change substantially from the existing employment mix (Table 7-1). Industrial employment would increase slightly from 33.1 percent to 34.5 percent of total employment, and commercial employment would decrease from 45.0 percent to 42.2 percent of total employment.

## OPTION 2

Option 2 would designate 563 acres for employment-generating uses, including 157 acres for commercial uses, 38 acres for office uses, 280 acres for industrial uses, and 88 acres for public/quasi-public uses (Table 2-1). Buildout of designated lands under Option 2 would generate a projected 6,812 new jobs within Lodi. Three general employment sectors would account for a majority of the new jobs. Retail employment generated by the use of land designated for neighborhood/community commercial development would account for 2,520, or 37 percent of the new jobs; employment generated by general commercial uses would account for a projected 1,600, or 23 percent of total new jobs; and, employment in heavy industrial occupations would account for 1,035, or 15 percent of total new jobs (Table 2-1).

Under Option 2, total employment in Lodi would increase from an estimated existing level of 21,953 to a projected buildout level of 25,765 (Tables 2-1 and 7-1).

The employment mix in Lodi at buildout under Option 2 would change substantially in two sectors from the existing employment mix. neighborhood/community commercial employment would increase from 17.6 percent to 22.2 percent of total employment, and

Table 7-1. Comparison of Approximate Employment for Existing Conditions and by Land Use Option

Land Use Designation	Existing Conditions/a			Option 1/b			Option 2/b			Option 3/b		
	Developed Acres	Existing Employment	Percent of Total	Buildout Acres	Buildout Employment	Percent of Total	Buildout Acres	Buildout Employment	% of Total	Buildout Acres	Buildout Employment	% of Total
Commercial												
Neighborhood/community	149	3,874	17.6	161	4,210	16.9						
General	212	5,512	25.1	220	5,712	23.0	239	6,394	22.2	282	7,598	23.9
Downtown	19	494	2.3	22	578	2.3	276	7,112	24.7	317	8,137	25.6
Office	65	1,958	8.9	103	2,574	10.3	22	578	2.0	22	578	1.8
Industrial												
Light	314	4,412	20.1	343	4,592	18.5	103	2,574	8.9	126	2,946	9.3
Heavy	382	2,864	13.0	624	3,977	16.0	369	4,753	16.5	448	5,243	16.5
Public/quasi-public	909	2,839	12.9	967	3,245	13.0	607	3,899	13.6	528	3,536	11.1
Total	2,050	21,953	99.9	2,440	24,888	100.0	2,613	28,765	99.9	2,754	31,731	99.8

Source: a Jones & Stokes Associates 1988a.

b Buildout employment projections calculated by adding the incremental increase in employment under each option to existing employment. Incremental employment was projected based on the following estimates of employees per gross acre (Factor pers. comm.): commercial uses, 28.0; office uses, 16.2; light and heavy industrial uses, 6.2 and 4.6, respectively; and, public/quasi-public, 7.0.

light industrial employment would decrease from 20.1 percent to 16.5 percent of total employment (Table 7-1).

Under Option 2, a large number of new jobs would be generated in Lodi, including a substantial number of jobs in the retail commercial sector. The ability of Lodi to house workers new to the City is dependent upon the availability and affordability of housing. Housing provided under Option 2 would exceed the number of new jobs (see Chapter 5, "Housing," for further discussion); however, the affordability of housing for low- and moderate-income workers, such as retail employees, would not be guaranteed. The unavailability of affordable housing could lead to workers commuting into Lodi, resulting in traffic circulation problems.

Implementation of Option 2 would result in 3,577 more jobs than under Option 1.

### OPTION 3

Option 3 would designate 704 acres for employment-generating uses, including 241 acres for commercial uses, 61 acres for office uses, 280 acres for industrial uses, and 122 acres for public/quasi-public uses (Table 2-1). Buildout of designated lands under Option 3 would generate a projected 9,775 new jobs within Lodi. Two general employment sectors would account for a majority of the new jobs. Retail employment generated by the use of land designated for neighborhood/community commercial development would account for 3,724, or 38 percent of the new jobs, and employment generated by general commercial uses would account for a projected 2,625, or 27 percent of total new jobs (Table 2-1).

Under Option 3, total employment in Lodi would increase from an estimated existing level of 21,953 to a projected buildout level of 31,731 (Tables 2-1 and 7-1).

The employment mix in Lodi at buildout under Option 3 would change substantially in two sectors from the existing employment mix. neighborhood/community commercial employment would increase from 17.6 percent to 23.9 percent of total employment, and Light and heavy industrial employment would decrease from a combined 33.1 percent to 27.6 percent of total employment (Table 7-1).

Implementation of Option 3 would generate 6,843 more jobs than under Option 1 and 2,966 more jobs than under Option 2.

## IMPLICATIONS FOR THE GENERAL PLAN

### Option 1

- o No new policies would be required to minimize problems related to employment growth under Option 1 because the increase in employment under Option 1 would not be substantial and the mix of employment at buildout would not differ

significantly from the existing employment mix. No new policies would be required to minimize problems related to employment growth under Option 1.

### Option 2

- o Consider conducting an annual employee survey of large firms in the GP area to anticipate housing affordability problems. Employee characteristics to be surveyed include: household size, annual personal and household income, monthly housing costs, housing unit purchase price, years in residence, type of housing unit, ease of finding affordable housing, location of residence, commute distance, and reasons for not living in Lodi. Once the information is gathered, the findings should be presented to the Lodi City Council with specific recommendations.
- o Consider establishing an annual program to monitor housing prices in Lodi to anticipate affordability problems.

### Option 3

- o The implications for Option 3 would be the same as those for Option 2.



## CHAPTER 8. Public Services

---

### WATER

This section is based on information provided by Psomas and Associates.

#### Option 1

Implementation of Option 1 would slightly increase the demand for water by increasing the population in the city limits. This increased demand, plus the need to provide adequate reserve capacity requires an additional seven wells, increasing the total to 25 wells (Table 8-1 and Figure 8-1). Also shown in Figure 8-1 are the major pipelines that would be necessary under Option 1. Based on the computer network analysis prepared by Psomas and Associates, the wells and pipelines shown in Figure 8-1 would meet peak-hour, maximum-day, and fire flow demands.

The computer analysis showed that future wells added to the northeastern portion of Lodi would result in higher system efficiency than if located further south or east because of higher groundwater elevations. Because water quality is generally better closer to the Mokelumne River, it is beneficial to locate wells in this area. Although future wells added to the northern portion of the City would generally provide a more efficient system, approximately one well per utility subarea (Figure 8-1) would be required in the southern service areas to meet local peak hour and fire demands.

The lack of existing wells near the downtown area has caused a local depression of the system hydraulic gradient in the center of the City. By adding new wells to the central area of Lodi, system water pressure would be stabilized during high demand periods.

#### Option 2

Implementation of Option 2 would increase the demand for water by increasing the population in the city limits and through annexation of the unincorporated portions of the GP area into the city limits. This increase would generate a demand for an additional 17 wells, increasing the total to 35 wells (Table 8-1 and Figure 8-2). Also shown in Figure 8-2 are the major pipelines that would be necessary under Option 2.

Implementation of Option 2 would require 10 more wells and additional pipelines than under Option 1.

Table 8-1. Future Well Demands by Land Use Option

Subarea <sup>a</sup>	Option 1	Option 2	Option 3
Northwest	0	3	3
Northcentral	3	5	7
Northeast	2	5	8
Southwest	0	2	2
Southcentral	2	2	4
Southeast	0	0	0
Total new wells	7	17	24
Total flow added <sup>b</sup>	7,613	21,163	30,556

<sup>a</sup> See Figure 8-1 for subarea location.

<sup>b</sup> Total peak flow demand added to system network.

Source: Psomas and Associates 1988.

Note: This table is based on the following assumptions:

- o Future well capacity is based on 1,600 gpm at a resulting hydraulic gradient of 172 ft msl
- o Tank level = 165 ft msl
- o Heavy industrial peak-hour demand = maximum day demand
- o All other demands based on an average day per capita flow of 285 gpd
- o Maximum day peak factor = 2.24; peak-hour factor = 3.28
- o Residential fire flow = 2,000 gpm; commercial/industrial fire flow = 3,000 gpm
- o Number of wells is determined by peak-hour demand divided by 1,600 gpm per well plus an additional 20 percent for wells out of service.

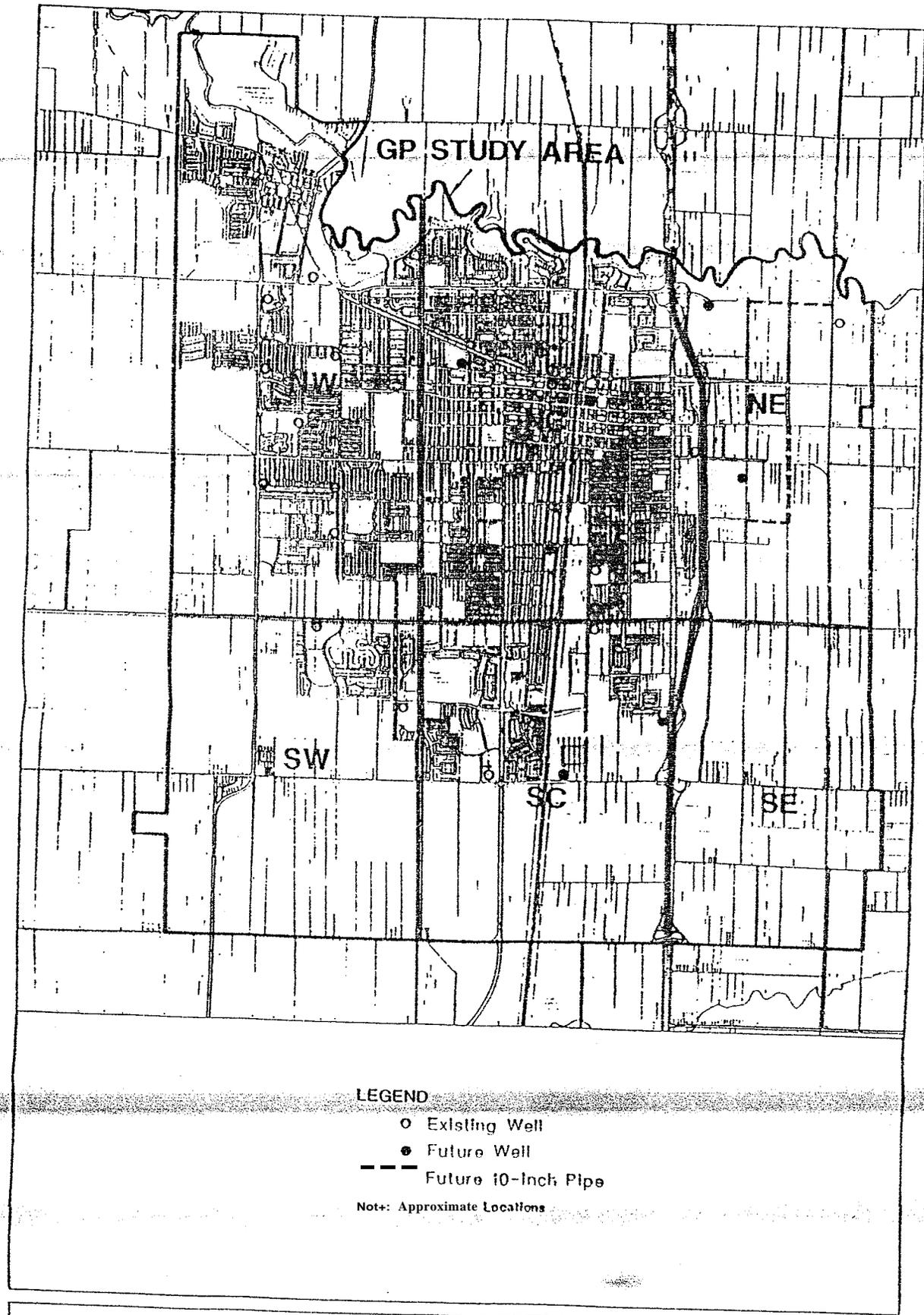
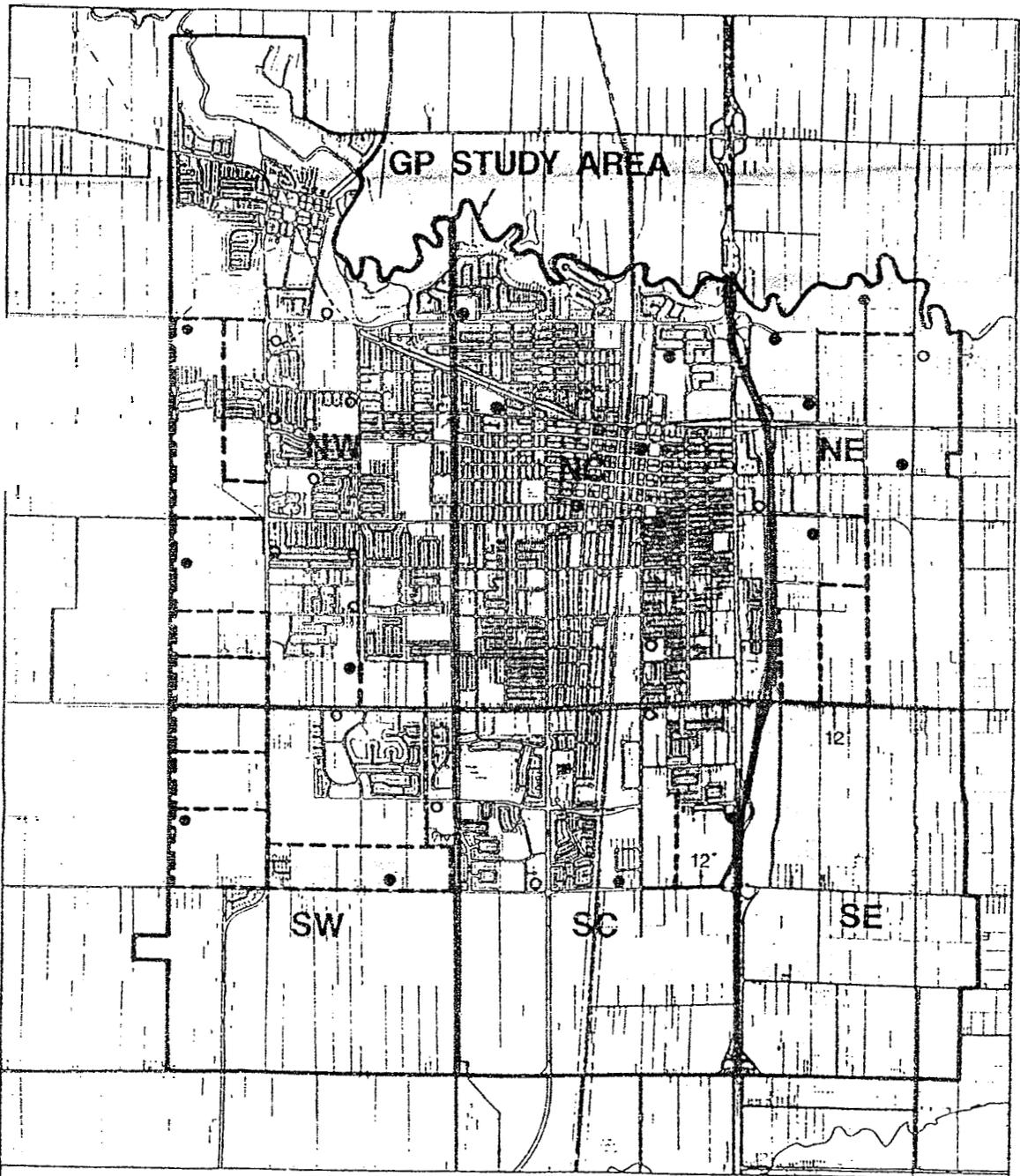


FIGURE 8-1. WATER SYSTEM IMPROVEMENTS REQUIRED UNDER OPTION 1

Source: Peomas and Associates 1988

Lodi General Plan

  
 0 800 2400  
 FEET



**LEGEND**

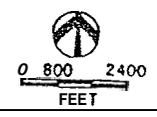
- Existing Well
- Future Well
- Future 10-inch Pipe

Note: Approximate locations. Option 2 also includes improvements required under Option 1.

**FIGURE 8-2. WATER SYSTEM IMPROVEMENTS REQUIRED UNDER OPTION 2**

Source: Peony and Associates, 1988

**Lodi General Plan**



## Option 3

Implementation of Option 3 would increase the demand for water by increasing the population in the city limits and through annexation of the unincorporated portions of the GP area into the city limits. This increase would generate a demand for an additional 24 wells, increasing the total of 42 wells (Table 8-1 and Figure 8-3). Also shown in Figure 8-3 are the major pipelines that would be necessary under Option 3.

Implementation of Option 3 would require 17 more wells and additional pipelines than under Option 1 and seven more wells and additional pipelines than under Option 2.

## Implications for the General Plan

### Option 1

- o Provide additional wells and major pipelines to serve new development.
- o Develop a policy and fee schedule for funding improvements, required for the water system based on fair share contributions from all new developments.

### Option 2

The requirements for Option 2 would be the same as those for Option 1.

### Option 3

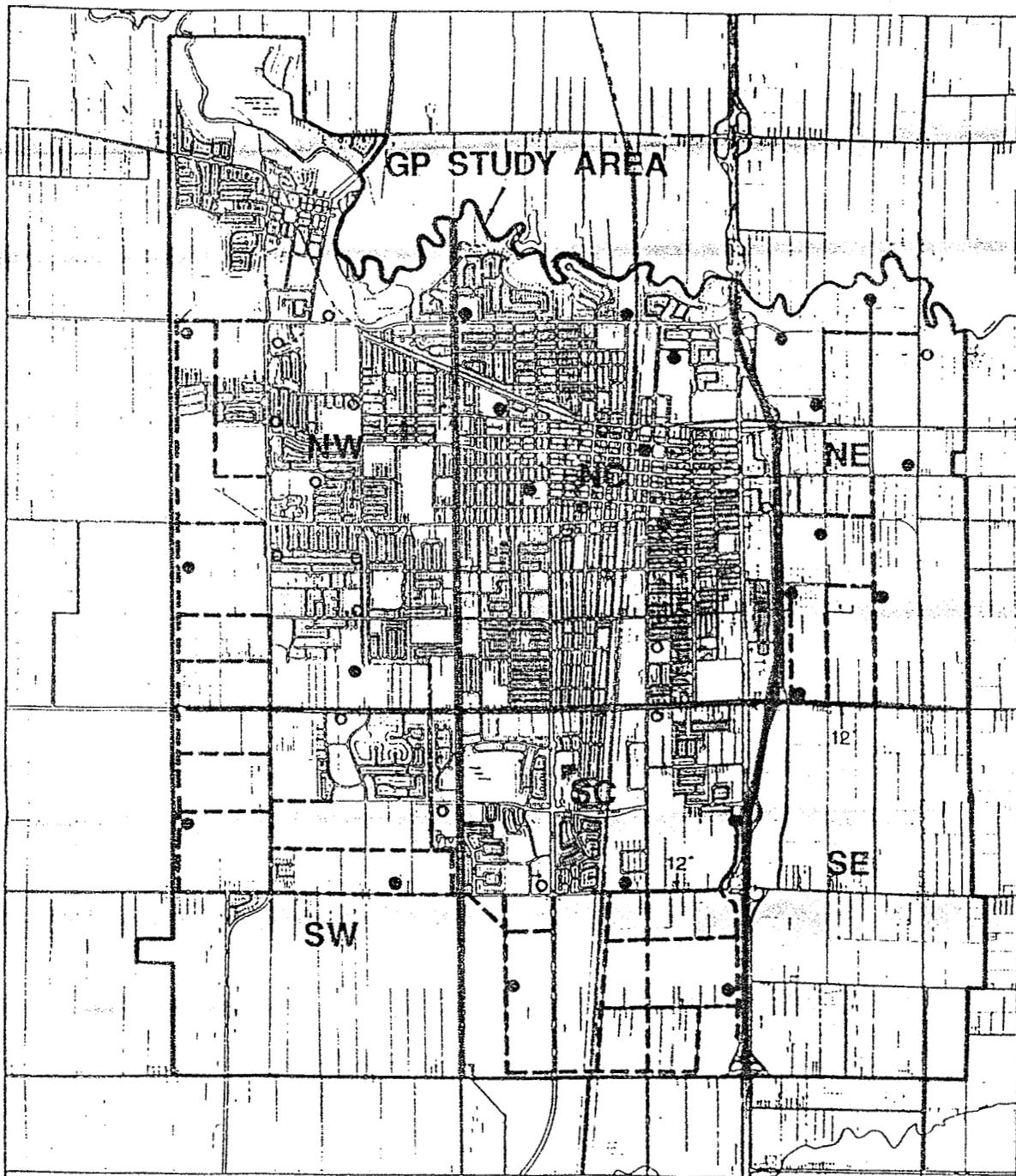
- o The requirements for Option 3 would be the same as those for Option 1.

## SEWERAGE

This section is based on information provided by Black & Veatch.

### Option 1

Sanitary sewer improvements for Option 1 are shown in Figure 8-4. These improvements consist solely of parallel sewers to relieve existing sewers, which, as indicated by computer modeling, are presently at or near capacity and surcharged during peak flow periods. These sewers have relatively flat slopes and, therefore, velocities that are less than the minimum required for self-cleaning. It is likely that solids deposition is a significant problem in these sewers and is contributing to capacity reduction. New connected



LEGEND

○ Existing Well

● Future Well

--- Future 10-Inch Pipe

Note: Approximate locations. Option 3 also includes improvements required under Options 1 and 2.

FIGURE 3-3. WATER SYSTEM IMPROVEMENTS REQUIRED UNDER OPTION 3

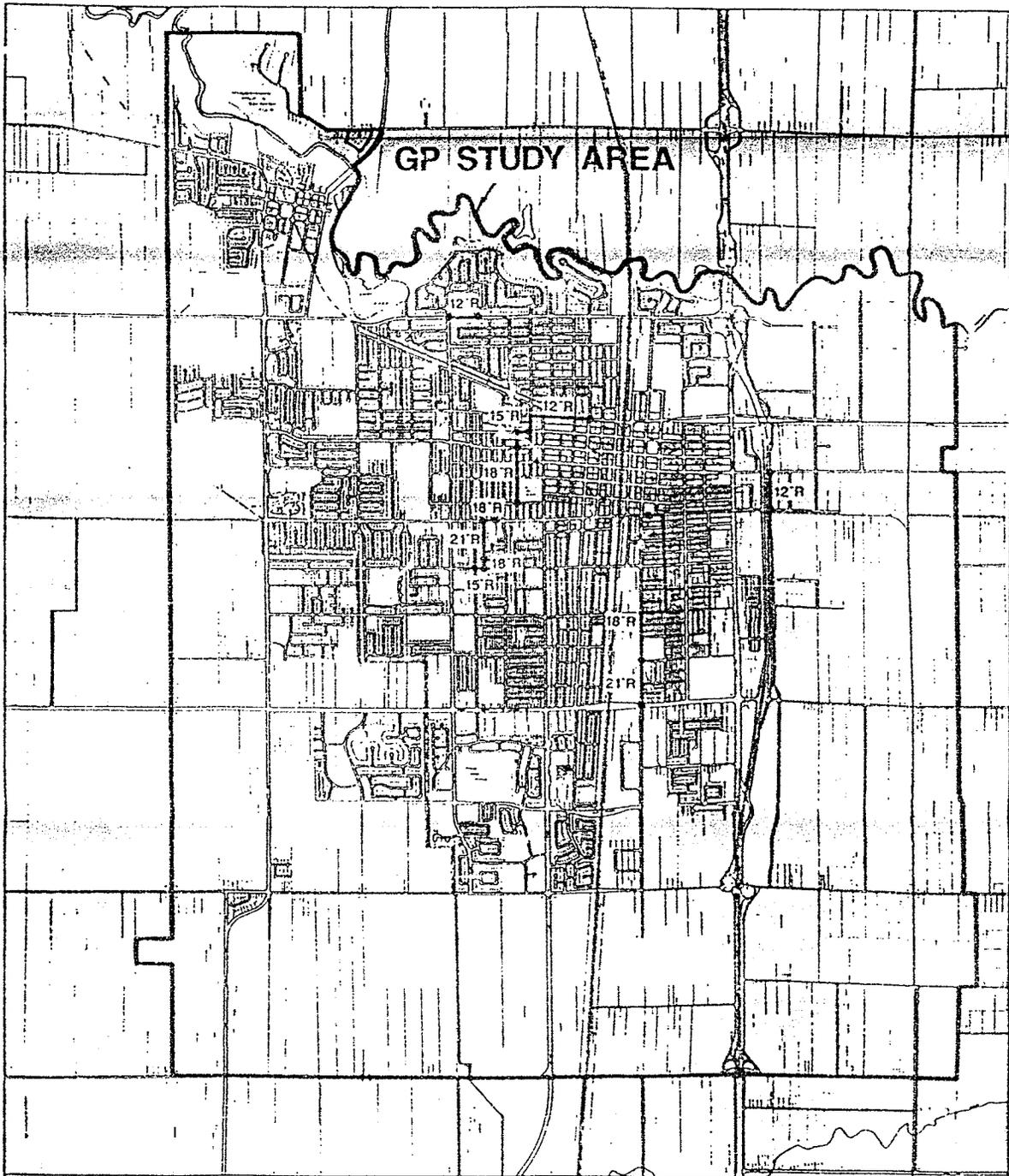
Source: Peomas and Associates 1988

Lodi General Plan



0 800 2400

FEET



**LEGEND**

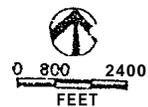
- 12" Preliminary Diameter of New Sewer
- R Parallel Relief Sewer
- Change in Pipe Diameter

Note: Requirements for relief sewers should be field verified.

FIGURE 8-4. PRELIMINARY SANITARY SEWER IMPROVEMENTS REQUIRED UNDER OPTION 1 (SEWERS 12 INCHES AND LARGER IN DIAMETER)

Source: Black & Veatch 1988

Lodi General Plan



- o Develop a policy and fee schedule for funding improvements required for the sewer system based on fair share contributions from all new developments.

### Option 1

## Implications for the General Plan

In addition to the improvements required under Option 1 and 2, implementation of Option 3 would require a new east-west trunk sewer, additional pump stations, and force mains. Sanitary sewer improvements for Option 3 are shown in Figure 8-6. These improvements consist of a new east-west trunk sewer between Harney Lane and Armstrong Road. A pump station and force main would be required to convey flow from the proposed trunk sewer to the existing Century Boulevard trunk sewer. The estimated ultimate peak flow rate to this pump station is 2,600 gpm.

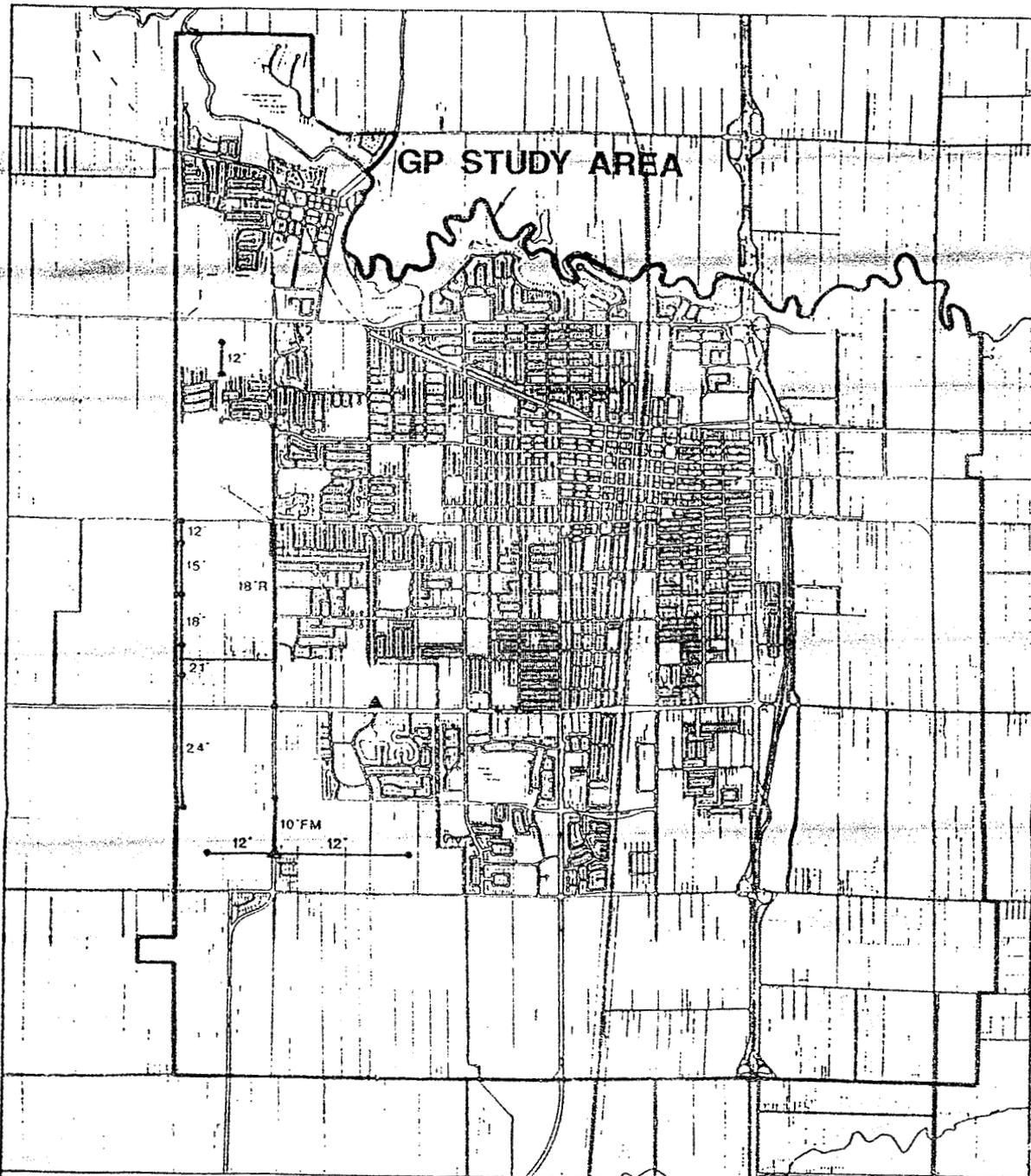
### Option 3

In addition to the improvements required under Option 1, implementation of Option 2 would require a new north-south trunk sewer, additional pump stations, and force mains. Trunk sewers, pump stations, and force mains would be required as indicated to serve development in the vicinity of Century Boulevard that cannot be served by gravity flow to existing trunk sewers. Flow from these pump stations would be directed to the existing Century Boulevard trunk sewer. Peak flow rates to these pump stations are estimated at 450 gallons per minute (gpm) for the pump station on Kettleman Lane and 1,150 gpm for the pump station on Lower Sacramento Road.

Sanitary sewer improvements for Option 2 are shown in Figure 8-5. A relief sewer would be required along a portion of the existing trunk sewer located in Lower Sacramento Road. This relief sewer would permit near-term development adjacent to Lower Sacramento Road to be connected via gravity flow laterals. It would also carry flows from the area east of the WID Canal and north of Elm Street. A new north-south trunk sewer would be required to serve development west of Lower Sacramento Road that cannot be served by gravity flow to the existing trunk sewer.

### Option 2

development will increase surcharging. Actual flows and requirements for relief sewers should be field verified prior to implementation of Option 1.



**LEGEND**

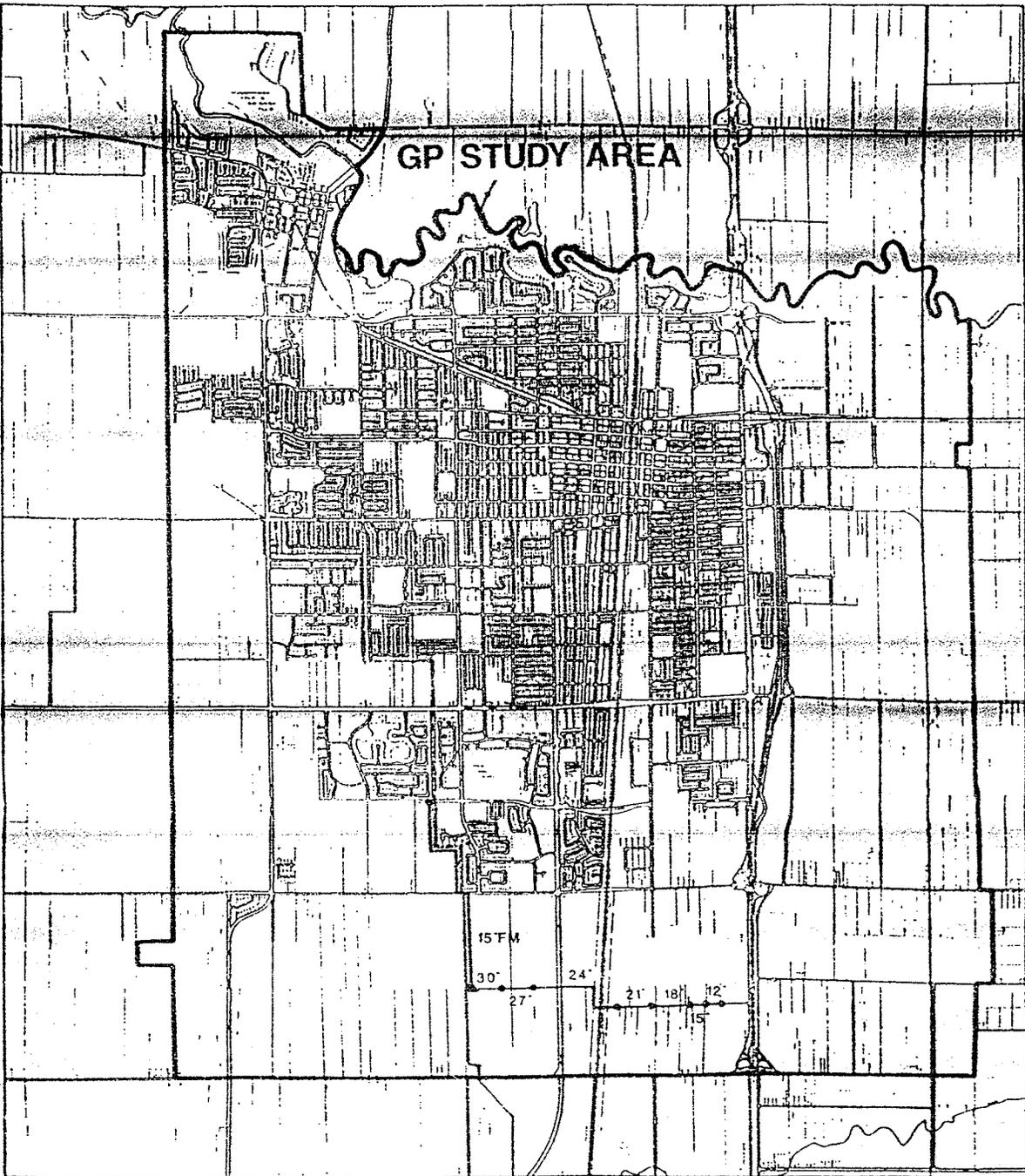
- 12" Preliminary Diameter of New Sewer
- R Parallel Relief Sewer
- Change in Pipe Size
- ▲ Pump Station
- FM Force Main

FIGURE 8-5. PRELIMINARY SANITARY SEWER IMPROVEMENTS  
 REQUIRED UNDER OPTION 2 (SEWERS 12 INCHES  
**AND LARGER IN DIAMETER)**

Source: Black & Veatch 1988

Lodi General Plan





**LEGEND**

- 12" Preliminary Diameter of New Sewer
- Change in Pipe Diameter
- A Pump Station
- FM Force Main

**FIGURE 8-6. PRELIMINARY SANITARY SEWER IMPROVEMENTS REQUIRED UNDER OPTION 3 (SEWERS 12 INCHES AND LARGER IN DIAMETER)**

Source: Black & Veatch 1988

Lodi General Plan



### Option 2

- o The implications for Option 2 would be the same as those for Option 1.

### Option 3

- o The implications for Option 3 would be the same as those for Option 1.

## STORM DRAINAGE

This section is based on information provided by the City of Lodi Public Works Department.

### Introduction

Preliminary designs for areas added to the master storm drainage system service area were prepared in accordance with adopted City design standards. No major changes to the design concepts used for the existing drainage basins are assumed. However, as the storm drainage system gets larger to accommodate new growth and the amounts of stored water increase, some of these design concepts should be reevaluated, particularly the level of service provided by the system in the southern part of Lodi compared to the system in the northern part of Lodi.

### Option 1

Under Option 1, a major portion of the planned master storm drainage system would lie outside of the GP study area. This poses a number of problems, particularly with the completion of the following projects currently underway:

- o **C-Basin.** This basin is partially excavated and developed. It also contains a temporary pump structure located in the Beckman Road ditch. While the existing basin and associated pump stations are performing adequately, the basin is not developed in accordance with the adopted City design standards.
- o **G-Basin.** This basin is partially excavated and has essentially no improvements other than a temporary perimeter fence. The basin needs a pump and inlet/outlet structure and interior drainage system for it to drain completely.
- o **Miscellaneous Storm Drainage Master Lines.** Currently five unconstructed master storm drainage lines would be needed to serve development under Option 1: the Calaveras Street storm drain from Lockeford Street to Pioneer Drive, the

Pine Street storm drain from Guild Avenue to 800 feet east of Guild Avenue, the Vine Street storm drain from 400 feet east of Cluff Avenue to Guild Avenue, and the Lodi Avenue storm drain from 600 feet east of Cluff Avenue to Guild Avenue. A line in Hutchins Street from Walnut Street to Elm Street is planned for construction in 1989.

These projects would be funded from storm drainage fees assessed to future development. As presently planned, these projects will cost over \$3.5 million. This cost could be reduced if the service area were reduced and the projects redesigned. However, a number of policy decisions would have to be made regarding accommodating future growth and the level of improvements needed in the basins. With development restricted to the land designated under Option 1, the ability to finance or plan for these improvements is severely restricted.

### Option 2

Under Option 2, the master storm drainage system as presently planned would accommodate all of the area shown, with the exception of the area south of Kettleman Lane and west of Lower Sacramento Road. For this area, one additional basin, I-Basin, with incoming trunk lines and an outlet pipe would be needed (Figure 8-7). This area would be similar to Area F in Figure 8-7 because all of the water from this area would be pumped twice, once at the basin to drain the basin and the incoming pipes (including nuisance flows) and again at the Beckman Pump Station into the WID Canal.

The addition of I-Basin would add approximately 17 hours to the total time necessary to empty the basins after a design storm.

In addition to the improvements required under Option 1, implementation of Option 2 would require one additional storm drainage detention basin with incoming trunk lines and an outlet pipe.

### Option 3

Under Option 3, the master storm drainage system would be the same as required for Option 2. However, two additional basins and trunk and outlet lines south of Harney Lane between the WID Canal and SR 99 and north of Armstrong road (see Areas J and K in Figure 8-8) would be required to accommodate growth under Option 3. Double pumping would also be required at these locations for water because the existing ground elevations are lower, in relation to the rest of the City and the existing storm drainage system.

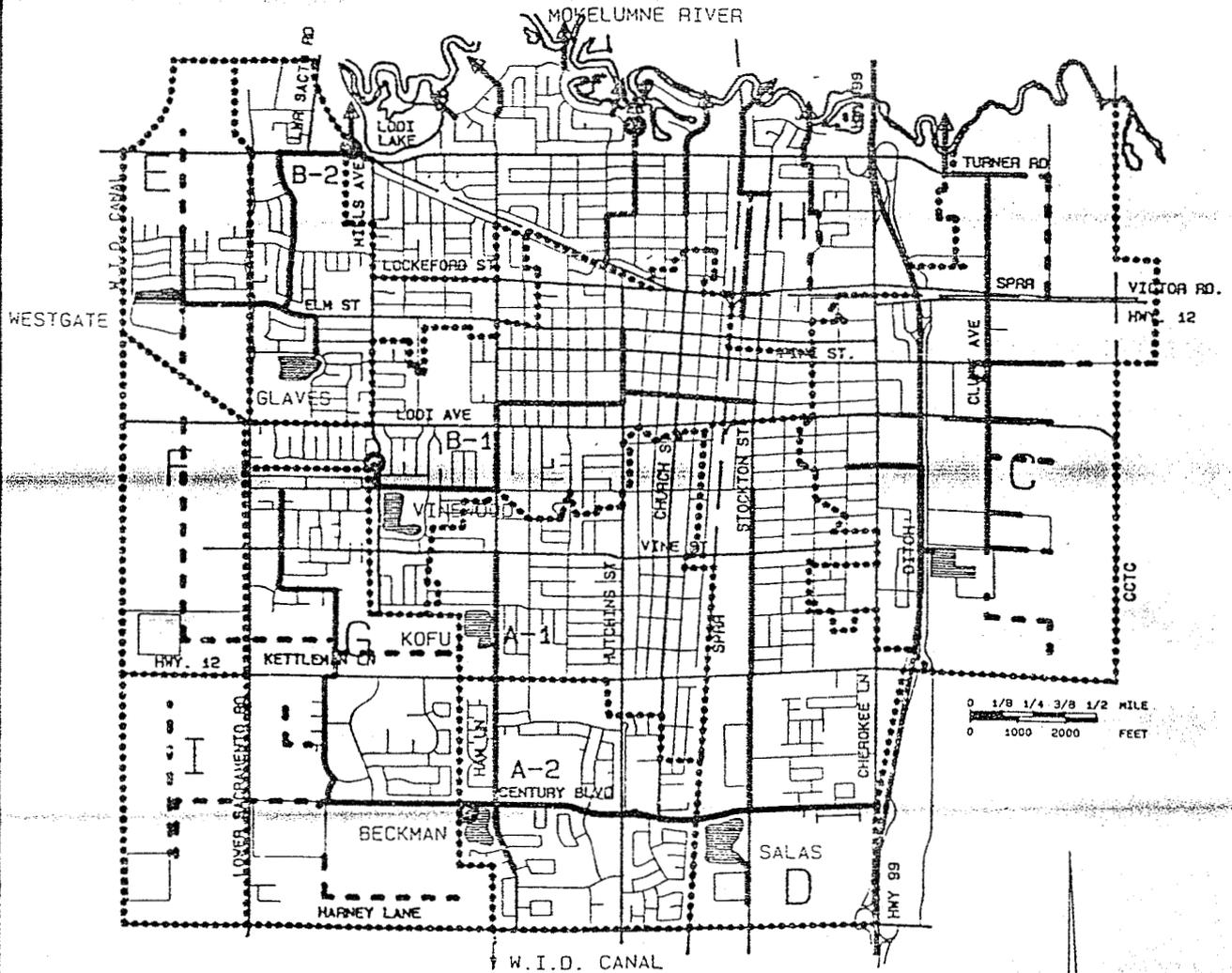
The addition of these basins would add approximately 50 hours to the total time necessary to empty the basins after a design storm.

The design of the area south of Harney Lane (Areas J and K in Figure 8-8) is such that Area J should be developed before Area K.



**CITY OF LODI**  
PUBLIC WORKS DEPARTMENT

**MASTER STORM DRAIN SYSTEM**



**LEGEND**

- TRUNK LINES & OUTFALLS
  - EXISTING
  - - - FUTURE
- BASIN/PARKS
  - FUTURE
  - ▣ EXISTING
- DRAINAGE AREA (APPROX.)
- PUMP STATION

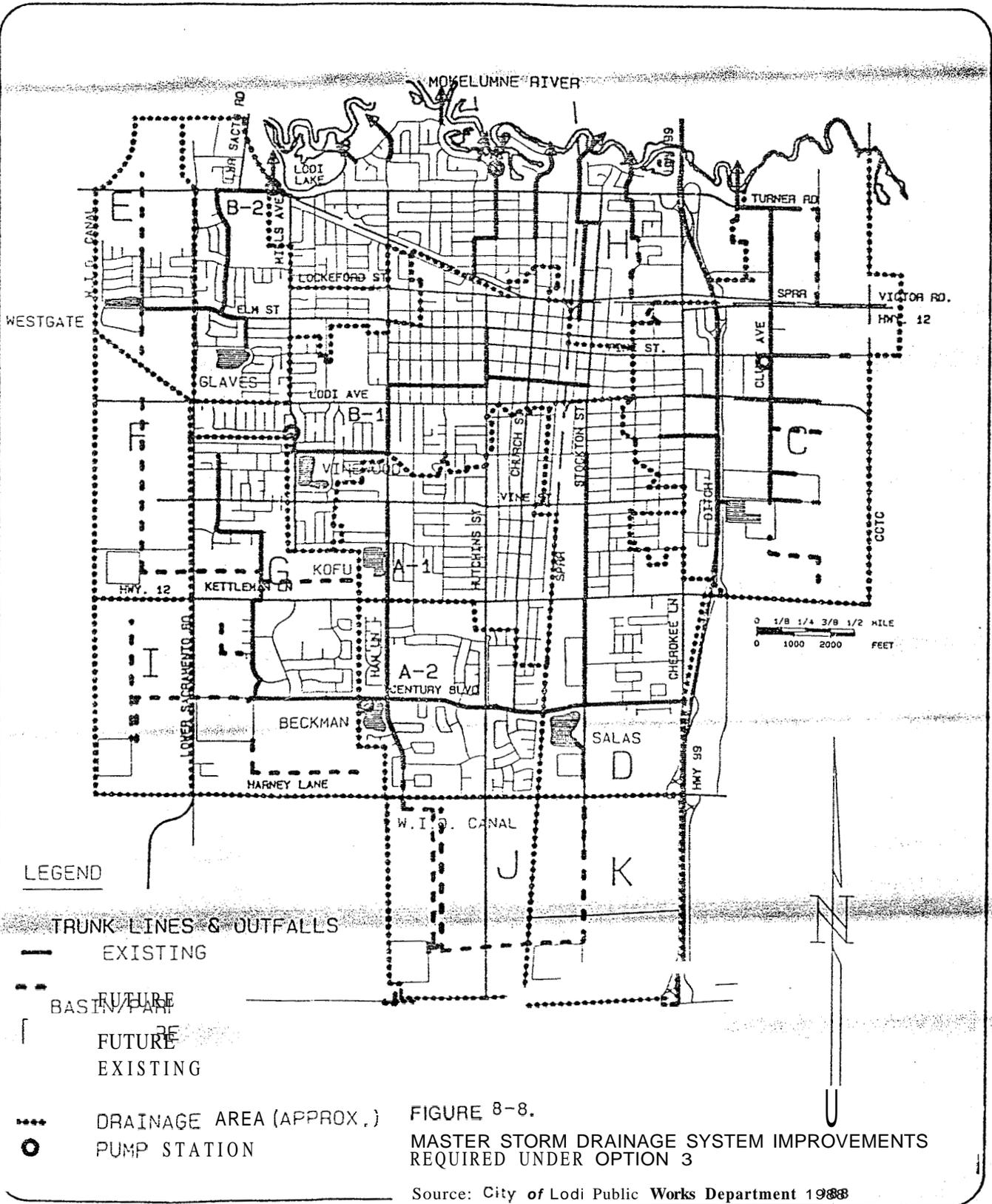
FIGURE 8-7.  
MASTER STORM DRAINAGE SYSTEM IMPROVEMENTS  
REQUIRED UNDER OPTION 2

Source. City of Lodi Public Works Department 1988



CITY OF LODI  
PUBLIC WORKS DEPARTMENT

MASTER STORM DRAIN  
SYSTEM



In addition to the improvements required under Options 1 and 2, implementation of Option 3 would require three more storm drainage detention basins and additional trunk and outlet lines and two more storm drainage detention basins and additional trunk and outlet lines.

## Implications for the General Plan

### Option 1

- o Consider selection of Options 2 or 3 instead of Option 1.
- o Accept a lower level of service for the incomplete storm drainage facilities.
- o Develop a policy for funding improvements required for the master storm drainage system other than fair share contributions from all new developments because Option I does not allow enough new development to fund needed improvements.

### Option 2

- o Develop a policy and fee schedule for funding improvements required for the master storm drainage system from fair share contributions from all new developments.
- o Revise the Master Storm Drain System Plan and fee structure to include the facilities needed to accommodate growth under Option 2.
- o Design the storm drainage system to best use available fall. Some double pumping would be unavoidable.
- o Design the storm drainage basins so portions of the basins could remain flooded for longer periods with fewer detrimental effects.
- o Revise the City design criteria for storage volume to increase the required volume.

### Option 3

- o The implications for Option 3 would be the same as those for Option 2.
- o Obtain permission from WID for a third discharge point.
- o Extend the storm drainage discharge line south to Pixley Slough.

- o Reduce the pumping rate at Shady Acres Pump Station and increase the Beckman Park Pump Station rate to compensate.
- o Adopt a phasing plan for new development as part of the growth Management Element.

## LAW ENFORCEMENT

### Option 1

Implementation of Option 1 would increase the demand for police protection in the City of Lodi by increasing the population in the city limits. Option 1 would add 1,338 residential dwelling units to the Lodi Police Department service area, producing an additional service population of 3,479. Currently, the department has a staff-to-population ratio of 1.3 officers per 1,000 population. However, based on the department's goal of 1.5 officers per 1,000 population, this increase would generate a demand for an additional 14 officers, increasing the total to 76 officers (Table 8-2). The additional officers would also require four additional patrol vehicles (Table 8-2). According to the police chief, additional substations would not be necessary (Williams pers. comm.).

### Option 2

Implementation of Option 2 would increase the demand for police protection in the City of Lodi by increasing the population in the city limits and through annexation of the unincorporated portions of the GP area into the City. Option 2 would add 9,992 dwelling units to the Lodi Police Department service area, producing an additional service population of 25,979. Based on the department's goal of 1.5 officers per 1,000 population, this increase would generate a demand for an additional 48 officers, increasing the total to 110 officers (Table S-3). The additional officers would also require 12 additional patrol vehicles (Table 8-2).

According to the police chief, the increase in service population would require additional administrative personnel, additional office space, and possibly expansion of the existing jail. The department is ultimately planning to increase space within the existing jail by expanding into the adjacent building, which currently houses the fire department. The police chief has indicated that the use of substations is not satisfactory under this option (Williams pers. comm.).

Implementation of Option 2 would require 33 more officers and additional office and jail space than under Option 1.

Table 4-7. Police Protection Requirements Resulting from New Development by Land Use Option

Land Use Option	Buildout Population	Multiplier		Multiplier		Total Number of Officers Required (1.3/1,000)	Total Number of Officers Required (1.5/1,000)	Additional Number of Patrol Vehicles Required (vehicle/4 officers)
		Officers/1,000 Population (Current Staffing)	Additional Number of Officers Needed	Officers/1,000 Population (Department Goal)	Additional Number of Officers Needed			
Option 1	58,715 Persons	1.3	4	1.5	14	66	76	4
Option 2	73,265 Persons	1.3	33	1.5	48	95	110	12
Option 3	86,418 Persons	1.3	50	1.5	64	112	136	17

Source: Villians pers. comm.

## Option 3

Implementation of Option 3 would increase the demand for police protection in the City by increasing the population of the city limits and through annexation of the unincorporated portions of the GP area into the City. Option 3 would add 15,057 dwelling units to the police department service area by producing an additional service population of 39,148. Based on the department's goal of 1.5 officers per 1,000 population, this increase would generate a demand for an additional 68 officers, increasing the total to 130 officers (Table 8-2). The additional officers would also require 17 additional patrol vehicles (Table 8-2).

According to the police chief, the increase in service population and officers would require additional administrative personnel and dispatchers and would require additional office space, expansion of both the existing jail, and existing dispatching center, and a new beat in the southern portion of the City (Williams pers. comm.).

Implementation of Option 3 would require 54 more officers than under Option 1 and 20 more officers than under Option 2, as well as additional administrative personnel and dispatchers. Option 3 would also create the need to expand the existing dispatching center and a new beat.

## Implications for the General Plan

### Option 1

- o Provide additional police officers and related equipment to serve new development based on the department's staff-to-population goal of 1.5 officers per 1,000 population.

### Option 2

- o Provide additional police officers and related equipment, personnel, and office space to serve new development based on the department's staff-to-population goal of 1.5 officers per 1,000 population. Remodeling of the existing public services building would be needed to house the expanded police department and allow for possible expansion of the jail.

### Option 3

- o The implications for Option 3 would be the same as those for Option 2. Provide additional dispatchers, expand the existing dispatch center, and establish a new beat in the southern part of the City.

## FIRE PROTECTION

### Option 1

The number of firefighters needed to adequately staff a fire department is dependent on community characteristics. (For example, types of land use and demographics are more critical than population numbers). Thus, the Lodi Fire Department does not maintain a staff-to-population goal. Adequate fire protection within the Lodi Fire Department service area is based on response time rather than population. Currently, the time it takes for the fire department to respond to an incoming service call is 4 minutes: one minute to receive the service call and 3 minutes driving time.

Total personnel and equipment requirements for each of the land use options are presented in Table 8-3. These estimates are based on the location and types of proposed development under each option.

Currently, the department's fire protection coverage of the City's west side is considered weak (Hughes pers. comm.). A new station, in addition to the three existing stations, is needed in that area under existing conditions. Therefore, implementation of Option 1 would require a new station to cover new development in the western part of the City. Personnel requirements under this option would include 12 firefighters, which is adequate to cover the additional station, and six apparatus, two more than the department has now.

Fire station placement is based on an average 3-minute driving response time to all emergency alarms. If the west side fire station were located at the presently proposed site on Lower Sacramento Road near Elm Street, all areas within the city limits under Option 1 would be within range of the 3-minute response time.

At present, the department is considering annexation of the Woodbridge Rural Fire District. If annexation were to occur, the proposed location of the fire station on the west side could change because the department would use the existing station in Woodbridge, which would serve the northwestern part of the City (Hughes pers. comm.).

### Option 2

The four-station concept, as described under Option 1, would also be required for Option 2.

Implementation of Option 2 would generate a demand for an additional 15 firefighters and accompanying apparatus (Table 8-3). The fire chief indicated, however, that four fire stations may not be adequate under this option and that further study would be needed to assess the adequacy of the station locations (Hughes pers. comm.). With four fire stations, the southwestern part of the City would be outside of the required 3-minute response time range. Depending on the outcome of the study, a fifth fire station may be needed under Option 2. The addition of a fifth station would require an engine company,

Table 8-3. Fire Protection Requirements Resulting from New Development by Land Use Option

Land Use Option	Total Number of Stations Needed	Additional Personnel Required (4 Stations)	Additional Personnel Required (5 Stations)	Additional Number of Equipment Needed (4 Stations)	Additional Number of Equipment Needed (5 Stations)
Option 1	4	12	N/A	2 apparatus	N/A
Option 2	4 or 5	15	24	2 apparatus	3 apparatus
Option 3	4 or 5	26	26	3 apparatus	3 apparatus

Source: Hughes pers. comm.

nine firefighters, and one accompanying apparatus (Table 8-3). The proposed location of the fifth fire station is not **known** at this time.

Implementation of Option 2 would require eight more firefighters, and possibly a fifth fire station, than under Option 1.

### Option 3

The fox-station concept, as described under Option 1, would also be required for Option 3.

Implementation of Option 3 would generate a demand for an additional 26 firefighters and three accompanying apparatus (Table 8-3). As described above under Option 2, four fire stations may not be adequate to serve the expanded city limits. Further study would be required to assess the adequacy of the existing stations. However, one additional engine company would be required under this option. With four stations, the southwestern and the southeastern portions of the City would be outside the required 3-minute response range. The fire chief has indicated that these corners could be a problem (Hughes pers. comm.). Depending on the outcome of the study, the addition of a fifth fire station would also require nine additional firefighters and one additional apparatus (Table 8-3).

Implementation of Option 3 would require 14 more firefighters than under Option 1 and 11 more firefighters and one more apparatus than under Option 2, in addition to one additional engine company. This option may also require the addition of a fifth fire station.

## Implications for the General Plan

### Option 1

- o Construct a fourth fire station in the western part of the City to adequately serve those areas currently outside the 3-minute response range.
- o Provide additional firefighters and related equipment to serve new development.
- o Consider annexation of the Woodbridge Rural Fire District if it is found to help finance the cost of a fourth fire station. Annexation would provide better service to a larger service area.
- o Adopt a sprinkler ordinance for commercial and industrial uses (required for commercial and industrial buildings larger than 6,000 square feet) to reduce critical response time to these buildings.

### Option 2

- o The implications for Option 2 would be the same as those for Option 1.
- o Study the existing and planned fire station adequacy to determine if the fire department could adequately serve the southwestern part of the City with four fire stations.

### Option 3

- o The implications for Option 3 would be the same as those for Option 2.
- o Further study of existing and planned fire station adequacy would be required to determine if the fire department could adequately serve the southwestern and southeastern parts of the City with four fire stations.

## PARKS AND RECREATION

### Option 1

Currently, the City has an estimated 391 acres of parkland, of which 81 acres are school parks and 36 acres are undeveloped parks. The City of Lodi has established a standard of 5 acres of developed parkland per 1,000 population. The national standard is 10 acres of developed parkland per 1,000 population. However, when including school parks as developed parkland, the City prefers to use the national standard (Williamson pers. comm.).

Currently, the City has a ratio of 7.3 acres of developed parkland per 1,000 population including school parks. Without school parks, the City's ratio is 6.5 acres per 1,000 population. The recreation and parks director has indicated a preference for making up this deficiency of 2.7 acres per 1,000 population with more parkland (rather than basin or school parks) to reach the national standard (Williamson pers. comm.).

Implementation of Option 1 would increase the demand for parkland in the City of Lodi by increasing the population of the city limits by 3,479. Based on the 10 acres per 1,000 population ratio, which includes school parks, this population increase would generate a demand for an additional 162 acres of developed parkland, increasing the total need to 507 acres (Table 8-4).

The future planned expansion of G-Basin would add another 51.5 acres of parkland. This planned expansion is not included in the total number of acres because the site has not yet been purchased by the City. This expansion is planned for development in approximately 2-5 years (Williamson pers. comm.).

No drainage basins or school parks are designated under Option 1 (Figure 2-3).

Table B-4. Developed Parkland Requirements Resulting from New Development by Land Use Option

General Plan Option	Buildout Population	Existing		Additional		Total Developed Park Acres Needed	Existing Multiplier (excluding school parks)	5.0 acres of developed parkland/1,000 population	5.0 acres of developed parkland/1,000 population	5.0 acres of developed parkland/1,000 population
		Multiplier (including school parks)	Acres Needed	Multiplier (including school parks)	Acres Needed					
Option 1	50,745 Persons	10.0 acres of developed parkland/1,000 population	162	507	0	253	0	168	432	
Option 2	73,245 Persons	10.0 acres of developed parkland/1,000 population	387	732	102	366	102	168	432	
Option 3	86,414 Persons	10.0 acres of developed parkland/1,000 population	519	864	168	432	168	168	432	

Source: Williamson pers. comm.

## Option 2

Implementation of Option 2 would increase the demand for parkland in the City of Lodi by increasing the population of the city limits by 25,979 and through annexation of the unincorporated portions of the GP area into the City. Based on the 10 acres per 1,000 population ratio, this increase would generate a need for an additional 387 acres of developed parkland, increasing the total to need 732 acres (Table 8-4).

Option 2 designates 104 acres of storm drainage detention basin parks and 18 acres of school parks, for a total of 122 acres (Figures 2-3 and 2-4). According to the recreation and parks director, the remaining 265 acres that would be needed under this option should consist of neighborhood and community parks strategically located throughout new residential development (Williamson pers. comm.).

Implementation of Option 2 would require 225 more acres of parkland than under Option 1.

## Option 3

Implementation of Option 3 would increase the demand for parkland in the City of Lodi by increasing the population of the city limits by 39,148 and through annexation of the unincorporated portions of the GP area into the City. Based on the 10 acres per 1,000 population ratio, this increase would generate a need for an additional 519 acres of developed parkland, increasing the total need to 864 acres (Table 8-4).

Option 3 designates 164 acres of storm drainage detention basin parks and 44 acres of school parks, for a total of 208 acres (Figures 2-3 and 2-4). According to the recreation and parks director the remaining 311 acres that would be needed under this option should consist of neighborhood and community parks strategically located throughout new residential development (Williamson pers. comm.).

Implementation of Option 3 would require 357 more acres of parkland than under Option 1 and 132 more acres than under Option 2.

## Implications for the General Plan

### Option 1

- o Provide additional parkland to serve new development based on the department's 10 acres per 1,000 population goal which includes school parks.
- o Develop the 46 acres of existing City parkland to help meet the projected demand.

- o Consider a City policy allowing for an appropriate amount of upland acreage for parks in all future storm drainage detention basin parks and expansions for recreational facilities and winter sport activities.

### Option 2

- o The implications for Option 2 would be the same as those for Option 1.
- o Provide additional parkland, consisting of neighborhood and community parks, because designated storm drainage detention basin parks would not adequately meet the projected demand.
- o Establish a fee assessed to developers to finance new recreational facility development.
- o Preserve the Mokelumne River by designating it as a recreational resource.

### Option 3

- o The implications for Option 3 would be the same as those for Option 2.

## SCHOOLS

### Option 1

Implementation of Option 1 would add **1,338** residential dwelling units to the Lodi Unified School District (LUSD), generating an additional 928 students (490 K-6, 133 7-8, 265 9-12, and 40 continuation students, respectively) (Table 8-5).

Current overcrowding of Lodi schools would be reduced by approximately 17 percent under Option 1, as enrollment would decline from 103.8 to 86.3 percent of available seating capacity (Table 8-5). This enrollment projection assumes that students from north Stockton households who are currently attending Lodi schools would be attending schools in north Stockton by 2007. The LUSD would have adequate housing capacity for the existing enrollment (excluding north Stockton transfers) and for students generated under Option 1.

Elementary and middle schools would be operating at 72.8 and 75.0 percent of capacity, respectively (Table 8-5), enabling the LUSD to house students from overcrowded attendance areas outside Lodi, if necessary, or to return to nonextended school schedules. However, the two high schools in Lodi would be operating at slightly over capacity, and continuation schools would be overcrowded by approximately 50 percent (Table 8-5), requiring the use of portable units or alternate sites. Conversion of existing schools (e.g. conversion of elementary and middle school space for grades 9-12) and construction of proposed schools (Figures 2-4 and S-9) would be needed to fully accommodate projected

Table 4-5. Projected Enrollment and Capacity of Lodi Public Schools by Land Use Option

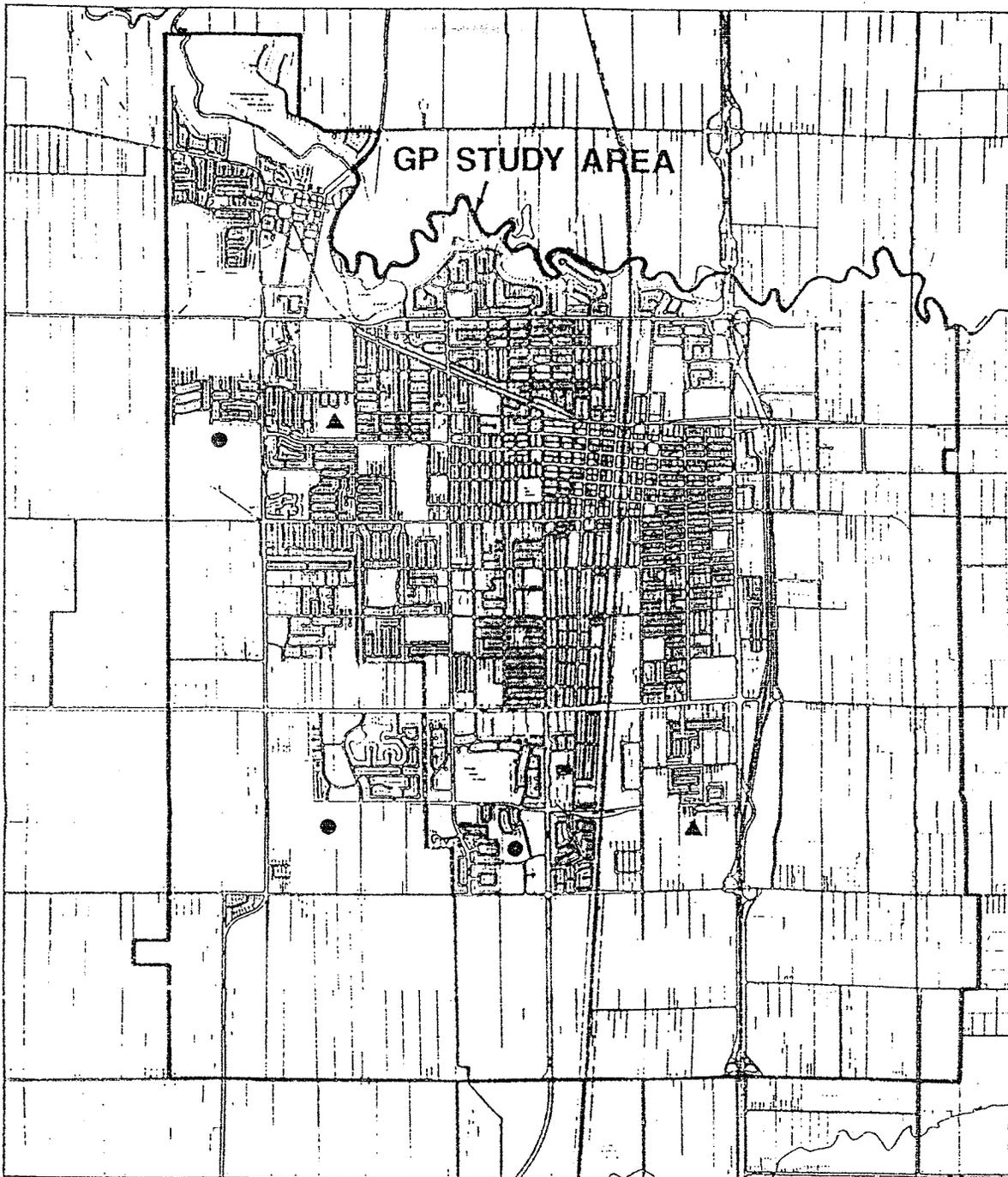
Grade Levels	Current Enrollment	Current Capacity (a)	Current Enrollment as Percentage of Current Capacity	Projected Increase in Enrollment from Lodi Development, 1988-2007 (b)			Projected Enrollment, 2007 (c)			Projected Increase in Capacity (a)	Future Capacity (a)	Projected Enrollment as Percentage of Projected Capacity		
				Option 1	Option 2	Option 3	Option 1	Option 2	Option 3			Option 1	Option 2	Option 3
K-6	4,882	3,893	125.4	490	3,684	5,377	5,112	1,564	10,259	1,489	7,112	72.8	116.0	139.0
7-8	1,294	1,616	70.5	133	916	1,445	1,117	2,270	2,689	1,392	1,436	75.0	120.9	146.5
9-12	5,541	5,785	91.6	265	1,961	2,911	5,806	1,501	1,452	0	5,195	100.2	129.5	145.4
Continuation/ Adult Education	873	600	145.5	10	296	434	913	1,169	1,311	0	600	152.2	191.4	218.5
Total	12,590	12,124	103.4	928	6,917	10,171	13,468	19,457	22,711	4,001	15,613	86.3	124.6	145.5

Source: Lodi Unified School District (Hand and Reenan pers. coms.); Jones & Stokes Associates

Notes: (a) Capacity estimates are based on permanent facilities (i.e. do not include allowances for portable units) and projected school schedules as of July 1989. Schools that will be operating on YRS or other extended-year schedules are indicated by asterisks. Capacities of elementary schools are expected to increase by 24 percent with conversion from standard-track to year round schedules. Capacities middle and high schools are expected to increase 36 percent under extended (Concept 6) schedules.

(b) Enrollment projections assume that 800 students are currently in continuation programs, 12.5 percent of future students in grades 9-11 will attend continuation school, and enrollment in adult education programs will increase at the same rate as the K-12 student population

(c) Enrollment projections assume that students from north Stockton households who are currently attending Lodi schools will be attending schools in north Stockton by 2007. It is estimated that the number of north Stockton students currently attending Lodi schools is 2,450 in grades 9-11 (conventional high schools), 350 in the continuation program, 50 in grades 7-8, and a small number in grades K-6. These figures do not include students in special education classes.



LEGEND

● Elementary of

▲ Middle School

FIGURE 8-9. SCHOOLS REQUIRED UNDER OPTION 1

Lodi General



0 800 2400

enrollment under Option 1 without the use of interim facilities or the construction of additional permanent facilities.

The LUSD has recently adopted a policy of converting existing schools to year-round schedules (YRS) and operating all future schools on YRS to alleviate overcrowding with the use of YRS or other extended scheduling, elementary school capacities have been increased approximately 36 percent (Hand pers. comm).

## Option 2

Implementation of Option 2 would add 9,992 residential dwelling units to the LUSD, generating an additional 6,917 students (3,684 K-6, 976 7-8, 1,961 9-12, and 296 continuation students, respectively) (Table 8-5).

Current overcrowding of Lodi schools would increase by approximately 20 percent, as enrollment would increase from 103.8 to 124.6 percent of available seating capacity (Table 8-5). The LUSD would not have adequate capacity to house existing enrollment (excluding north Stockton transfers) and students generated under Option 2.

Elementary, middle, and high schools would be operating at 16.0, 20.9, and 29.5 percent over capacity, respectively, and continuation schools would be overcrowded by 94.8 percent (Table 8-5), requiring the use of portable units, alternate sites, or the construction of additional schools. Two more elementary schools, one additional middle school, one additional high school, and one additional continuation school would be needed to fully accommodate projected enrollment under Option 2 without the use of interim facilities or the use of alternate sites (e.g., busing to schools outside Lodi) (Figure 8-10).

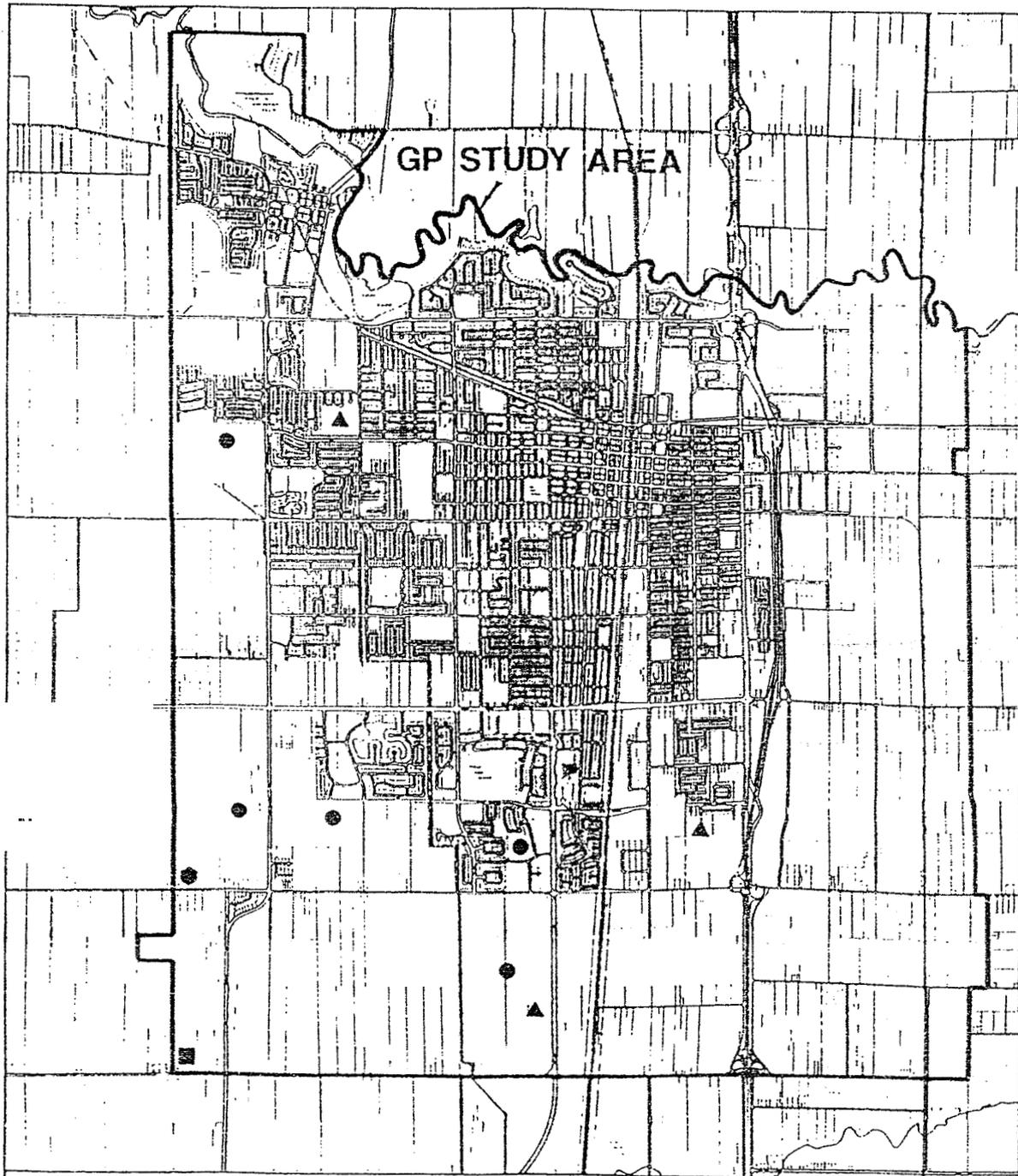
In addition to the three elementary schools and two middle schools proposed under Option 1, implementation of Option 2 would require two more elementary schools, and one additional middle school, high school, and continuation school than under Option 1.

## Option 3

Implementation of Option 3 would add 15,057 residential dwelling units to the LUSD, generating an additional 10,171 students (5,377 K-6, 1,445 7-8, 2,911 9-12, and 438 continuation students, respectively) (Table 8-5).

Current overcrowding of Lodi schools would increase by approximately 40 percent, as enrollment would increase from 103.8 to 145.5 percent of available seating capacity (Table 8-5). The LUSD would not have adequate capacity to house existing enrollment (excluding north Stockton transfers) and students generated under Option 3.

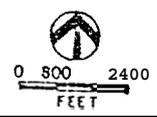
Elementary, middle, and high schools would be operating at 39.0, 46.5, and 45.8 percent over capacity, respectively, and continuation schools would be overcrowded by 118.5 percent (Table 8-5), requiring the use of portable units, the use of alternate sites, or the construction of additional schools. Four more elementary schools, one additional middle



**LEGEND**

- Elementary School
- ▲ Middle School
- High School
- ⊙ Continuation School

Source: Lodi Unified School District Staff



school, at least one additional high school, and at least one additional continuation school would be needed to fully accommodate projected enrollment under Option 3 without the use of interim facilities or alternate sites (e.g., busing to schools outside Lodi) (Figure 8-11).

In addition to the five elementary schools, three middle schools, one high school, and one continuation school needed under Option 2, implementation of Option 3 would require two more elementary schools than under Option 2.

## Implications for the General Plan

### Option 1

- o Designate future school sites as proposed by the LUSD, including sites for the Park West and Century elementary schools and the Millswood and Harney middle schools.
- o Consider assisting the **LUSD** in financing new school facilities through assessment of impact fees and implementation of other focal funding mechanisms that may be adopted, including formation of a community facility (Mello-Roos) district.
- o Consider implementation of a cooperative landbanking program, through which the City would acquire sites for future schools and complementary facilities (e.g. adjoining parks) and subsequently sell or dedicate land to the LUSD, to facilitate the timely location and construction of needed facilities and to minimize the financial burden of these improvements.

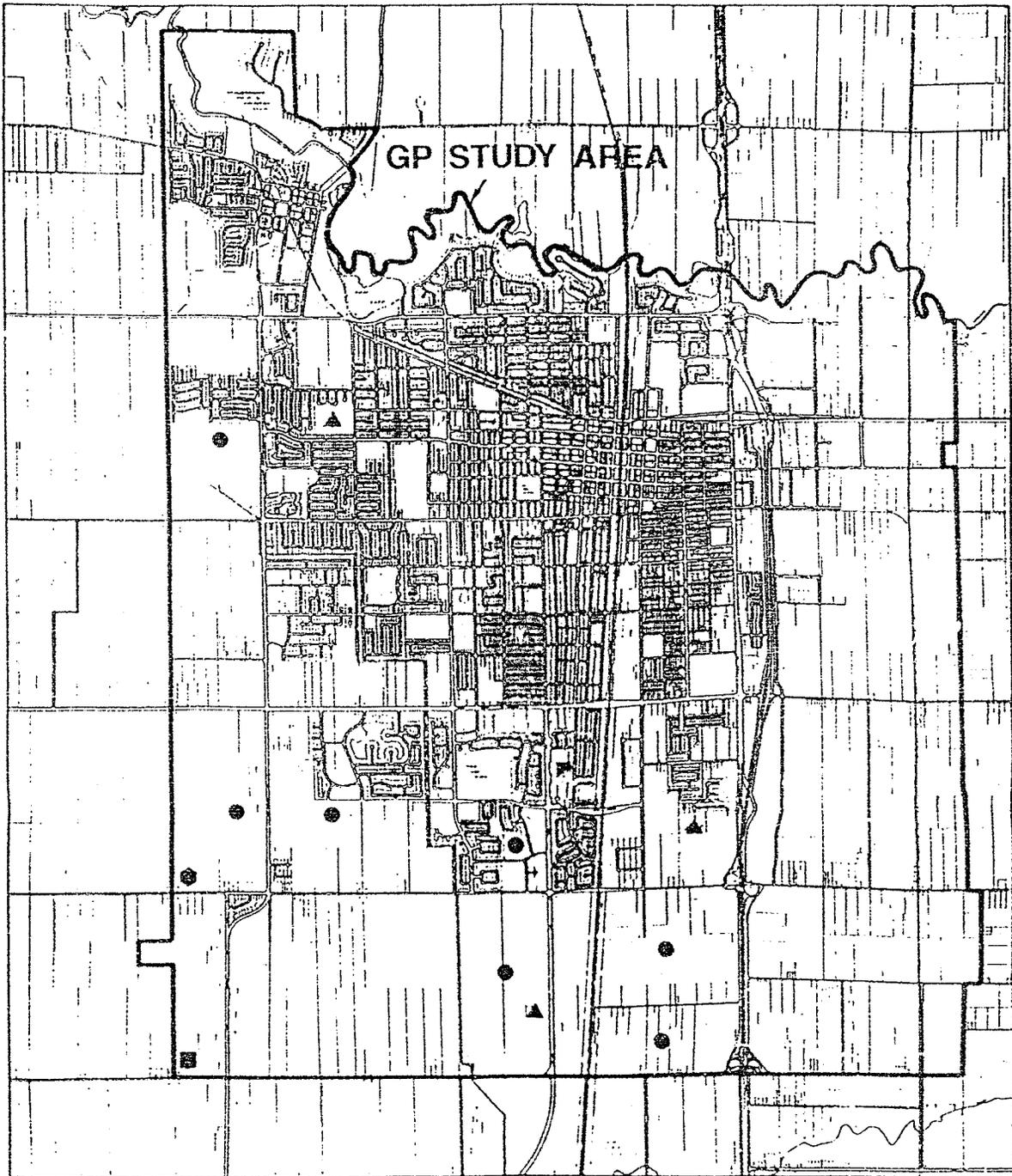
### Option 2

- o The implications for Option 2 would be the same as those for Option 1.
- o Construct two additional elementary school sites, one additional middle school site, one additional high school site, and one additional continuation school site to meet the projected demand.

---

### Option 3

- o The implications for Option 3 would be the same as those for Option 2.
- o Construct four additional elementary school sites, one additional middle school site, one additional high school site, and one additional continuation school site, to meet the projected demand.



LEGEND

- Elementary School
- ▲ Middle School
- High School
- Continuation School

FIGURE 8-11. SCHOOLS REQUIRED UNDER OPTION 3

Source: Lodi Unified School District Staff

Lodi General Plan





## CHAPTER 9. Transportation

This section is based on information provided by TJKM Transportation Consultants.

### METHODOLOGY

The future roadway needs of each of the GP options were developed using the same method. A Citywide computer-based travel demand model was used to simulate existing traffic volumes and forecast future traffic volumes. The model simulates daily traffic volumes for traditional travel demand forecasting procedures: trip generation, trip distribution, and traffic assignment for each land use option.

The model that was developed used a proprietary software package known as MINUTP. MINUTP can be thought of as a framework of transportation modeling modules that is custom fit to a specific study area. The information required to operate the model includes detailed inventories of existing land development, street facilities, existing traffic volumes, and regional travel patterns and behavior. These elements are integrated into the model framework, along with specific travel parameters that are developed to produce an accurate simulation of existing traffic flows in the study area. Once existing traffic conditions are simulated by the model, it is considered **valid** for forecasting future traffic conditions.

The traffic volumes at buildout of each land use option were based on the calibrated Citywide model, with adjusted land use data and a circulation network that varied by option. The land use data were based on Options 1, 2, and 3, as outlined in Draft General Plan Option Report (J. Laurence Mintier & Associates 1988). The circulation network for each option were, provided by City of Lodi Public Works Department staff (Fernandez pers. comm.).

The future circulation network for each land use option was determined by comparing the projected daily traffic volumes with the capacities for various roadway types. The recommended capacities for various roadway types are shown in Table 9-1. The capacities shown in Table 9-1 represent two operating conditions: level of service (LOS) C and E. LOS is a measure of traffic operating conditions whereby letter grades A through F are assigned to a roadway segment and represent progressively congested traffic conditions. LOS C is the operating condition that City of Lodi Public Works Department staff have established as the criteria for acceptable traffic conditions. The future roadway network was established using LOS C capacities for various roadway types.

Table 9-1. Recommended Capacities for the  
Lodi General Plan Study Area

Roadway Type	Daily Capacities	
	LOS C	LOS E
Six-Lane Freeway	90,000	112,500
Four-Lane Freeway	60,000	75,000
Six-Lane Divided Arterial	36,000	45,000
Four-lane Divided Arterial	24,000	30,000
Four-Lane Undivided Arterial	22,000	25,000
Two-Lane Arterial	14,000	17,500
Two-Lane Collector	10,000	12,500
Two-Lane Residential	4,000	5,000
Two-Lane Freeway Ramp (New)	22,000	30,000
One-Lane Freeway Ramp (New)	11,000	15,000
One-Lane Freeway Ramp (Old)	9,000	12,000

Source: TJKM Transportation Consultants 1988.

The total road miles of each roadway type by option are shown in Table 9-2. The two-lane collectors, residential streets, and freeways are not included in the estimates of road miles.

### **Option 1**

Implementation of Option 1 would increase the total arterial miles traveled in the City of Lodi and within the region by increasing the population in the city limits. As shown in Table 9-2, Option 1 would require 13.7 miles of two-lane arterials, 6.6 miles of four-lane undivided roads, 8.5 miles of four-lane divided roads, and no miles of six-lane divided roads. The traffic volumes associated with buildout of Option 1 are shown in Figure 9-1. The circulation network that would need to be developed to accommodate traffic volumes from buildout of Option 1 while maintaining LOS C is shown in Figure 9-2.

### **Option 2**

Implementation of Option 2 would increase the total arterial miles traveled in the City of Lodi and within the region by increasing the population in the city limits. As shown in Table 9-2, Option 2 would require 12.1 miles of two-lane arterials, 10.0 miles of four-lane undivided roads, 7.3 miles of four-lane divided roads, and 2.0 miles of six-lane divided roads. The traffic volumes associated with buildout of Option 2 are shown in Figure 9-3. The circulation network that would need to be developed to accommodate traffic volumes from buildout of Option 2 while maintaining LOS C is shown in Figure 9-4.

### **Option 3**

Implementation of Option 3 would increase the total arterial miles traveled in the City of Lodi and within the region by increasing the population in the city limits. As shown in Table 9-2, Option 3 would require 10.9 miles of two-lane arterials, 16.4 miles of four-lane undivided roads, 7.3 miles of four-lane divided roads, and 2.0 miles of six-lane divided roads. The traffic volumes associated with buildout of Option 3 are shown in Figure 9-5. The circulation network that would need to be developed to accommodate traffic volumes from buildout of Option 3 while maintaining LOS C is shown in Figure 9-6.

## **IMPLICATIONS FOR THE GENERAL PLAN**

In addition to the development of the required circulation network, adoption of any of the land use options should consider also the following recommendations:

Table 9-2. Comparison of Road Miles by Arterial Type

<u>Option</u>	<u>Road Miles</u>			
	<u>2-Lane Arterial</u>	<u>4-Lane Undivided</u>	<u>4-Lane Divided</u>	<u>6-Lane Divided</u>
1	13.7	6.6	8.5	0.0
2	12.1	10.0	7.3	2.0
3	10.9	16.4	7.3	2.0

Source: TJKM Transportation Consultants 1988.

Note: Based on 1985 survey with five cities of approximately the same size found that one maintenance person should be **added** for every 12.6 miles of streets.



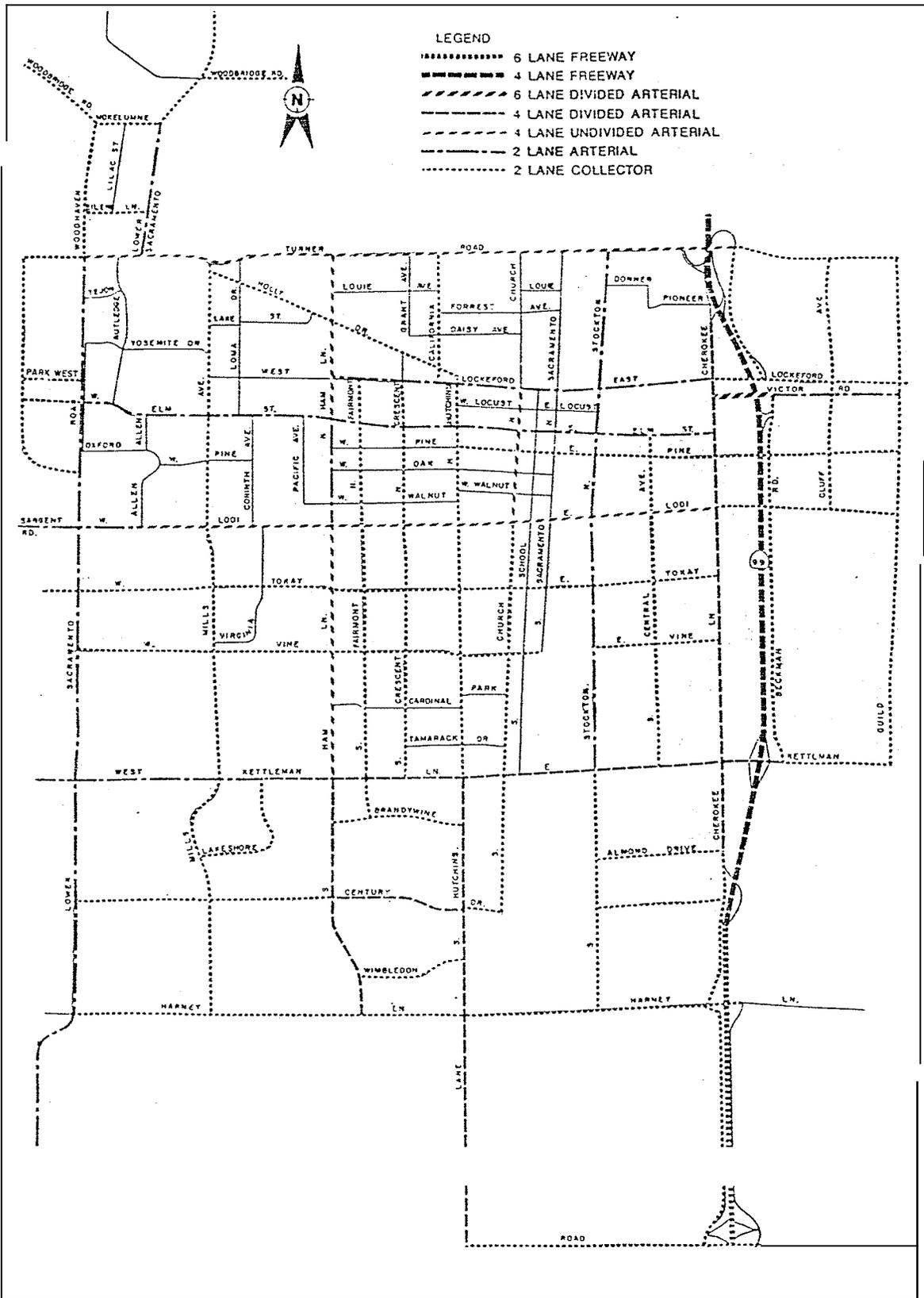


FIGURE 9-2. FUTURE CIRCULATION NETWORK (OPTION 1)

Source: TJKM Transportation Consultants 1988

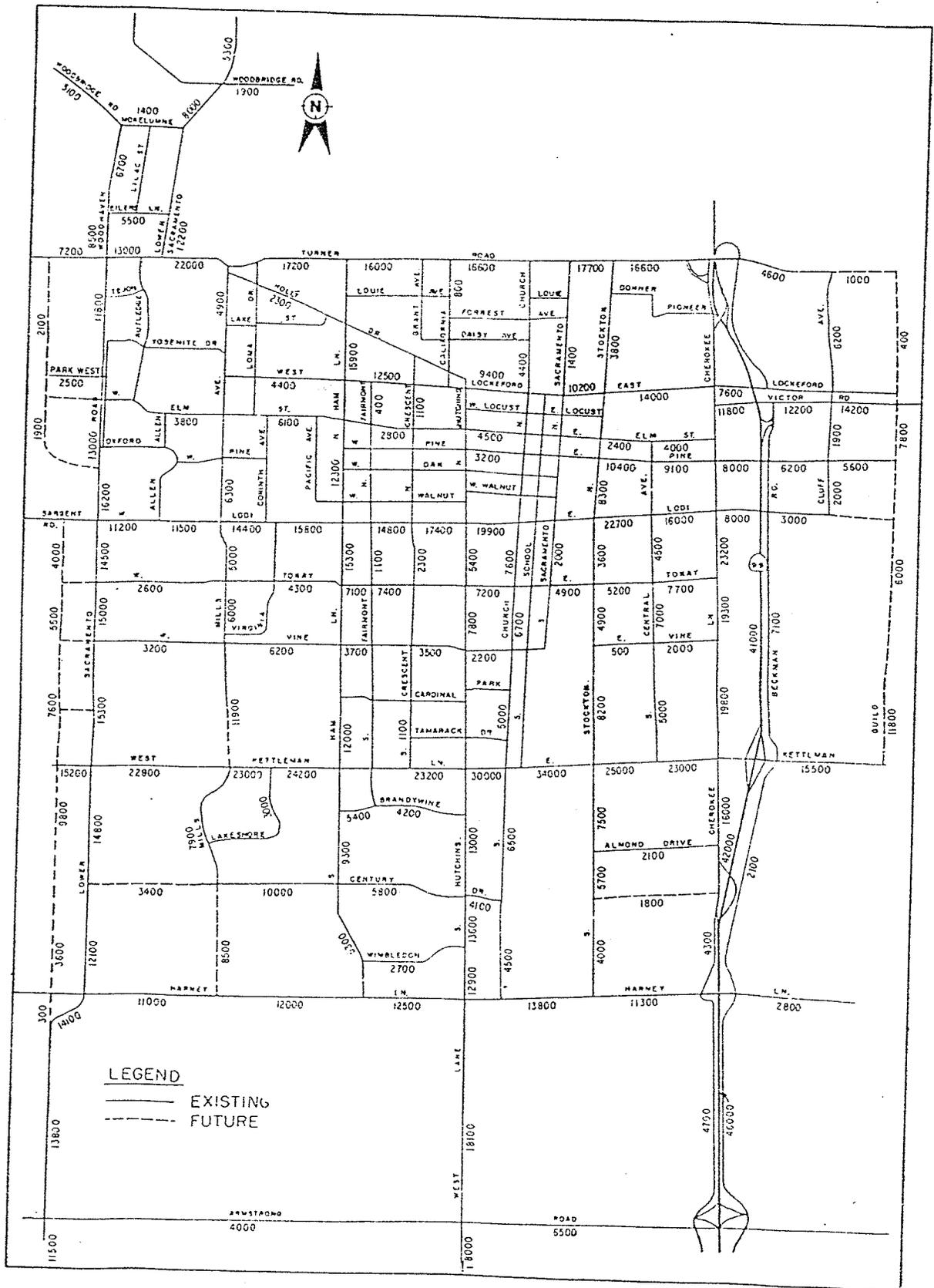


FIGURE 9-3. DAILY TRAFFIC VOLUMES (OPTION 2)

Source: TJKM Transportation Consultants 1988



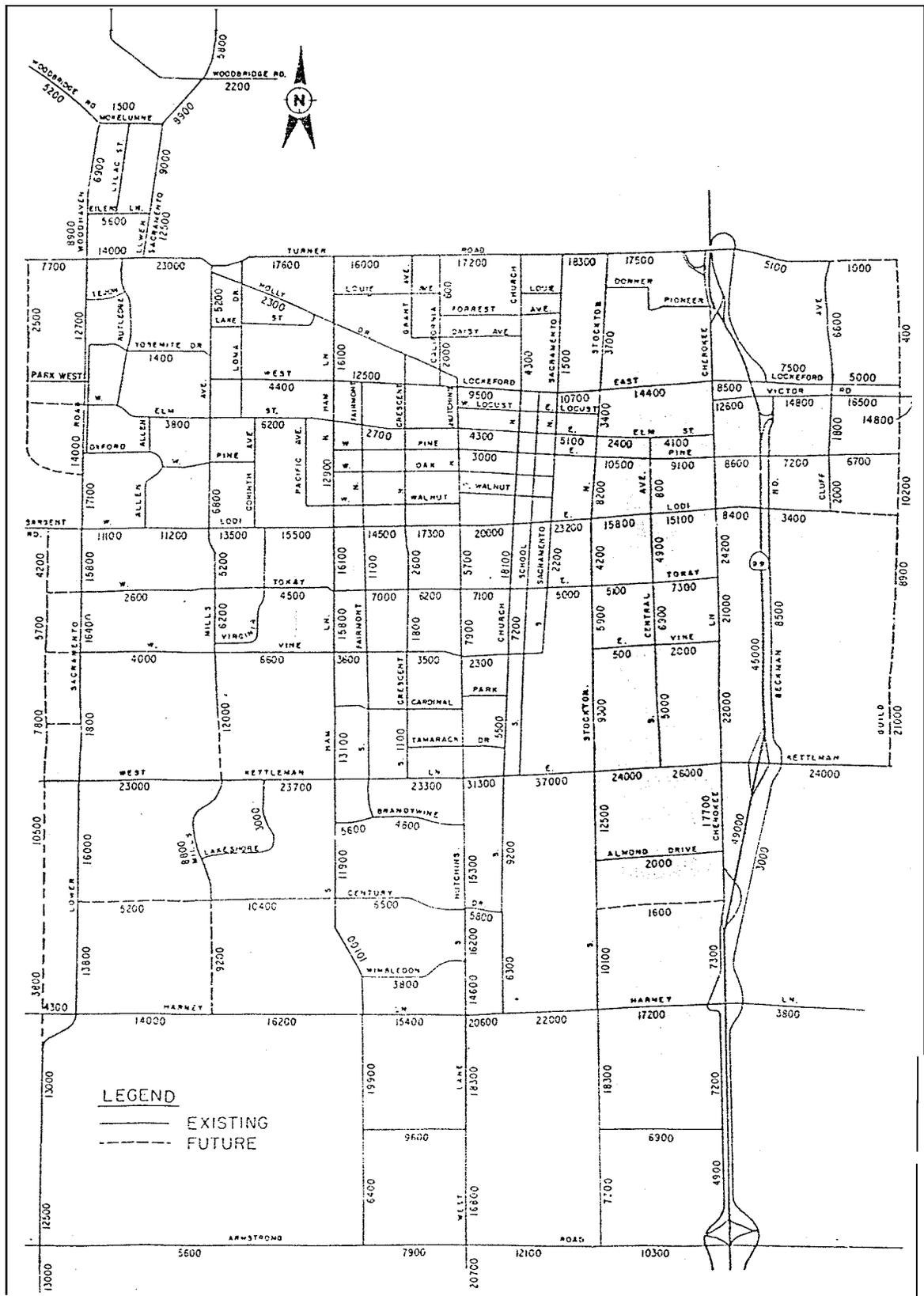


FIGURE 9-5. DAILY TRAFFIC VOLUMES (OPTION 3)

Source: TJKM Transportation Consultants 1988

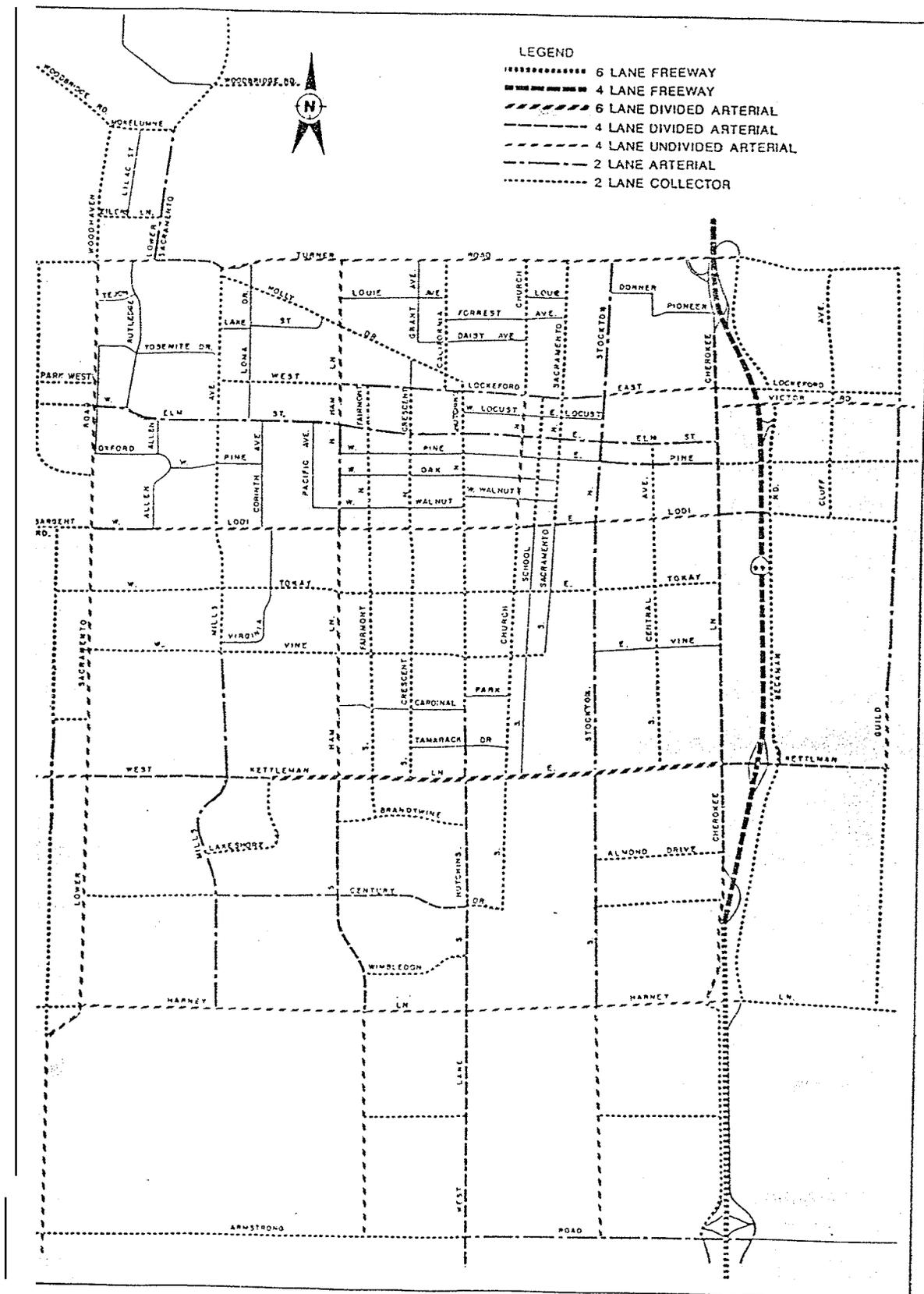


FIGURE 9-6. FUTURE CIRCULATION NETWORK (OPTION 3)

Source TJKM Transportation Consultants 1988

### Option 1

- o Develop a policy and fee schedule ~~for~~ funding improvements required for the circulation network based on fair share contributions from ~~a~~ new developments using a trip end fee method or some other appropriate approach.
- o Coordinate with Caltrans and San Joaquin County Council of Governments for planning **and** implementing future interchange improvements **that** would be necessary.
- o Coordinate with San Joaquin County to develop a policy and plan for improvements in the County's jurisdiction that would be required as **a** result **of** buildout of the City of Lodi's adopted GP option.
- o Coordinate with San Joaquin County Council **of** Governments, San Joaquin County, and Caltrans for planning and implementing measures to reduce regional trips originating from Lodi, which include strategic placement **of** park-and-ride lots and available information ~~for~~ other trip reduction efforts.

### Option 2

- o The implications for Option 2 would be the same as those for Option 1.

### Option 3

- o The implications for Option 3 would be the same as those for Option 1.



## CHAPTER 10. Bibliography

---

### REFERENCES CITED

Black & Veatch. 1988. Unpublished data for future sewerage system improvements for various land use options for the Lodi general plan update. Pleasant Hill, CA. Prepared for: City of Lodi Public Works Department, Lodi, CA. Unpublished data.

J. Laurence Mintier & Associates. 1988. City of Lodi general plan draft general plan options. Sacramento, CA. Prepared for: City of Lodi Community Development Department, Lodi, CA.

Jones & Stokes Associates, Inc. 1987. Final summary of community opinion survey and interviews. (JSA 86-101.) Sacramento, CA. Prepared for: City of Lodi Community Development Department, Lodi, CA.

\_\_\_\_\_. 1988a. Background report general plan update - City of Lodi. (JSA 86-101.) Sacramento, CA. Prepared for: City of Lodi Community Development Department, Lodi, CA.

\_\_\_\_\_. 1988b. Land absorption study general plan update - City of Lodi. (JSA 86-101.) Sacramento, CA. Prepared for: City of Lodi Community Development Department, Lodi, CA.

Psomas and Associates. 1985. Unpublished data for future water system improvements for various land use options for the Lodi general plan update. Sacramento, CA. Prepared for: City of Lodi Public Works Department, Lodi, CA.

TJKM Transportation Consultants. 1988. Unpublished data on future traffic volumes for various land use options for the Lodi general plan update. Fair Oaks, CA. Unpublished report.

### PERSONAL COMMUNICATIONS

Factor, Bill. Associate Planner. San Joaquin County Department of Planning and Building Inspection, Stockton, CA. September 22, 1988 - telephone conversation.

Fernandez, Paula. Traffic Engineer. City of Lodi Community Development Department, Lodi, CA. November 1988 - telephone conversations.

Hand, Art. Planning Analyst. Facility Planning Department, Lodi Unified School District, Lodi, CA. October 3-13, 1988 - telephone communications, notes, and memoranda.

Hughes, Larry. Fire Chief. City of Lodi Fire Department, Lodi, CA. September 28, 1988  
- meeting.

Prima, Richard. Chief Civil Engineer. City of Lodi Public Works Department, Lodi, CA.  
August-November 1988 - telephone conversations, meetings.

Schroeder, Jim. Community Development Department. City of Lodi Community  
Development Department, Lodi, CA. September-October 1988 - telephone  
conversations.

Williams, Floyd. Chief of Police. City of Lodi Police Department, Lodi, CA. September  
28, 1988 - meeting.

Williamson, Ron. Director. City of Lodi Parks and Recreation Department, Lodi, CA.  
October 5 and 6, 1988 - telephone conversations.



## **CHAPTER 11. Report Preparation**

This Options Assessment Report has been prepared by Jones & Stokes Associates, Inc. under contract to the City of Lodi Community Development Department. The persons responsible for preparing this report are listed below:

### **JONES & STOKES ASSOCIATES, INC.**

#### **JSA Management Team**

Ron Bass - Project Manager  
Francine Demos-Petropoulos - Project Coordinator

#### **JSA Technical Staff**

Erin Maclean - Law Enforcement, Fire Protection,  
and Parks and Recreation  
Valerie Rosenkrantz - Transportation  
Ira Saletan - Schools  
Roger Trott - Population and Employment

#### **JSA Production Staff**

Victoria Axiaq - Production Coordinator  
Ruth McRonalD - Word Processor  
Jack Whelehan - Editor  
Ken McNeil - Editor's Assistant  
Tony Rypich - Graphics

### **J. LAURENCE MINTIER & ASSOCIATES** **Land Use and Housing**

J. Laurence Mintier  
Robert Lagomarsino

**BLACK & VEATCH**  
**Sewerage**

**Frank A. Appelfeller**

**CITY OF LODI PUBLIC WORKS DEPARTMENT**  
**Storm Drainage**

Richard Prima  
Wes Fujitani

**PSOMAS AND ASSOCIATES**  
**Water**

Harold L. Welborn  
Joe Domenichelli

**TJKM TRANSPORTATION CONSULTANTS**  
**Transportation**

**Jeff Clark**



**APPENDIX A. Executive Summary of the City of Lodi  
General Plan Update Land Absorption Study**

---

---

## Executive Summary

---

---

The role of a community's general plan is to guide the type, location, and timing of urban growth and infrastructure development over a long-term period. For a general plan to achieve its goals, the plan should be linked to economic and market realities. The timing of development of lands designated by the general plan for certain uses will occur only if the urban land market can support it such development.

This report provides an evaluation of the market demand for major land uses in the Lodi area over a 20-year period from 1987 to 2007. The study is designed to provide market information and land absorption forecasts that will help guide the development of Lodi's General Plan Update.

Evaluations were prepared for four broad land use categories defined by the markets for residential, retail commercial, office commercial, and industrial land. The primary products of these market evaluations were 20-year absorption schedules showing land absorbed in 5-year increments.

The market demand for land within each General Plan category was evaluated based on two future growth scenarios representing the expected lower and upper range of demand. Absorption schedules were prepared for both scenarios for each of the nine General Plan categories.

The following sections present summaries of the basic assumptions used to forecast the demand for land in Lodi under Growth Scenarios 1 and 2.

### GROWTH SCENARIO 1 ASSUMPTIONS

- o The City will adopt a policy limiting the annual growth of Lodi's housing stock to 2 percent (compounded) over the 20-year period of analysis.
- o The City will allocate future housing permits so that 65 percent of all new housing is single-family and 35 percent is multifamily.
- o Average household size in Lodi will remain relatively stable over 20 years, decreasing by 3 percent.
- o Per capita sales in Lodi stores will remain relatively stable over 20 years, with per capita apparel and general merchandise sales increasing by 5 percent and per capita automobile sales decreasing by 10 percent.

- o The future demand for office space in Lodi will be generated by local office users. No regional office deveiopment will occur.