DINUBA GENERAL PLAN UPDATE

Draft Background Report

October 2006

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DINUBA GENERAL PLAN UPDATE
BACKGROUND REPORT

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CHAPTER ONE

INTRODUCTION

CHAPTER ONE - INTRODUCTION

1.1 Project Location and Description

The City of Dinuba is located in northwestern Tulare County in the Southern San Joaquin Valley. The town's main transportation routes are Alta Avenue and El Monte Way. Alta Avenue (called Road 80 outside the City) runs north/south and connects Dinuba to Reedley, about five mile to the northwest in Fresno County, and to the west side of Visalia and Highways 198 and 99 about fifteen miles to the south. El Monte Way (which outside the City is called Avenue 416 or Mountain View Avenue) runs east/west and connects Dinuba to Orosi about six miles to the east and to Highway 99 about twelve miles to the west. Incorporated as a General Law City in 1906, Dinuba is located approximately 15 miles northwest of Visalia, the County seat, and 30 miles southeast of Fresno. The current population, according to the Department of Finance (DOF), was 19,578 as of January 1, 2006. Dinuba's economy is based mainly on agriculture, but also has significant components of food manufacturing and distribution. The City limits currently contain 6.2 square miles, of which 3.7 square miles is urbanized.

This General Plan Update will cover a 20-year period, from 2006 to 2026. At that time, Dinuba is expected to have a population in excess of 34,000.

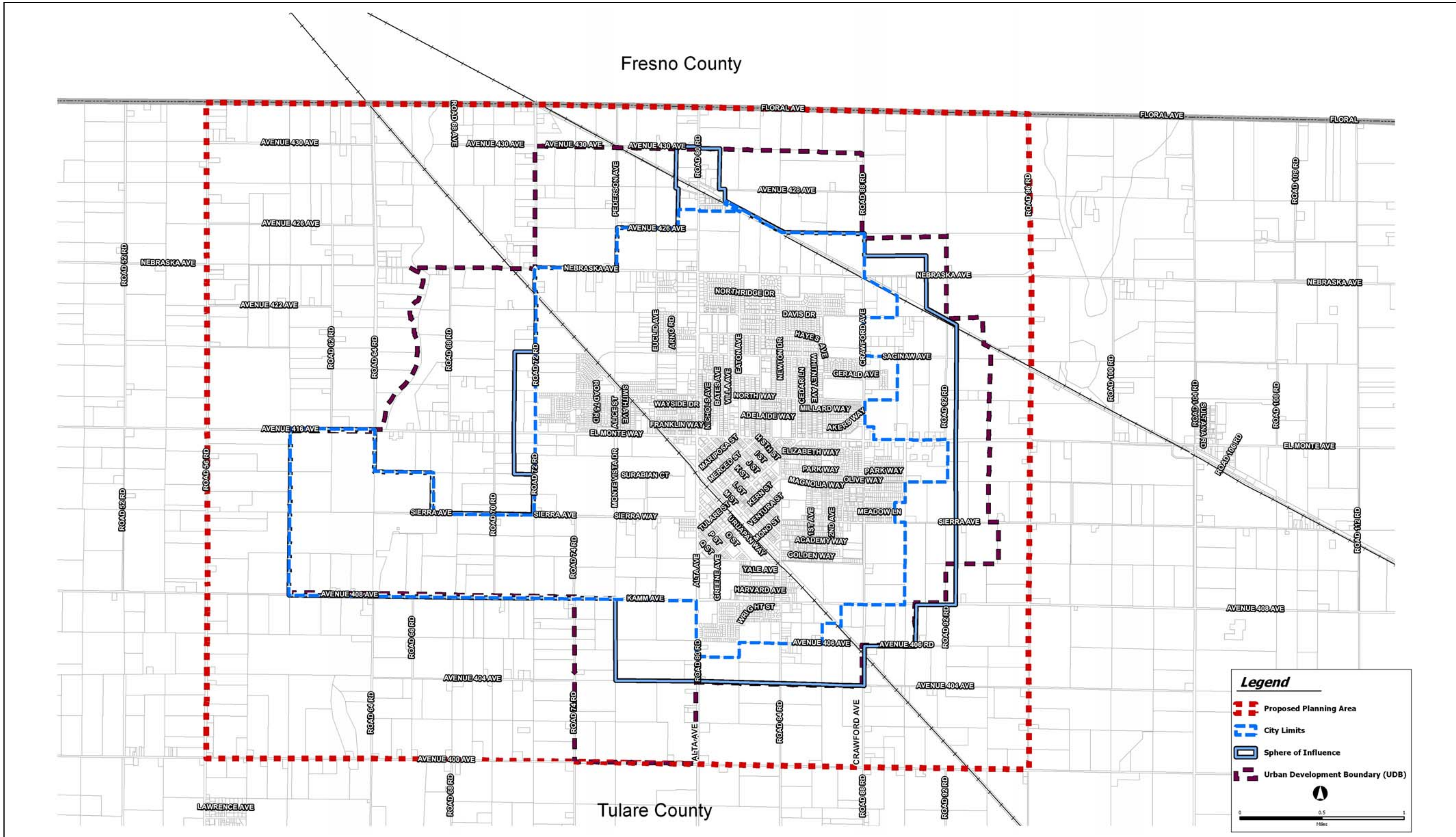
While many residents cherish the "small town" character of the City, they also find commercial and recreational opportunities limited because of the City's size. The General Plan Update will include, in addition to more traditional topics and issues, modified land use controls that will focus economic development to capture lost sales tax revenue currently generated by Dinuba residents shopping outside of the City, and increased employment and housing opportunities. The City's public infrastructure will also be evaluated and the means to finance its expansion will also be evaluated.

Figure 1-1 shows the City's current growth boundaries including the City limits, adopted Sphere of Influence (SOI) and Urban Development Boundary (UDB)– the area that has land use designations under the City's General Plan. It also shows the Planning Area Boundary– the area of study for this Background Report. Table 1-1 shows the existing General Plan Land Use acreage within the City limits, SOI, and UDB.

The Planning Area is located entirely on the floor of the San Joaquin Valley, a nearly level area with almost no constraints to development. The only significant topographic features in the area are Travers Creek and the many other ditches and irrigation canals throughout the area, and the southern end of Smith Mountain, located just inside of, and beyond, the northeast part of the proposed Planning Area.

The determination of the Planning Area boundary for the General Plan Update was guided by the following factors:

- Existing extent of development in the area, including unincorporated areas, and contiguous undeveloped parcels.



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DINUBA PLANNING AREA

Figure 1 - 1

Table 1-1
Existing General Plan Land Use (in Acres)
City Limits, SOI and UDB

General Plan Land Use Category	City Limits	SOI	UDB
Residential – Low Density	8.4	106.6	153.9
Residential – Medium Low Density	697.7	991.8	1,381.2
Residential – Medium Density	868.4	959.0	1,027.2
Residential – Medium High Density	112.3	125.0	130.6
Residential – High Density	35.8	34.2	34.2
Subtotal Residential	**1,722.7**	**2,216.7**	**2,727.2**
Commercial – Central District	32.9	34.1	34.1
Commercial – Community	96.9	124.3	124.3
Commercial – General	37.6	163.4	180.7
Commercial – Neighborhood	24.2	38.8	39.1
Professional Office	41.4	41.4	41.4
Subtotal Commercial	**291.8**	**402.0**	**419.6**
Light Industrial	535.9	606.0	653.4
Park/Ponding Basin	144.8	135.4	157.6
Public/Semi-Public	683.5	153.5	354.7
Urban Reserve	0.0	235.9	2,183.0
Green Belt	0.0	4.5	1,473.8
Total	**3,420.3**	**3,754.0**	**7,969.2**
Right of Way	550.9	1,188.0	768.6
Total with Right-of-Way	**3,971.3**	**4,942.0**	**8,737.8**

Source: Quad Knopf, Tulare County and LAFCo GIS.
Note: Right-of-way is estimated based on the total acreage of each boundary subtracted from the land use acreage totals.
[1]Includes Green Belt.

- Location of agricultural land under the Williamson Act contract.
- Hard edges including major roadways.
- Undeveloped areas necessary to square off the development boundaries.
- Areas within which the City may likely grow over the next 20 years.
- Agricultural areas that are key elements of Dinuba's economy.

The proposed Planning Area includes sufficient area to meet the City's land development needs over the planning period of 20 years and a geographical territory to enable City review of development proposals that may occur in the County adjacent to the City limits. Its long-range purpose is to serve as the catalyst for future planning discussion and vision. The proposed Planning Area will provide sufficient flexibility to review alternative growth scenarios that would focus growth in different sections of the community according to alternatives identified by the community.

CHAPTER TWO

LAND USE

CHAPTER TWO – LAND USE

2.1 Present Dinuba General Plan

The City of Dinuba General Plan is the current comprehensive plan governing the community. The General Plan includes the Land Use Element; Circulation Element; Housing Element; Open Space, Conservation and Recreation Element; Urban Boundary Element; Community Design Element; Noise Element; Public Services and Facilities Element; and Safety Element. The Housing Element was last updated in 2004, and all the other Elements in 1997. Used as a guide for orderly development, Dinuba's Land Use Element designates the general distribution of land for residential, commercial, industrial, and public facilities needed to serve the residents of the City. The Plan includes land outside the City's boundaries, providing a comprehensive growth and development plan. Figure 2-1 shows the current General Plan land use designations. Table 1-1 shows the distribution of land use as designated in the General Plan.

2.2 Present City Land Use Controls

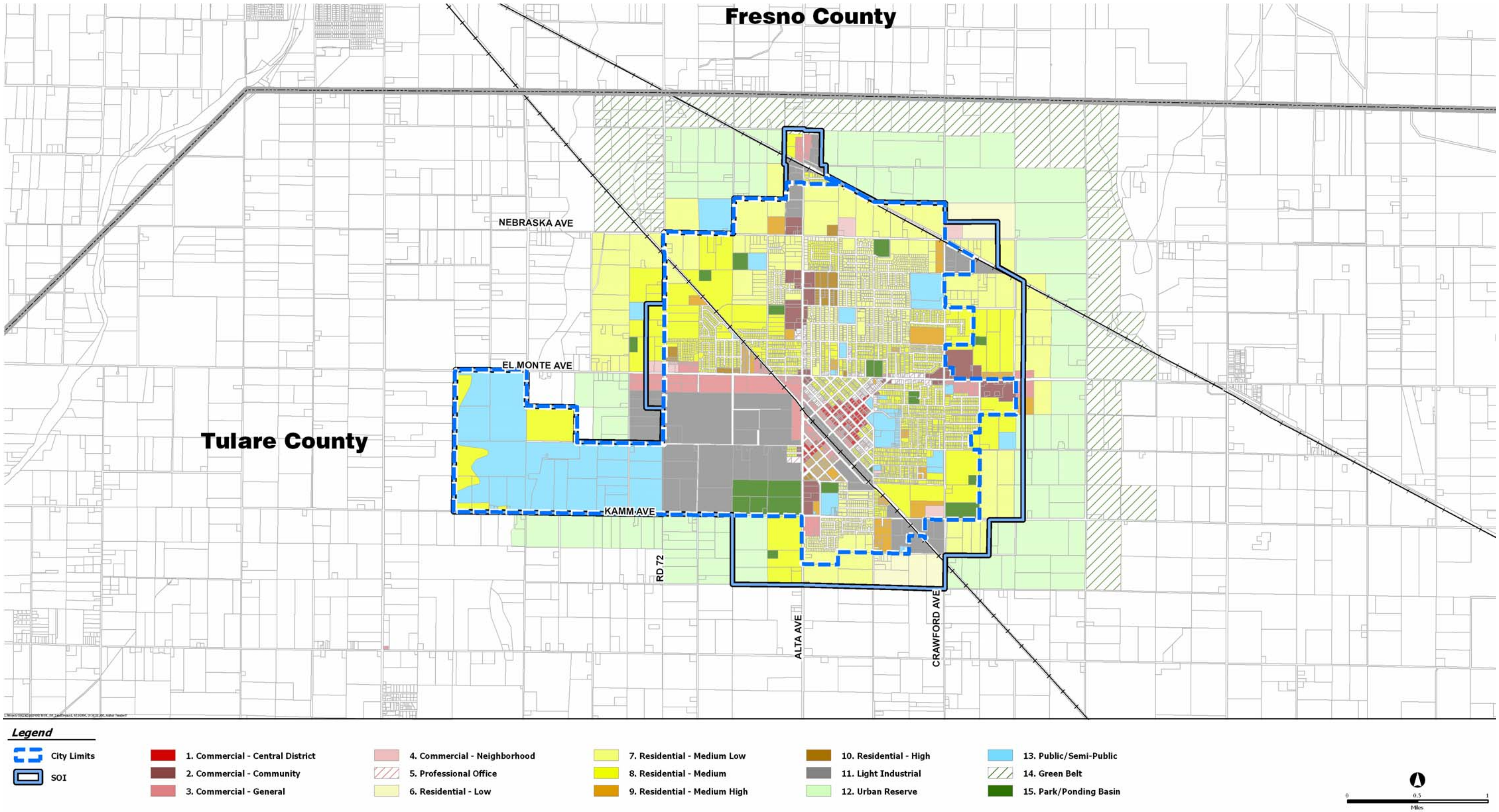
Lands within the City limits are also governed by the Dinuba Zoning Ordinance. The Zoning Ordinance is used to implement the General Plan. It divides the City into zones and prescribes regulations relating to land use, the size of the building allowed on the land, and the height and intensity of use. Changes to zone boundaries must be consistent with the General Plan. Like the General Plan, the Zoning Ordinance is periodically amended to reflect changes in urban development standards. As part of the General Plan Update, the Zoning Ordinance will also be updated so it is consistent with the General Plan.

2.3 Existing Land Use in the Sphere of Influence

The City recently expanded its UDB in July 2006, expanded its SOI in August 2006, and completed an annexation in September 2006. The current City limits contain 62 square miles, of which 4.5 square miles is urbanized. A windshield survey of the Planning Area was conducted in April, 2006 (by Quad Knopf, project consultant) and included all parcels within the UDB in effect at that time. Table 2-1 shows that the existing land uses within the City limits include 1,567.1 acres of residential, 336 acres of commercial including 41.4 acres of Professional Office Space, 533.4 acres of industrial, 294.5 acres of park/open space, 146.7 acres of public/semi-public facilities, and 14.5 acres of urban reserve. Figure 2-2 illustrates the distribution of these uses. As with most cities in the San Joaquin Valley, the detached single-family home is the predominant residential unit in Dinuba.

2.4 Tulare County General Plan and Zoning Ordinance, Implications

Tulare County is responsible for planning and land use control in the unincorporated areas of the County. Urban development is to be directed by County policy towards existing cities and urbanized areas. The Tulare County General Plan states that "new urban development should be an extension of existing urban areas" (Policy 1LU.A.l).



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EXISTING GENERAL PLAN LAND USE

Figure 2 - 1

Table 2-1
Existing Land Use (Acres)
Within Dinuba City Limits as of April 2006

Land Use	Acres
Agriculture	307
Commercial	187
Office	10
Industrial	222
Park/Ponding Basin	67
Public/Semi-Public	332
Residential	1,056
Right-of-Way	513
Vacant/Undeveloped	423
Total	**3,118**

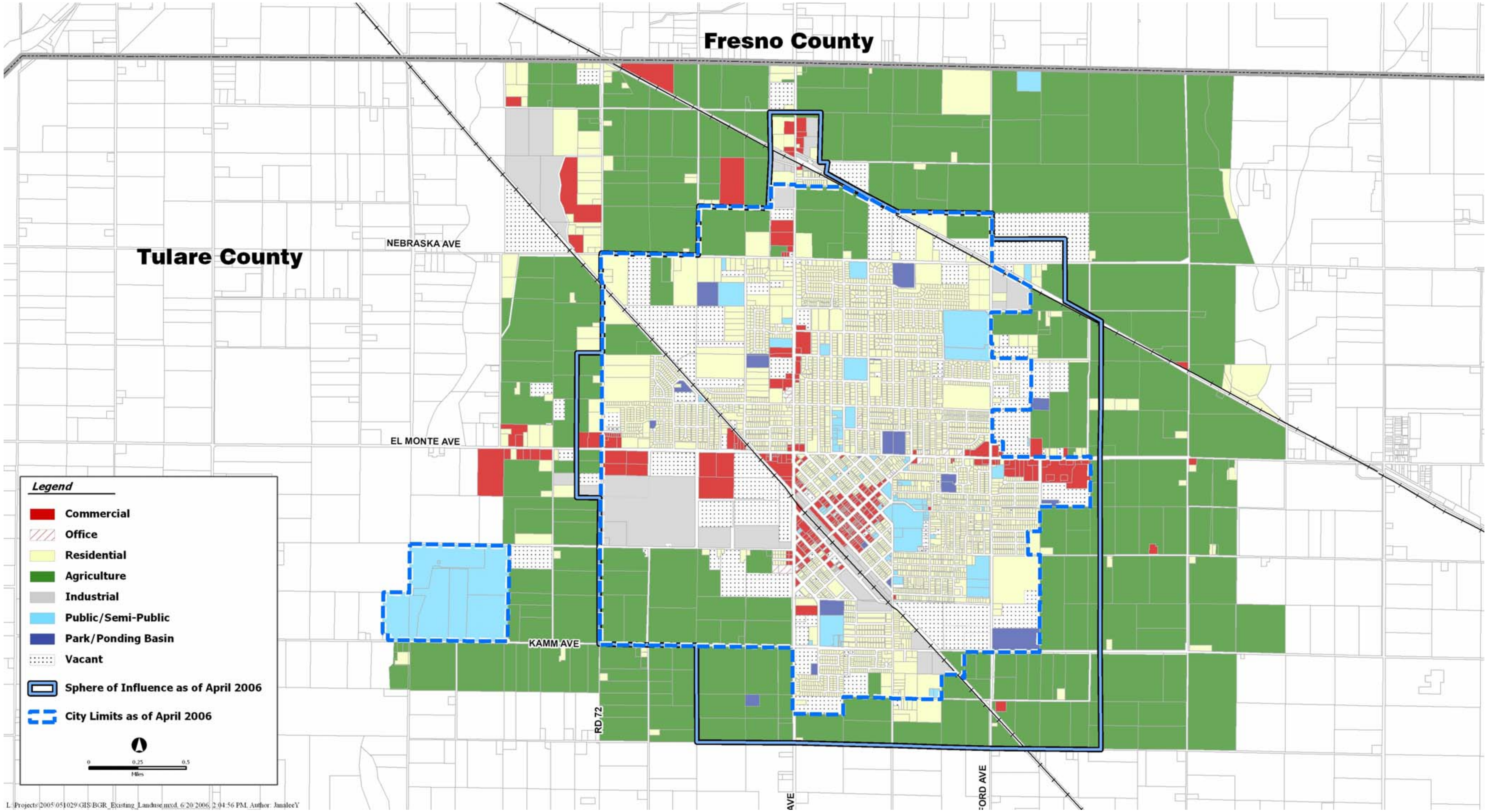
Source: Quad Knopf Windshed Survey, April 2006
Note: Does not include right-of-way. City limits were expanded in September 2006.

As a planning tool, a SOI is intended to define the area around a city into which new urban development will be extended within the Planning period, and to accommodate all classifications of urban land use. It is a boundary line that is recognized by the Local Agency Formation Commission (LAFCo) as the ultimate growth boundary of the community over the life of the General Plan, and all land within the SOI is planned for eventual development in a mixture of urban and urban-related uses.

Dinuba's Urban Development Boundary extends well beyond its SOI, as shown in Figure 1-1. This is a reflection of the City's expectation that the community will continue to grow beyond the current SOI. Land within the UDB is mostly designated as Urban Reserve and Greenbelt on the City's General Plan Land Use map, but also includes some land designated for residential, commercial, industrial, and public/semi-public uses.

2.5 Sphere of Influence

The SOI is defined in California Government Code Section 56076 as "a plan for the probable physical boundaries and service area of a local agency as determined by" LAFCo. Annexations to the City must be located within the SOI in order to be approved by LAFCo. By State law, the City must be notified of any proposed land use changes within its SOI and be provided an opportunity to comment on the changes. The City recently expanded the boundaries of the SOI as part of the Reclamation, Conservation and Reclamation (RCR) project. As part of the RCR project, the City expanded the SOI to include both the RCR project area and all other areas within the City's then-current UDB, which was adopted as part of the last General Plan Update in 1997. The City also plans to request from LAFCo an expansion of the SOI to match the UDB proposed in this General Plan Update.



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EXISTING LAND USE

Figure 2 - 2

The Tulare County LAFCo reviews changes to SOI and Planning Area boundaries, annexations to cities and special districts in Tulare County, the adequacy of public services to proposed annexations, and the effect of these actions on prime agricultural land. Applications to amend City limits, for example, are presented to LAFCo, which then approves, approves with conditions, or denies the applications. LAFCo has adopted local goals, objectives and policies to guide its decision-making.

The conversion of agricultural lands to urban uses and the provision of urban services by growing communities are important issues to the County and LAFCo. Potential revenue losses to counties resulting from annexations have created problems in the relationship between cities and counties in California, and Tulare County is no different. Dinuba's planned growth will, at some time, require annexation of County land into the City. During the General Plan Update, the implications of the post-Proposition 13 fiscal environment to the City of Dinuba can be seen as an opportunity to create a more predictable revenue-expenditure model. Long range planning in the Dinuba SOI should occur with a vision shared by both parties and with a revenue stream that can be relied on for the duration of the agreement. An agreement would permit both parties to focus their limited resources on other matters; its absence would necessitate that the City and County coordinate their planning programs in a piecemeal fashion.

2.6 Estimated Demand for Land 2005 - 2030

The number of residential, commercial and industrial acres needed in the City of Dinuba through 2030 is based on population projections through 2030 (reference Table 2-2). The California Department of Finance estimates that Dinuba's January 2006 population was 19,578. By 2030, the population of Dinuba is estimated to be approximately 38,813, with a total of 1,554 acres of additional residential land needed, 109 total acres of commercial land needed, and 498 additional acres of industrial land needed. Table 2-3 shows the estimated added land demand between 2005 and 2030. Some of the projected land needed can be found in existing vacant land within the City. Figure 2-3 illustrates the land available for development within the SOI. This includes land that is either currently vacant or undeveloped and agricultural land. Agricultural land within the SOI is considered land available for development because all land within the SOI is currently available to the City for annexation and is thus available to the City for conversion to urban uses within the Planning Period.

Table 2-2
Population and Household Projections, 2005 to 2030*
City of Dinuba

	2005	2010	2015	2020	2025	2030
Total Population	19,297	22,192	25,520	29,348	33,751	38,813
Total Households	5,187	5,966	6,860	7,889	9,073	10,434
Average Household Size[1]	3.72	3.72	3.72	3.72	3.72	3.72

Source: 2000 U.S. Census, Department of Finance
*Population projection assumes 3% growth rate
[1]From 2000 U.S. Census

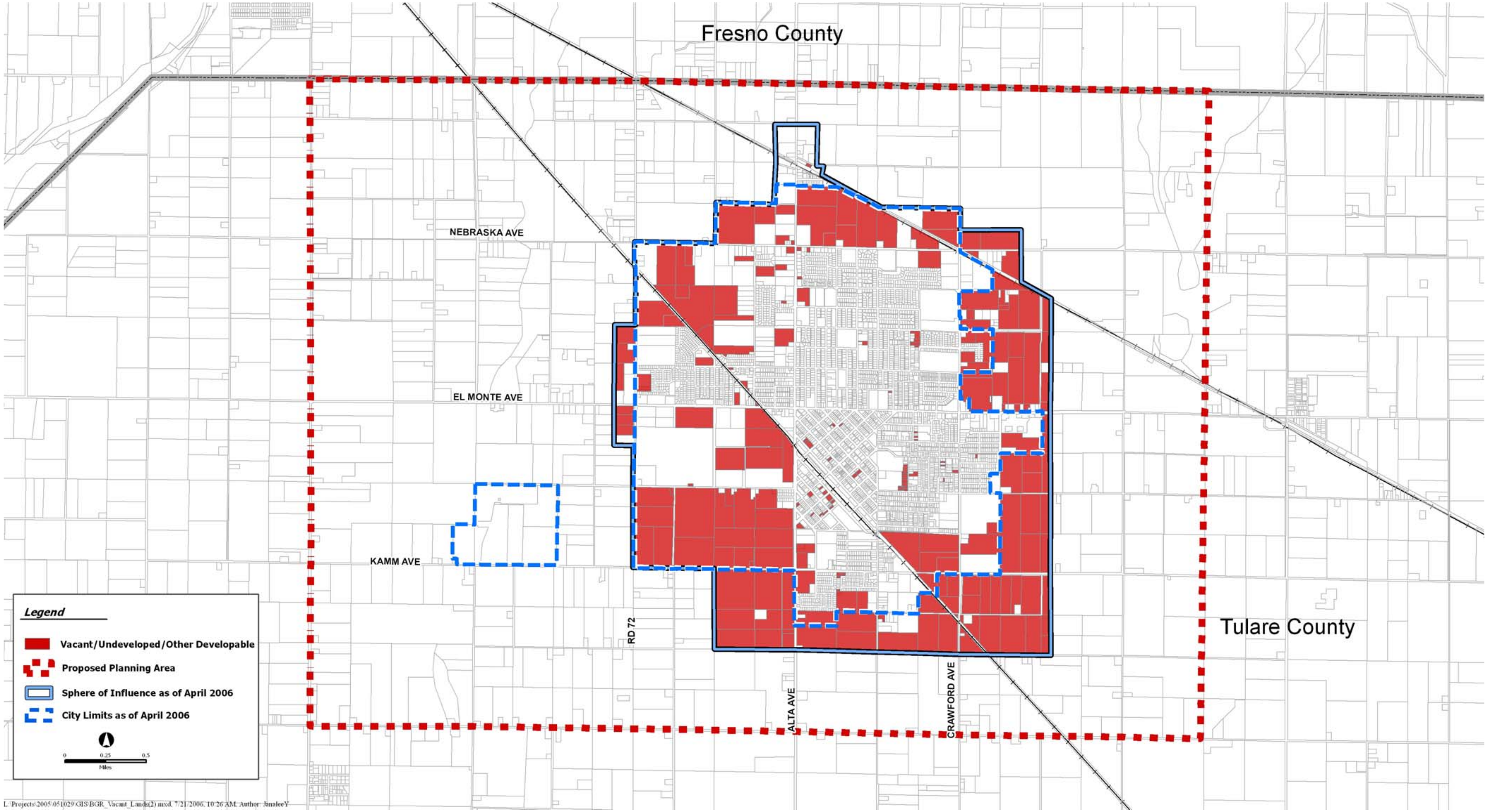
Table 2-3
Community Development Needs, 2005-2030
City of Dinuba

Year	Population	Additional Residential Needed	Total Commercial Needed	Additional Industrial Needed
2005	19,297	-	-	-
2010	22,192	231	26	67
2015	25,520	496	42	190
2020	29,348	801	61	279
2025	33,751	1,151	84	380
2030	38,813	1,554	109	498

Source: Quad Knopf, Inc.

2.7 Other Agencies' Relationship to Dinuba's General Plan (Federal and State Plans Regarding Public Lands and Facilities)

A number of state and federal agencies' activities have an effect on Dinuba's general planning issues. These include, but are not limited to, the Central Valley Regional Water Quality Control Board, Environmental Health Department, California EPA, the San Joaquin Valley Air Pollution Control District, and the Department of Water Resources. These agencies are interested in the interaction of the General Plan with their own long-range resource management activities. Further, many of these agencies have made technical guidelines available in order to assist the public and private sectors to manage development with natural resources in mind.



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VACANT/UNDEVELOPED/OTHER LAND AVAILABLE FOR DEVELOPMENT

Figure 2 - 3

CHAPTER THREE

URBAN DESIGN ANALYSIS

CHAPTER THREE – URBAN DESIGN ANALYSIS

3.1 Downtown

Dinuba's relatively small size provides its residents with short trip times and distances. For example, the location of post office, police, fire, and other governmental functions in the downtown area serves to reduce trip duration. The proximity of commercial services in this area, however limited, reinforces downtown's role as a center for government and commerce.

Dinuba's downtown can be defined as the primarily commercial area along Tulare Street from M Street to H Street, along Fresno and Kern Streets from M to J, and the block between Kern, L, Ventura, and M Streets. It has long been recognized as a place of opportunity as a commercial and cultural City center for the City and surrounding areas. However, this position is challenged by the growth of the City into outlying areas, and the difficulty of attracting and keeping thriving businesses and people in the downtown area. Businesses in downtown Dinuba must compete with businesses in Visalia which, while a half-hour drive away, have a much larger customer base. Other competition for businesses downtown comes from large retailers such as Wal-Mart, which in Dinuba is located on El Monte Avenue at Monte Vista Drive. The downtown commercial area faces challenges when competing with these other areas because it is characterized by aging infrastructure (such as old buildings and utility connections), and a lack of some of the amenities desired by retailers such as large lots and plentiful, on-site parking. Overcoming these obstacles and reasserting and/or redefining the historic relationship of downtown to the growing community will be a matter of much public debate. The City of Dinuba is committed to the enhancement and viability of the downtown to preserve its role as the heart of the community.

3.2 Design Review

According to the City of Dinuba's website, "for projects that are permitted by right in any zone, the applicant may simply apply for a building permit. If the project involves redeveloping an existing site with a similar use, a building permit can be issued in a minimal period of time with a minimal amount of staff review."

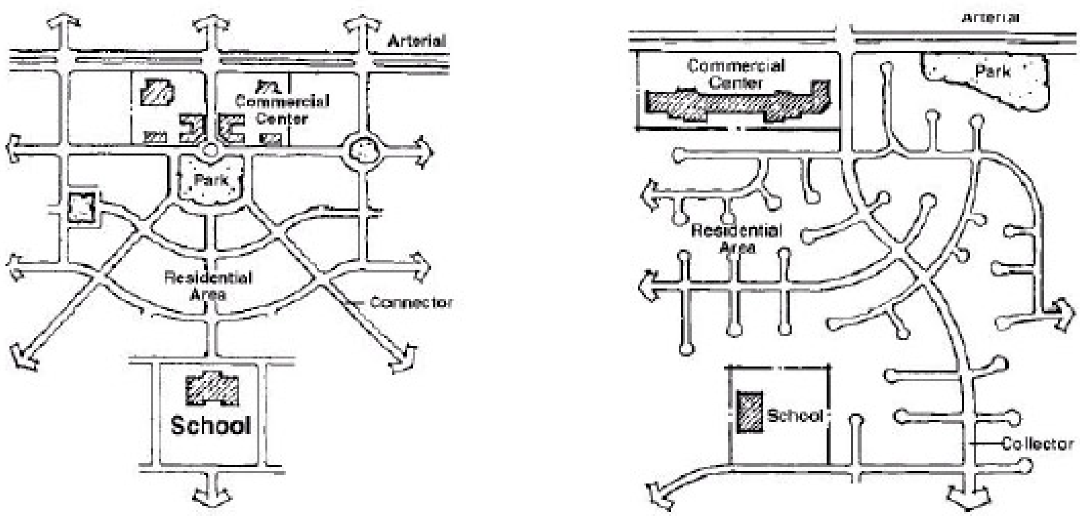
If the project involves intensifying the use on an existing site, City staff will review the application and may identify a need for site plan and/or architectural review, as well as other measures. If a project is a subdivision or involves a Parcel Map, General Plan Amendment, Zoning Code Amendment, or Conditional Use Permit, an application must be submitted which will then be subject to environmental review and project analysis by City staff. Then a Public Hearing will be held at which Staff's recommendations will be presented to the Planning Commission. Most Planning Commission actions are then referred to the City Council for action at a duly noticed public hearing. The City's website states that construction plans for residential construction "are to be submitted and reviewed by the Building Official before any building permit can be issued to the owner or developer. Plans shall be drawn to scale and shall include the following: Site Plan; Foundation Plan; Floor Plan; Floor Framing Plan; Roof Framing Plan; Construction Sections; Building Elevations; Connection Details; Engineering Details/Calcs."

3.3 Urban Form

Dinuba has a typical San Joaquin Valley "railroad town" layout. The town was built around a Southern Pacific Railroad depot, and downtown streets run parallel to the railroad in a northwest/southeast direction. Outside this area, roughly bounded by Alta Avenue, El Monte Avenue, College Avenue, and Vassar Avenue, streets run north/south and east/west. The older "railroad" part of town has a traditional late 19th to early 20th century "grid" system of streets. More recently constructed parts of town are characterized by longer blocks, cul-de-sacs, and "low connectivity" subdivisions- neighborhoods whose internal streets "funnel" traffic to a limited number of connection points into or out of the neighborhood. Examples of high and low connectivity network patterns are shown in Figure 3-1 below.

Figure 3-1 Street Connectivity

High Connectivity **Low Connectivity**



Source: Calthorpe Associates.

Dinuba has several options when it comes to the form of future development. If future development continues to follow current trends, limited access subdivisions of detached single family homes will be the dominant housing type in Dinuba. Due to concerns over the rising cost of housing and decreased affordability, and the environmental, social, and health effects of low-density, suburban-style development, many communities have begun to implement alternate development strategies.

These strategies tend to fall under the headings of smart growth, traditional neighborhood design (TND), and new urbanism. Traditional neighborhood design actually looks a lot like the older part of Dinuba – a regular grid of relatively narrow streets with sidewalks, street trees, and a mix of different types of homes and businesses with “eyes on the street”. These features are designed to promote a pedestrian friendly environment with a mix of residential and commercial uses. Benefits can include less traffic, more streetlife (which can also improve safety), and a better business climate for small local businesses.

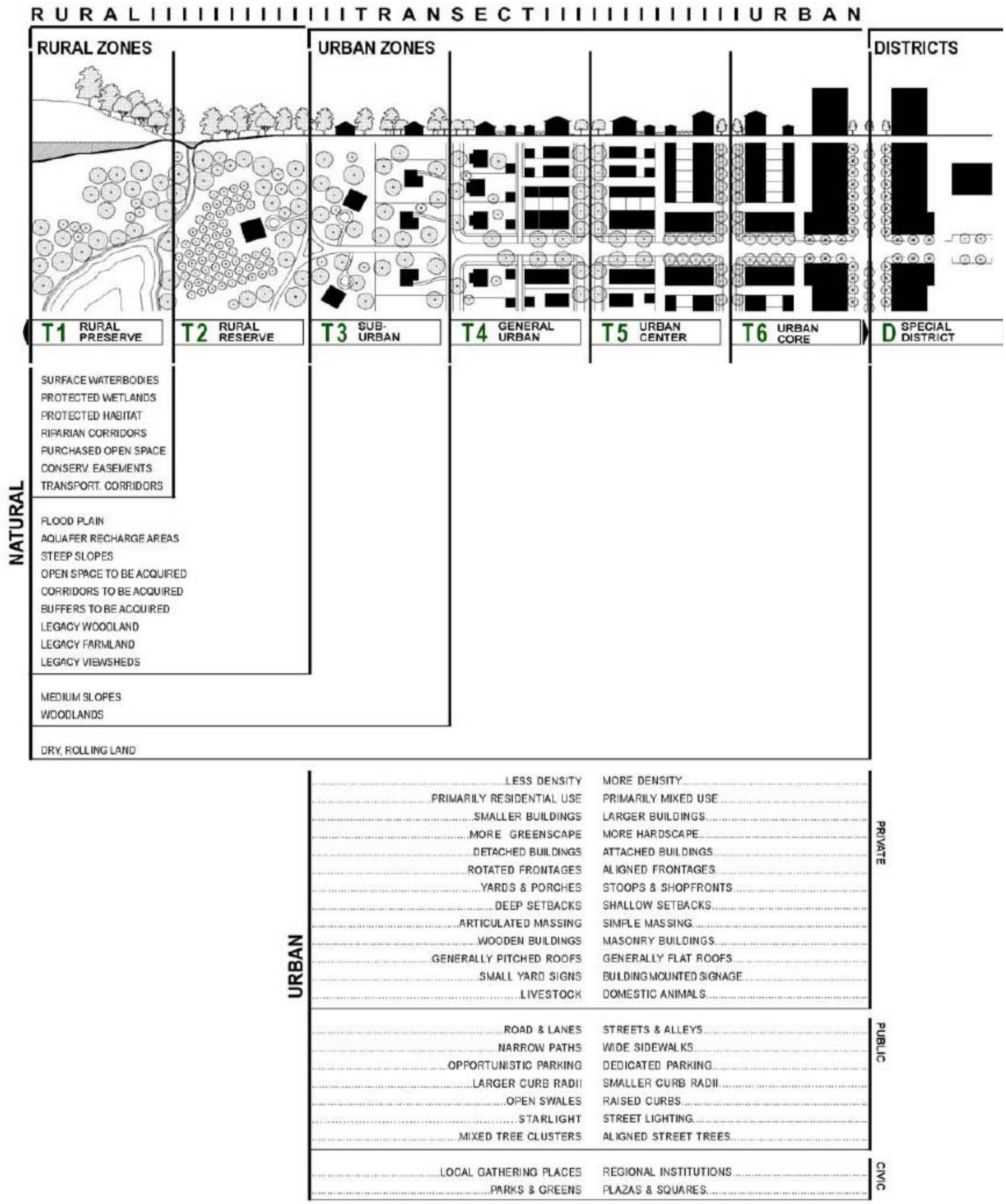
New Urbanism is a broader movement that seeks to create well-balanced, mixed-use, walkable neighborhoods, within metropolitan areas that support transit and provide open space. New approaches to zoning have recently been devised to implement these New Urbanist goals. One of these new forms of zoning is the Transect-Based Code.

The Transect represents a continuum of uses from completely rural to intensely urban, divided at various points into different “ecozones” (reference Figure 3-2). Development standards within the ecozones are based on the density and character of the built environment and set design standards for such elements as building setback, height, and façade treatment; parking location; street design; and creation of a public realm. The main characteristics of typical transect zones are listed in Table 3-1 below.

Table 3-1
Main Characteristics of Transect Zones

Transect Zone	Main Characteristics
T1: Rural Preserve	Open space legally protected from development in perpetuity. Includes surface water bodies, protected wetlands, public open space, and conservation easements.
T2: Rural Reserve	Open space not yet protected from development but should be. Includes open space identified by public acquisition and areas identified as transfer of development rights (TDR) sending areas. May include floodplains, steep slopes, and aquifer recharge areas.
T3: Sub-Urban	The most naturalistic, least dense, most residential habitat of a community. Buildings consist of single-family, detached houses. Office and retail buildings are permitted on a restricted basis. Buildings are a maximum of two stories. Open space is rural in character. Highways and rural roads are prohibited.
T4: General Urban	The generalized, but primarily residential, habitat of a community. Buildings consist of single-family, detached houses and rowhouses on small and medium-sized lots. Limited office buildings and lodging are permitted. Retail is confined to designated lots, typically at corners. Buildings are a maximum of three stories. Open space consists of greens and squares.
T5: Urban Center	The denser, fully mixed-use habitat of a community. Buildings consist of rowhouses, flex houses, apartment houses, and offices, about shops. Office and retail buildings and lodging are permitted. Buildings are a maximum of five stories. Open space consists of squares and plazas.
T 6: Urban Core	The densest residential, business, cultural and entertainment concentration of a region. Buildings consist of rowhouses, apartment houses, office buildings, and department stores. Buildings are disposed on a wide range of lot sizes. Surface parking lots are not permitted on frontages. Open space consists of squares and plazas.

Source: Sizemore, Stephen, “Innovations in Local Zoning Regulations; “*Planning and Urban Design Standards*, American Planning Association, John Wiley & Sons, 2006



Source: Duany, Andres, "Introduction to the Special Issue Dedicated to the Transect", Journal of Urban Design, August 2002.

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THE TRANSECT

Figure 3 - 2

Other New Urbanist supportive zoning practices include Transit-Oriented Development overlay zones, and Form-Based Zoning, which seeks to regulate building form rather than land use.

Other zoning innovations include flexible zoning practices such as Overlay Zones, Floating Zones, Planned Unit Development, and Performance Zoning. Performance Zoning, for example, defines zoning districts by the intensity of development allowed in the zone rather than what uses are allowed in the zone. Intensity of use can be defined by measures such as floor area ratio, impervious surface coverage, building height, etc.

CHAPTER FOUR

POPULATION AND HOUSING

CHAPTER FOUR – POPULATION AND HOUSING

Since incorporation in 1906, the City has grown to a population of 19,578 as reported in the 2006 Department of Finance City/County population estimates. In 1980, the population of Dinuba was 9,907 and by 1990 the population had increased to 12,743 (reference Table 4-1). This was an increase of 28.6 percent, which was higher than the growth rates for California and Tulare County for the same time period, but lower than the growth rate for nearby cities of comparable size, Visalia, and Fresno County. From 1990 to 2000, the City's population increased 32.2 percent to 16,844. This growth rate was higher than all other jurisdictions shown in Table 4-1.

Table 4-1
Population Growth, 1980-2000
Dinuba, Reedley, Visalia, Sanger, Tulare County, Fresno County, and California

	1980 Population	1990 Population	Percent Change 1980-1990	2000 Population	Percent Change 1990-2000
Dinuba	9,907	12,743	28.6	16,844	32.2
Reedley	11,071	15,791	42.6	20,756	31.4
Visalia	49,729	75,636	52.1	91,565	21.1
Sanger	12,542	16,839	34.3	18,931	12.4
Tulare County	247,400	313,100	26.6	368,021	17.5
Fresno County	517,400	670,200	29.5	799,407	19.3
California	23,668,862	29,760,021	25.7	33,871,648	13.8

Source: California Department of Finance, Historical Population Data; 2000 U.S. Census

Table 4-2 shows Population Estimates and Projections for Dinuba and Tulare County for the years 2000 through 2030. The Department of Finance estimates there will be 447,315 persons in Tulare County in 2010. Assuming a 3% growth rate for the City, Dinuba should have a population of 22,192 by 2010 and a population of 38,813 by 2030, at which time Tulare County should have a population of 650,466. A 3% growth rate is assumed for Dinuba based on the City's 2.8% historical population growth and the City's expressed desire to not grow faster than 3% per year.

Table 4-2
Population Estimates and Projections, 2000-2030
Dinuba and Tulare County

	2000	2010	2020	2030
Dinuba[1]	16,844	22,192	29,348	38,813
Tulare County[2]	368,021	447,315	543,749	650,466

Source: 2000 U.S. Census, California Department of Finance
[1] 2000 figures from U.S. Census, 2005 figures from Ca DOF estimate, projections assume 3% growth rate
[2] All figures from CA DOF, *Population Projections by Race Ethnicity for California and Its Counties 2000-2050*, May 2004

Table 4-3 shows Dinuba and Tulare County's Total Households, Population in Households, and Average Household Size for 1990 and 2000. In 1990, Dinuba's Average Household Size was 3.31, while the County's Average Household Size was 3.12. Average Household Size in 2000 was 3.72 persons per household for Dinuba and 3.28 persons per household for the County. The rate of increase in the average household size from 1990 to 2000 was 12.4 percent for Dinuba and 5.1 percent for the County, indicating that larger or extended family/households are increasing at a faster rate in Dinuba than the County.

Table 4-3
Average Household Size, 1990-2000
Dinuba and Tulare County

Area	Year	Number of Households[1]	Population in Households	Average Household Size	Rate of Increase in Average Household Size
Dinuba	1990	3,733	12,373	3.31	
Dinuba	2000	4,493	16,730	3.72	12.4 %
Tulare County	1990	97,861	305,814	3.12	
Tulare County	2000	110,385	361,980	3.28	5.1 %

Source: 1990 and 2000 U.S. Census
[1] Occupied housing units

Table 4-4 shows the age distribution in Dinuba from 1990 to 2000. The largest age group in 2000 was the 25 to 34 age group, making up 14.6 percent of the population. The percentage of the population in 2000 under nine years of age was 20.2 percent and the percentage of the population over 65 years of age was 9.1 percent.

Table 4-4
Household Age Distribution, 1990-2000
City of Dinuba

	1990		2000	
	Number	**Percent**	**Number**	**Percent**
Under 5 Years	1,167	9.2%	1,645	9.8%
5 to 9	1,373	10.8%	1,755	10.4%
10 to 14	1,150	9.0%	1,599	9.5%
15 to 19	988	7.8%	1,713	10.2%
20 to 24	1,074	8.4%	1,448	8.6%
25 to 34	2,056	16.1%	2,462	14.6%
35 to 44	1,635	12.8%	2,176	12.9%
45 to 54	925	7.2%	1,632	9.7%
55 to 59	453	3.6%	494	2.9%
60 to 64	400	3.1%	393	2.3%
65 to 74	788	6.2%	761	4.5%
75 to 84	544	4.3%	570	3.4%
85 and Over	190	1.5%	196	1.2%
Total	**12,743**	**100.0%**	**16,844**	**100.0%**

Source: 1990 and 2000 U.S. Census

4.1 Race/Ethnicity Characteristics

Table 4-5 shows the ethnic composition of Dinuba's population. In 2000, the white population totaled 8,816 (52.3 percent), while the "Some Other Race" population totaled 6,398 (40.1 percent). The "Two or More Races" population totaled 890 (5.3 percent), and all other races totaled less than 5 percent combined. Ethnically, 75.1 percent of the population was Hispanic in the year 2000.

Table 4-5
Household Race and Ethnicity, 1990-2000
City of Dinuba

	1990		2000	
	Number	**Percent**	**Number**	**Percent**
White	7,116	55.9%	8,816	52.3%
Black or African American	30	0.2%	60	0.4%
American Indian and Alaskan Native	85	0.7%	215	1.3%
Asian, Native Hawaiian, Pacific Islander	396	3.1%	465	2.7%
Some Other Race	5,116	40.1%	6,398	38.0%
Two or More Races	N/A	N/A	890	5.3%
Total	**12,746**	**100.0%**	**16,844**	**100.0%**
Hispanic or Latino (of any race)	**7,693**	**60.4%**	**12,647**	**75.1%**

Source: 1990 and 2000 U.S. Census

4.2 Household Characteristics

HOUSEHOLD TYPE

The U.S. Census Bureau defines a household as all persons who occupy a housing unit. This may include single persons living alone, families related by blood or marriage, as well as unrelated individuals living together. Persons living in retirement or convalescent homes, dormitories or other group living situations are enumerated separately and are not counted in household population.

Table 4-6 shows household characteristics for the City of Dinuba. As Table 4-6 indicates, Family Households increased in the City of Dinuba from 79.3 percent of total households in 1990 to 82.9 percent in 2000. Non-family Households decreased from 1990 to 2000 by 3.6 percentage points, and Married-Couple Families decreased 0.6 percentage points during the same time period.

Table 4-6
Household Type Characteristics, 1990-2000
City of Dinuba

	1990		**2000**	
	Number	**Percent**	**Number**	**Percent**
Total Households	3,733	100.0	4,493	100.0
Family households (families)	2,961	79.3	3,724	82.9
Married-couple families	2,256	60.4	2,688	59.8
Non-family households	772	20.7	769	17.1
Householder living alone	669	17.9	647	14.4
Householder 65 years and over	441	11.8	378	8.4
Average Household Size	3.31		3.72	
Total Persons in Households	**12,373**		**16,714**	

Source: 1990 and 2000 U.S. Census

HOUSEHOLD SIZE

Trends in household size can indicate the growth pattern of a community. Average household size will increase if there is an influx of larger families or a rise in the local birth rate such as may be attributed to more children in a single family or teenage parents living at home. Household size will decline where the population is aging, or when there is an immigration of single residents outside childbearing age.

As shown in Table 4-6, average household size in Dinuba was 3.31 persons per household in 1990 and increased to 3.72 persons per household in 2000.

Table 4-7 identifies total housing units for Dinuba and Tulare County in 1990 and 2000. The growth rate of housing units in Dinuba was considerably higher than that of the County in the last decade. Between the years 1990 and 2000, a total of 834 housing units (U.S. Census data) were added within the City (an increase of 21.7 percent) while Tulare County's percentage of housing units increased 13.9 percent to total 119,639 in 2000.

Table 4-7
Total Housing Units, 1990-2000
Dinuba and Tulare County

	1990	**2000**	**1990-2000 Increase (%)**
Dinuba	3,836	4,670	21.7
Tulare County	105,013	119,639	13.9

Source: 1990 and 2000 U.S. Census; 1992-1999 City of Dinuba Housing Element

OCCUPIED HOUSING UNITS

Table 4-8 shows Total Occupied Housing Units and Owner-Occupied and Renter-Occupied Housing Units for 1990 and 2000. The 2000 U.S. Census reported that the total number of occupied housing units in the City was 4,493 including 2,726 (60.7 percent) Owner-Occupied Housing Units and 1,767 (39.3 percent) Renter-Occupied Housing Units.

Table 4-8
Occupied Housing Units, 1990-2000
Dinuba and Tulare County

	Total Occupied Housing Units	Owner Occupied Housing Units	Owner Occupied Housing Units (%)	Renter Occupied Housing Units	Renter Occupied Housing Units (%)
2000					
Dinuba	4,493	2,726	60.7	1,767	39.3
Tulare County	110,385	67,913	61.5	42,472	38.5
1990					
Dinuba	3,733	2,213	59.3	1,520	40.7
Tulare County	97,861	58,775	60.1	39,086	39.9

Source: 1990 and 2000 U.S. Census

The number of Owner-Occupied Housing Units increased 1.4 percent from 1990 to 2000, while the number of Renter-Occupied Housing Units decreased 1.4 percent from 1990 to 2000. As Table 4-8 shows, the County's percentage of Owner-Occupied housing units is 0.8 percentage points higher than Dinuba's.

HOUSING UNITS BY TYPE

Referencing Table 4-9, the majority of units built between 1990 and 2000 were single family. However, there were also a significant number of properties with 20 or more units built during the same time period. The percentage of Single Family Housing Units (both attached and detached) increased from 75.5 percent in 1990 to 79.9 percent in 2000, the percentage of properties with 20 or more units increased from 3.5 percent in 1990 to 4.4 percent in 2000, and the percentage of all other unit types has decreased 4.3 percentage points from 21 percent to 15.7 percent from 1990 to 2000.

VACANCY RATES

The vacancy rate in a community indicates the percentage of units that are vacant and for rent/sale at any one time. It is desirable to have a vacancy rate that offers a balance between a buyer and a seller. The state uses five percent as a rule-of-thumb for a desirable total vacancy rate. A total vacancy rate of less than four percent could represent a shortage of housing units. Table 4-10 shows that Dinuba's total vacancy rate in 2000 was 3.8 percent compared to 2.7 percent in 1990. The vacancy rate as of January 1st, 2006, according to the State DOF, was 3.76

percent. These statistics demonstrate a continuing low vacancy rate in the City of Dinuba, which may represent a shortage of housing units.

Table 4-9
Housing Inventory Trends by Unit Type, 1990-2000
City of Dinuba

	1990		2000	
	Units	Percent of Total	Units	Percent of Total
Total Housing Units	3,836	100.0	4,617	100.0
1-Unit Detached	2,721	70.9	3,413	73.9
1-Unit Attached	175	4.6	277	6.0
2 Units	112	2.9	126	2.7
3 or 4 Units	182	4.7	139	3.0
5 to 9 Units	139	3.6	83	1.8
10 to 19 Units	172	4.5	175	3.8
20 or More Units	134	3.5	202	4.4
Mobile Home	160	4.2	192	4.2
Other (Boat, RV, Van, etc.)	41	1.1	10	0.2

Source: 1990 and 2000 U.S. Census

Table 4-10
Vacant Housing Units, 1990-2000
City of Dinuba

	1990		2000	
	Units	Percent of Total	Units	Percent of Total
Total Housing Units	3,836	100.0	4,670	100.0
Occupied Housing Units	3,733	97.3	4,493	96.2
Total Vacant Units	103	2.7	177	3.8
For rent	36	35.0	57	32.2
For sale only	17	16.5	53	29.9
Rented or sold, not occupied	17	16.5	26	14.7
For seasonal, recreational, or occasional use	3	2.9	9	5.1
For migratory workers	3	2.9	0	0.0
Other vacant	27	26.2	32	18.1

Source: 1990 and 2000 U.S. Census

AGE OF HOUSING STOCK

As illustrated in Table 4-11, in 2000, 44.5 percent of Dinuba's housing stock was built prior to 1970. By 2010, nearly 64 percent (2,954 units) of the City's current housing stock will be over 30 years old. This could indicate the potential need for rehabilitation and continued maintenance of these units by the year 2010. The decade with the most new construction was the 1990's with 934 (20.2 percent of the total) units added to the City's housing stock. Only 316 (6.8 percent) homes in Dinuba were built prior to 1939.

Table 4-11
Age of Housing Stock
City of Dinuba

Year Structure Built	Number of Units	Percent of Total
1990 to March 2000	934	20.2
1980 to 1989	729	15.8
1970 to 1979	899	19.5
1960 to 1969	742	16.1
1940 to 1959	997	21.6
1939 or Earlier	316	6.8
Total	4,617	100.0

Source: 2000 U.S. Census

CHAPTER FIVE

ECONOMIC CONDITIONS AND FISCAL CONSIDERATIONS

CHAPTER FIVE - ECONOMIC CONDITIONS AND FISCAL CONSIDERATIONS

This section analyzes the characteristics of the existing social and economic conditions and trends that affect the demand for residential, commercial, and industrial land use in Dinuba. An overview assessment of Dinuba's current demographic and economic condition allows projections to be adjusted based on various factors. These projections are used to forecast demand for dwelling units and acreage for residential, commercial and industrial uses for the 25-year period from 2005 to 2030, showing incremental development at five-year intervals and projecting the quantitative and qualitative implications of each land usage. This discussion is intended to be used as a guide in the development of planning options and general plan policies.

5.1 Demographic and Real Estate Trends and Outlook

POPULATION AND HOUSEHOLD GROWTH

According to the U.S. Census, Dinuba had a population of 16,844 residents in the year 2000 and 4,493 total households. This represents a 45 percent growth from 1990, when the census reported a population of 12,743 residents and 3,733 households in Dinuba. The annual population growth rate between 1990 and 2000 was approximately 3.2 percent. Dinuba's population in 2006, according to the Department of Finance was 19,578, giving it an annual population growth rate from 2000 to 2006 of 1.6 percent per year. The number of households in the city increases by 1.2 percent per year from 4,493 in 2000 to 5,045 in 2006.

Tulare County as a whole is projected to experience faster growth during the current decade than it did during the 1990's. The County grew at an annual rate of 1.8 percent between 1990 and 2000; the State Department of Finance (DOF) projects that the County will grow at an annual rate of 2.1 percent per year during the current decade, and 2.2 percent per year between 2010 and 2020. The projections for surrounding counties for the years 2010-2020 are lower, as shown in Table 5-1. Between 2010 and 2020, Kings County is projected to grow at a 1.8 percent rate annually, and Fresno and Kern Counties at 1.7 percent annually. All the counties shown in Table 5-1 are projected to grow faster than California as a whole in each decade through 2050.

Dinuba's population of 19,352 in 2006 is projected to increase to 33,751 by the year 2025, and 38,813 by the year 2030, as seen in Table 2-2. The population projections are converted to numbers of households by using an average household size for each year in the projection. The average household size in Dinuba is higher than the County average. The 2000 US Census reported that Dinuba's average household size was 3.72 persons per household, up from 3.31 persons per household in 1990. The County's average household size increased from 3.12 persons per household in 1990 to 3.28 persons per household in 2000. According to the *Forecasts for the Central Valley to 2010 and Beyond* by the Central California Futures Institute, the Central Valley will continue to outpace the state and the nation in size of households. By 2010, it is forecast that household size in the region will be 3.15 persons versus 2.96 for California as a whole.

Table 5-1
Total Population

County	2000	2010	Yearly Growth Rate 2000 to 2010	2020	Yearly Growth Rate 2010 to 2020	2030	Yearly Growth Rate 2020 to 2030	2040	Yearly Growth Rate 2030 to 2040	2050	Yearly Growth Rate 2040 to 2050
Tulare	369,355	447,315	2.1%	543,749	2.2%	650,466	2.0%	754,790	1.6%	867,482	1.5%
Fresno	803,401	949,961	1.8%	1,114,654	1.7%	1,297,476	1.6%	1,476,699	1.4%	1,658,281	1.2%
Kern	664,694	808,808	2.2%	950,112	1.7%	1,114,878	1.7%	1,325,648	1.9%	1,549,594	1.7%
Kings	129,823	156,334	2.0%	184,751	1.8%	223,767	2.1%	252,762	1.3%	282,364	1.2%
California	34,043,198	39,246,767	1.5%	43,851,741	1.2%	48,110,671	1.0%	51,538,596	0.7%	54,777,700	0.6%

Source: California Department of Finance

RESIDENTIAL REAL ESTATE GROWTH

According to the 2000 Census, approximately 74 percent of the housing units in Dinuba are single-family detached units. Duplexes comprised approximately 3 percent of the housing stock while the 20+ dwelling unit structures represented approximately 4 percent of the housing stock. Single-family structures and 20+ dwelling unit structures have increased their share of Dinuba's housing stock since 1990 while all other categories have declined (reference Table 4-9).

The California Department of Finance (DOF) estimates that as of January 1, 2006 there are 5,242 housing units in Dinuba, 625 units more than in 2000, representing a 13.5 percent growth rate over that period, or 2.3 percent per year. The DOF estimates that on January 1, 2006 there were 3,942 single family detached units, 280 single family attached units, 813 multiple family units, and 207 mobile homes.

Based on the household projections listed in Table 2-2, plus a five percent vacancy rate, the total number of dwelling units is projected to increase from 4,670 units in 2000 to 10,983 units by 2030, (reference Table 5-2).

Table 5-2
Residential Land Use Demand Projections

	du/ga*	2005	2010	2015	2020	2025	2030
Dwelling Units		5,460	6,280	7,221	8,304	9,550	10,983
Low-Density Residential (LR)	2.0	99	114	131	150	173	199
Medium Low-Density Residential (MLR)	4.5	1,981	2,279	2,620	3,013	3,465	3,985
Medium-Density Residential (MR)	7.5	2,490	2,864	3,293	3,787	4,355	5,009
Medium High-Density Residential (MHR)	15.0	616	709	815	937	1,078	1,240
High-Density Residential (HR)	24.0	274	315	362	416	478	550
Acres							
Low-Density Residential (LR)	2.0	49.5	56.9	65.4	75.2	86.5	99.5
Medium Low-Density Residential (MLR)	4.5	440.3	506.4	582.3	669.6	770.1	885.6
Medium-Density Residential (MR)	7.5	332.0	381.9	439.1	505.0	580.7	667.9
Medium High-Density Residential (MHR)	15.0	41.1	47.3	54.3	62.5	71.9	82.6
High-Density Residential (HR)	24.0	11.4	13.1	15.1	17.3	19.9	22.9

* dwelling units per gross acre
Source: Quad Knopf, Inc., based on 1997 General Plan Land Use designations

The distribution of units by density is projected to remain nearly the same as the current distribution. This assumption is strongly affected by the General Plan policies and Zoning Ordinance adopted by the City.

The total acreage demand for housing units is estimated on the basis of the average density in each residential category. The 1997 Dinuba General Plan contains the residential land use categories, and dwelling units per gross acre, shown in Table 5-2. The acreage of land in each land use category was obtained by analyzing the General Plan land use map. These numbers were used to estimate the number of units in each land use category in 1997. This distribution of units among land use categories was then applied to the projected number of future dwelling units to estimate the number of future dwelling units within each land use category, and the number of acres required for those units. These figures could change as a result of the General Plan Update, but they provide the basis for the preliminary estimates of land demand for residential uses.

ECONOMIC TRENDS

In the year 2005, Tulare County had a total civilian employment of 168,200, an increase of 35,100 since 1995. This represents a 26.4 percent increase for the period or an annual growth rate of approximately 2.6 percent. The state had a 19.1 percent increase from 1995 to 2005, and an annual growth rate of 1.9 percent (reference Table 5-3). The County's performance indicates that the County is slightly outperforming other regions of the state. The substantially lower labor and land costs in the County may explain to a large extent this performance.

The largest employment industry in 2005 in Tulare County was the Total Farm industry at 21.9 percent. The percent change for this industry from 1995 to 2005 was -0.3 percent. The second largest industry in the County in 2005 was Government. This industry accounted for 20.6 percent of all workers in 2005 and increased 27.1 percent from 1995 to 2005. Natural Resources, Mining and Construction increased 80.5 percent from 1995 to 2005 and accounts for 5.1 percent of all employed persons in the County. 98.7 percent of all employment within this category in 2005 was in Construction.

5.2 Employment and Commuting Patterns

An analysis of the countywide economic picture could bring perspective and new opportunities to Dinuba. In order to determine what type of industries could benefit Dinuba, this section gives a more precise picture of the employment and commuting patterns of its residents.

According to the 2000 Census, 8.4 percent of Dinuba's work force had no schooling completed, and 23.5 percent had less than a ninth grade education, compared to 7.0 percent with no schooling completed and 16.1 percent with less than a ninth grade education for the County. Table 5-4 shows that 51.1 percent of Dinuba's 25-year and older population had at least a high school diploma, but only 5.2 percent had an Associate's degree, 4.0 percent had a Bachelor's degree, and 2.8 percent had a graduate or professional degree. Dinuba's percentage of the population with high school and college degrees is lower than the County's.

The types of occupations attained by the majority of Dinuba residents are shown in Table 5-5, which reveals that 18.2 percent of Dinuba's labor force in 2000 worked in management, professional, and related occupations, which was 7.1 percentage point lower than the County. The percentage of sales and office occupations in Dinuba in 2000 was 20.9 percent and 22.7 percent for the County.

Table 5-3
Employment by Industry 1995-2005
Tulare County and California

TULARE COUNTY	1995	2005	% Change 1995 to 2005	Annual Growth Rate	Employment Distribution 2005 (%)
Total Farm	32,000	31,900	-0.3	0.0	21.9
Natural Resources, Mining and Construction	4,100	7,400	80.5	8.0	5.1
Manufacturing	12,200	11,500	-5.7	-0.6	7.9
Trade, Transportation and Utilities	19,900	22,900	15.1	1.5	15.7
Wholesale Trade	3,200	3,800	18.8	1.9	2.6
Retail Trade	13,200	14,100	6.8	0.7	9.7
Financial Activities	3,700	4,500	21.6	2.2	3.1
Professional and Business Services	6,600	9,700	47.0	4.7	6.7
Educational and Health Services	7,400	9,900	33.8	3.4	6.8
Government	23,600	30,000	27.1	2.7	20.6
Total Civilian Employment	133,100	168,200	26.4	2.6	100.0

CALIFORNIA	1995	2005	% Change 1995 to 2005	Annual Growth Rate	Employment Distribution 2005 (%)
Total Farm	373,500	375,800	0.6	0.1	2.5
Natural Resources, Mining and Construction	525,500	925,100	76.0	7.6	6.2
Manufacturing	1,720,800	1,512,700	-12.1	-1.2	10.1
Trade, Transportation and Utilities	2,398,700	2,814,400	17.3	1.7	18.7
Wholesale Trade	556,700	673,100	20.9	2.1	4.5
Retail Trade	1,382,400	1,654,200	19.7	2.0	11.0
Financial Activities	742,300	926,800	24.9	2.5	6.2
Professional and Business Services	1,660,700	2,147,700	29.3	2.9	14.3
Educational and Health Services	1,238,900	1,584,500	27.9	2.8	10.5
Government	2,107,000	2,413,900	14.6	1.5	16.1
Total Employment	14,062,400	16,746,900	19.1	1.9	100.0

Source: Industry Employment and Labor Force, Annual Average, April 2006, California Employment Development Department, Labor Market Information Division

Table 5-4
Educational Attainment, 2000
City of Dinuba & Tulare County

City of Dinuba	Number	Percent
Population 25 Years and Over	8,736	100.0%
No schooling completed	732	8.4%
Less Than 9th Grade	2,055	23.5%
9th to 12th Grade, No Diploma	1,482	17.0%
High School Graduate (includes equivalency)	1,704	19.5%
Some College, No Degree	1,710	19.6%
Associate Degree	456	5.2%
Bachelor's Degree	351	4.0%
Graduate or Professional Degree	246	2.8%
Tulare County	**Number**	**Percent**
Population 25 Years and Over	204,888	100.0%
No schooling completed	14,247	7.0%
Less Than 9th Grade	32,914	16.1%
9th to 12th Grade, No Diploma	31,351	15.3%
High School Graduate (includes equivalency)	47,004	22.9%
Some College, No Degree	42,886	20.9%
Associate Degree	12.926	6.3%
Bachelor's Degree	15,956	7.8%
Graduate or Professional Degree	7,604	3.7%

Source: 2000 U.S. Census

Table 5-5
Employment by Occupation, 2000
City of Dinuba and Tulare County

Dinuba		
Employed civilian population 16 years and over, total	5,859	100.0
Management, professional, and related occupations	1,066	18.2
Service occupations	922	15.7
Sales and office occupations	1,223	20.9
Farming, fishing, and forestry occupations	1,072	18.3
Construction, extraction, and maintenance occupations	507	8.7
Production, transportation, and material moving occupations	1,069	18.2
Tulare County		
Employed civilian population 16 years and over, total	134,094	100.0
Management, professional, and related occupations	33,892	25.3
Service occupations	21,708	16.2
Sales and office occupations	30,447	22.7
Farming, fishing, and forestry occupations	17,643	13.2
Construction, extraction, and maintenance occupations	11,296	8.4
Production, transportation, and material moving occupations	19,108	14.2

Source: 2000 U.S. Census

The top employers in Dinuba listed in Table 5-6 offer many of the agricultural, service, and distribution jobs filled by Dinuba residents.

Table 5-6
Top Employers in Dinuba

Company	Number of Employees	Product
Ruiz Foods Products	2,000	Food
Best Buy, Inc.	425	Distribution
Wal-Mart	425	Retail
Dinuba Public Schools	314	Education
Gianni Packing	200	Food
Family Tree Farms	150	Food
City of Dinuba	125	Government
Odwalla Juice Company	100	Food

Source: Tulare County EDC, City of Dinuba, 2006

Referencing Table 5-7, 69.3 percent of workers 16 years and over in Dinuba drove alone to work, compared to 72.2 percent for the County. Workers in carpools in Dinuba were 22.4 percent compared to 18.7 percent for the County. No one in Dinuba reported taking public transportation to work in the 2000 Census, and only 0.9 percent of people in Tulare County as a whole reported using public transportation to commute to work. The average travel time to work was 23.3 minutes in Dinuba and 21.9 minutes in the County.

Table 5-7
Commute Patterns, 2000
Dinuba and Tulare County

	Dinuba		Tulare County	
	Number	Percent	Number	Percent
Workers 16 Years and Over	5,716	100.0	130,744	100.0
Car, Truck, or Van-Drove Alone	3,961	69.3	94,396	72.2
Car, Truck or Van-Carpooled	1,282	22.4	24,391	18.7
Public Transportation (Including Taxicab)	0	0.0	1,200	0.9
Walked	158	2.8	3,204	2.5
Other Means	198	3.5	2,935	2.2
Worked at Home	117	2.0	4,618	3.5
Mean Travel time to Work (Minutes)	23.3	-	21.9	-

Source: 2000 U.S. Census

5.3 Dinuba City Budget

According to the City of Dinuba Municipal Services Review (MSR) (Tulare County LAFCO, April 2006), the City of Dinuba received in March 2004 a Certificate of Award for their "Excellence in Operational Budgeting 2003-04" from the California Society of Municipal Finance Officers. The MSR states that "the certificate recognizes meritorious achievement in operational budgeting and reflects a highly professional budget document and the underlying budgeting process through which the budget is implemented."

The City's General Fund revenues can be separated into two categories: discretionary and non-discretionary. Discretionary revenues include property tax, sales tax, utility user tax, motor vehicle in-lieu (MVL) tax and other miscellaneous revenues, and can be allocated towards various General Fund expenditures at the discretion of the City. Non-discretionary revenues include various permits, fees, and charges and support the services that generate those revenues. According to the MSR, "one of the keys for the City's ongoing success in meeting the goals of the City Council is the full allocation of discretionary resources in the General Fund to public safety and recreation services" (Tulare County LAFCO, April 2006). The General Fund accounts for the majority of discretionary spending by the City Council. The General Fund is a significant area in the budget where the City has some discretion in terms of allocating expenditures to various services. On the other hand, the General Fund is also the most sensitive to the overall economic health of the community, which affects the strength of the tax base upon which the General Fund depends for its revenue.

The City's budgetary funds can also be separated into enterprise and non-enterprise funds. According to the MSR, "Enterprise Funds are established to account for services financed and operated in a manner similar to a private business. In contrast to the General Fund, the Enterprise Funds operate as separate entities. This means that each enterprise program maintains a separate set of books, and funds are not co-mingled or transferred, except in rare cases and then only by specific Council action. The cost for these services is paid for by service fees. "…three of the five Enterprise Funds fell short of meeting their required operating reserves at the end of FY 2004-05. For these reasons, City staff continues to monitor these funds closely to bring them to within their required operating reserve limits" (Tulare County LAFCO, April 2006). Although three of the enterprise funds were over budget by a total of $320,875 in FY 04-05, two of them were under budget by a total of $816,917.

The largest source of General Fund revenue for the City is sales tax and other taxes (not including property taxes). In 03-04 the City received $3,809,162 in sales and other taxes, compared to a budgeted amount of $3,684,200. The City budgeted $3,918,000 in sales and other taxes revenue for FY 04-05. The actual amount received in 04-05 is not yet available (reference Table 5-8). The next largest source of revenue in the 04-05 Budget is Overhead/Internal Service Charge at $1,549,277, then Current Services at $703,837, then Property Taxes at $466,800.

The largest area of City spending (reference Table 5-9) is from the Proprietary (non-discretionary) Funds at $10,051,822. The next largest area is Other Funds, which include the Redevelopment Agency (RDA), various grants, and debt service, at $9,358,212. About $8 million of this spending is associated with the Redevelopment Agency, which has its own sources of financing (largely through bonded debt). The RDA has $3,126,413 of capital projects in the 04-05 budget, and $4,498,051 of Admin/Debt Service. The next largest area of City spending is the General Fund at $7,328,279, then Capital Funds at $7,015,790.

Table 5-8
Fiscal Years 2003-2004 and 2004-2005
General Fund Summary

CITY OF DINUBA

General Fund
Comparison of REVENUES and APPROPRIATIONS
FY 2003-04 & 2004-05

	ACTUAL 2002-03 (1)	CURRENT BUDGET 2003-04 (2)	ACTUAL 2003-04 (3)	ADOPTED BUDGET 2004-05 (4)	% CHANGE BUDGET 04-05/ BUDGET 03-04 (5)
REVENUES					
Property Taxes	$474,963	$488,200	$473,669	**$466,800**	-4.38%
Sales and other Taxes	3,749,474	3,684,200	3,809,162	**3,918,000**	6.35%
Licenses & Permits	225,078	265,003	257,127	**276,500**	4.34%
Fines & Forfeitures	13,938	14,800	16,096	**23,500**	58.78%
Interest & Use of Money	61,692	48,500	41,027	**47,050**	-2.99%
From Other Government Agencies	15,000	12,000	31,000		-100.00%
Current Services	428,258	421,488	453,031	**703,837**	66.99%
Other Revenue	62,217	7,200	421	**2,100**	-70.83%
Overhead/ Internal Service Charge	1,660,349	1,516,519	1,516,519	**1,549,277**	2.16%
TOTAL REVENUES	$6,690,969	$6,457,910	$6,598,052	**$6,987,064**	8.19%
APPROPRIATIONS					
City Council	$38,907	$71,784	$50,762	**$52,115**	-27.40%
City Attorney	32,671	32,700	32,546	**34,335**	5.00%
City Manager's Office	182,037	183,069	183,053	**199,356**	8.90%
Administrative Services	641,913	697,068	669,899	**835,671**	19.88%
Parks & Community Services	955,330	1,025,002	1,019,201	**1,126,124**	9.87%
Development Services	420,280	428,959	424,966	**468,992**	9.33%
Public Works	431,101	188,487	188,253		-100.00%
Fire Services	749,869	776,025	776,009	**870,102**	12.12%
Police Services	2,405,371	2,656,215	2,650,894	**2,878,589**	8.37%
Community Promotion	58,106	68,000	66,693	**68,600**	0.88%
Downtown Ent. Plaza Promotions	0	73,100	49,457	**105,722**	0%
General Services	566,291	741,200	738,599	**688,673**	-7.09%
Contingency Reserve	4,756	25,000	24,177		-100.00%
TOTAL EXPENDITURES	$6,486,632	$6,966,609	$6,874,509	**$7,328,279**	5.19%
Revenues over Expenditures	204,337	(508,699)	(276,457)	**(341,215)**	3.00%
Beginning Fund Balance	2,383,642	2,587,979	2,587,979	**2,311,522**	-10.68%
ENDING FUND BALANCE	$2,587,979	$2,079,280	$2,311,522	**$1,970,307**	-5.24%

Source: City of Dinuba

Table 5-9
City of Dinuba
Appropriations By Department
Annual Adopted Budget FY 2004-05

Programs	Employee Services	Maint & Oper	Allocated Costs	Capital/ Debt Service/ Transfers	Total
	(1)	(2)	(3)	(4)	(5)
General Fund					
City Council	$0	$52,115	$0	$0	$52,115
City Attorney	0	34,335	0	0	34,335
City Manager	183,958	6,820	8,578	0	199,356
Admin Services	676,184	127,487	32,000	0	835,671
Parks & Comm Servs	741,737	336,960	47,427	0	1,126,124
Development Services	401,744	48,085	19,163	0	468,992
Public Works Services	0	0	0	0	0
Fire	733,105	102,893	34,104	0	870,102
Police	2,365,680	394,782	118,127	0	2,878,589
Comm Promotion	0	68,600	0	0	68,600
Downtown Ent. Plaza Promotion	83,287	20,202	2,233	0	105,722
General Service	0	167,015	30,000	491,658	688,673
Reserve	0	0	0	0	0
Total Gen Fund	$5,185,695	$1,359,294	$291,632	$491,658	$7,328,279
Other Operating Funds					
Assessment Dists	$21,743	$63,344	$8,528	$8,000	$101,615
Streets-Gas Tax	58,309	217,290	35,009	150,000	460,608
Transportation	111,260	52,275	104,804	45,000	313,339
Long Term Debt	0	388,880	0	0	388,880
Sub-Total	$191,312	$721,789	$148,341	$203,000	$1,264,442
Proprietary Funds					
Self Insurance	$131,971	$748,564	$0	$0	$880,535
Health Insurance	0	827,000	0	0	827,000
Billing & Collections	347,764	53,331	18,153	0	419,248
Property & Equipment	142,389	48,812	8,338	0	199,539
Water	322,280	550,355	744,103	326,955	1,943,693
Transit	0	188,746	14,548	45,000	248,294
Sewer - W/W	208,413	457,310	596,761	595,370	1,857,854
Sewer Collect	83,890	40,943	82,179	0	207,012
Disposal	32,567	1,379,187	615,313	7,920	2,034,987
Bowling Center	0	0	0	0	0
Ambulance	832,062	87,250	514,348	0	1,433,660
Sub-Total	$2,101,336	$4,381,498	$2,593,743	$975,245	$10,051,822
Capital Funds					
Water Equipment	0	0	0	$30,000	$30,000
Equipment Replacement	0	0	0	147,765	147,765
Ambulance Replacement	0	0	0	0	0
Sewer Equipment	0	0	0	53,000	53,000
Traffic Safety	0	0	0	48,000	48,000
Cap-Sidewalk	0	0	0	0	0
Cap-Storm Drain	0	0	16,635	56,855	73,490
Park Reserve	0	0	10,502	317,500	328,002
Dbcp Settlement	0	0	0	0	0
Mtbe Settlement	0	0	0	2,000	2,000
Cap-Vocational Center	37,010	349,723	15,796	0	402,529
Cap-Public Works Management	263,713	15,795	9,184	0	288,692
Cap- Capital Project Services	176,940	4,076	8,236	0	189,252
Cap-Transportation	0	0	67,457	332,117	399,574
Cap-Water	0	0	87,325	1,090,984	1,178,309
Cap-Sewer	0	0	140,177	3,735,000	3,875,177
Sub-Total	$477,663	$369,594	$355,312	$5,813,221	$7,015,790

Programs	Employee Services	Maint & Oper	Allocated Costs	Capital/ Debt Service/ Transfers	Total
Other Funds					
Cdbg Housing Grants	$0	$22,500	$0	$0	$22,500
Vehicle Abate Prgm	9,950	3,950	0	0	13,900
C-Set Program	0	0	0	0	0
Cops Grant	44,406	17,601	2,495	35,000	99,502
Law Enforcement	0	0	0	18,100	18,100
Water Debt Service	0	109,421	0	0	109,421
Sewer Debt Service	0	403,220	0	0	403,220
Alta Hospital Assistance	0	0	0	76,860	76,860
Finance Auth/Debt Serv	0	534,455	0	70,000	604,455
Rda Admin/Debt Serv	110,960	2,268,075	2,775	2,116,241	4,498,051
Rda Capital Projects	0	0	65,442	3,060,971	3,126,413
Rda Set Aside	68,475	108,000	67,974	141,341	385,790
Sub-Total	$233,791	$3,467,222	$138,686	$5,518,513	$9,358,212
Grand Total	$8,189,797	$10,299,397	$3,527,714	$13,001,637	$35,018,545
Less Interfund Transfers					$4,379,985
Net Total Budget					$30,638,560

Source: City of Dinuba

CHAPTER SIX

TRANSPORTATION AND CIRCULATION

CHAPTER SIX – TRANSPORTATION AND CIRCULATION

6.1 Purpose

The purpose of the Circulation Element of the General Plan is to provide guidance, by means of goals, policies, and programs for the achievement of an efficient and effective transportation and infrastructure system within and surrounding the City of Dinuba. It is also to provide a transportation plan related with the Land Use Element. The intent of the document is to create a plan that will meet the transportation demands of the future population by improving the circulation system in the Planning Area.

6.2 Existing Roadway System

Vehicular circulation in Dinuba consists of a network of city streets and roads. Streets and roads are classified by functional classification including freeways, arterials, collectors, and local roads. A freeway is defined as a divided highway with full control of access and two or more lanes for the exclusive use of traffic in each direction. Freeways provide for uninterrupted flow of traffic. There are no signalized or stop-controlled at-grade intersections and direct access to and from adjacent property is not permitted. Access to and from a freeway is limited to ramp locations.

Arterials in Dinuba serve as the principal network for traffic flow. They typically have no less than a 100-foot right-of-way and connect areas of major traffic generation within the urban areas and also with important county roads and state highways. Arterials also provide for the distribution and collection of through traffic to and from collector and local streets serving residential, commercial, and industrial land uses.

Collector streets provide for traffic movement between arterial and local streets; traffic movement within and between neighborhoods and major activity centers; and limited direct access to abutting properties. Collector streets in Dinuba typically have a right-of-way that ranges between 68 and 84 feet. They are intended to connect arterials with local streets and activity centers.

Local streets provide for direct access to abutting properties and for localized traffic movements within residential, commercial, and industrial areas. In general, local collectors are local streets designated to connect neighborhoods that are designed to discourage through traffic.

EXISTING STREET SYSTEM

The following describes the existing circulation system for the community.

State Highway and Freeways

There are no State Highways in Dinuba. The closest regional roadway is State Route 201 located approximately 1 mile south of Dinuba. This 2 lane undivided east-west facility provides access to both State Route 99 and State Route 63.

State Route 99 (SR 99) is located 10-12 miles west of Dinuba (approximately 15 minutes). SR 99 provides for regional movement and inter-regional access through the Central Valley from Bakersfield to Sacramento. The highway is also used extensively for travel between southern and northern California.

ARTERIALS

There are 6 arterials designated in the Dinuba Urban Area. Generally, arterial streets are developed with right-of-way widths of 84' – 110' depending on medians and turn pocket requirements. Most of the existing arterials in the community are two lane in each direction and left turn lanes at signalized intersections. Some of these arterials are in rural areas and have not been developed to the City standard.

Nebraska Avenue, Kamm Avenue and El Monte Way are the east-west arterials. El Monte Way is the primary east-west arterial through the center of Dinuba. It is also the main access from SR 99 and to the Dinuba area. El Monte is a 2 to 4 lane undivided facility with a center turn lane. Nebraska Avenue is the most northerly arterial that provides east-west movement for the community. Nebraska is a 2 lane undivided facility. Kamm Avenue to the south provides east-west movement for the industrial, central business district and residential uses in the southern part of Dinuba. Kamm is currently a 2 lane undivided facility.

The north-south arterials in the community are Road 72, Alta and Crawford Avenues. Alta Avenue is a 2 to 4 lane undivided facility, depending on location and serves as the primary north-south access for the community.

Arterial Streets	
North-South	East-West
Road 72	Nebraska Avenue
Alta Avenue	El Monte Way
Crawford Avenue	Kamm Avenue

COLLECTORS

All or portions of the following streets are currently designated as collector streets in the Dinuba area. Collectors are currently constructed on 72' to 84' right-of-ways with one lane in each direction and parking on both sides.

Collector Streets	
North-South	East-West
Euclid Avenue	Saginaw Avenue
Lincoln Avenue	Sierra Way
Road 92	
College Avenue	

Downtown Area	
Tulare Street	L Street
H Street	M Street
K Street	N Street

LOCAL STREETS

The remainder of the streets in the community are classified as local. Local streets are typically 60' right-of-way with two lanes with parking on each side.

GATEWAYS AND SCENIC CORRIDORS

There are no designated gateways or scenic corridors identified in Dinuba.

ROADS OF REGIONAL SIGNIFICANCE

Regional access to the Dinuba area exists through rural type roadways. Roadways that provide regional access to the community of Dinuba include Alta Avenue (Road 80), State Highway 63, El Monte Way (Avenue 416), State Highway 201 and Manning Avenue. Exhibit 2 of the Traffic Study (Appendix B) identifies the Regional Roadway System for the City of Dinuba study area.

Alta Avenue (Road 80) is a primary north-south arterial that provides access from the Goshen and Visalia communities to the south and the Fresno County communities to the north. Alta Avenue runs through the center of Dinuba and provides access to industrial areas in the southwest portion of the community, as well as in the center of town. Alta Avenue is a 2 to 4 lane undivided arterial with turn pockets in some areas.

State Highway 63 is a north south highway east of Dinuba. This highway provides access from the Visalia area to the Cutler/Orosi areas, east of Dinuba. This highway ultimately extends north into the Fresno County community of Orange Cove. State Highway 63 is a 2 lane undivided facility.

Manning Avenue is an east-west arterial located north of the Dinuba area in Fresno County. This east-west facility provides access from SR 99 through the Selma, Reedley areas into the rural areas north of Dinuba. Manning Avenue is a 2 lane undivided facility.

El Monte Way (Avenue 416) is the main east-west arterial that provides regional access to Dinuba from SR 99. El Monte Way extends to the east through Dinuba to the Orosi Area. El Monte is a 2 to 4 lane undivided facility with turn pockets, depending on location.

State Highway 201 is the east-west highway located south of Dinuba. This state highway has access to SR 99 to the west and is a 2 lane undivided facility.

6.3 Existing Traffic Volumes

The following intersections and road segments were identified as critical for the General Plan Update:

STUDY INTERSECTIONS	*STUDY ROADWAY SEGMENTS*
1. El Monte & Road 56	**Nebraska Avenue**
2. El Monte & Road 64	West of Alta Avenue
3. El Monte & Road 70	East of Alta Avenue
4. El Monte & Road 72	**El Monte Way**
5. El Monte & Alta	West of Road 56
6. Sierra & Road 70	West of Road 62
7. Sierra & Alta	West of Road 68
8. Kamm & Road 56	West of Road 72
9. Kamm & Road 64	West of Monte Vista
10. Kamm & Road 70	East of Monte Vista
11. Kamm & Alta	West of Alta Avenue
12. SR 201 & 64	East of Alta Avenue
13. El Monte & Monte Vista	West of Crawford Avenue
14. El Monte & Crawford	East of Crawford Avenue
15. Saginaw & Alta	**Kamm Avenue**
16. Saginaw & Crawford	West of Alta Avenue
17. Nebraska & Alta	East of Alta Avenue
	Alta Avenue
	North of Nebraska Avenue
	North of El Monte Way
	South of El Monte Way
	North of Kamm Avenue
	South of Kamm Avenue
	Crawford Avenue
	North of El Monte Way
	South of El Monte Way

EXISTING TRAFFIC VOLUME

Existing traffic volume were determined by performing manual turning movement counts at the study intersections between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. on weekdays. Existing peak-hour roadway segment volumes are presented in Tables 6-6 and 6-7.

6.4 Level of Service Methodology

ANALYSES

The intersection levels of service were determined using the computer program Synchro (Build 614) for unsignalized and signalized intersections, which is based on the 2000 Highway Capacity Manual procedures for calculating levels of service. The roadway segment levels of service were evaluated utilizing the Florida Department of Transportation Table 4-7, Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas (Non-State Roadways, Major City/County Roadways). The Florida Tables are widely recognized as an industry standard for determining levels of service on roadway segments.

Traffic operations have been quantified through the determination of "Level of Service" (LOS). LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. LOS definitions for different types of intersection controls are outlined in Table 6-1. LOS characteristics for roadways, and volume thresholds for roadway levels of service, are shown in Tables 6-2 and 6-3.

Table 6-1
Levels of Service Characteristics for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Uncongested operations; all queues clear in a single cycle.	10
B	Very light congestion; an occasional phase is fully utilized	10-20
C	Light congestion; occasional queues on approaches	20-35
D	Significant congestion on critical approaches, but intersection is functional. Car required to wait through more than one cycle during short peaks. No long-standing queues formed.	35-55
E	Severe congestion with some long-standing queues on critical approaches. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	55-80
F	Total breakdown, stop-and-go conditions	80

The City of Dinuba Circulation Element has designated LOS “C” as the minimum acceptable LOS standard on City facilities in general. In this report, a peak-hour LOS of “C” is taken as the threshold for acceptable traffic operations at all study intersections and roadways. All intersection turning movement volumes and LOS worksheets are contained in Appendix C.

6.5 Existing Traffic Operations

Existing peak-hour intersection traffic operations were quantified applying existing traffic volumes and existing intersection lane geometrics and control. Tables 6-4 and 6-5 present the existing peak hour intersection levels of service. Where intersections include one-way or two-way stop sign control, the reported level of service is that for the approach with the greatest delay.

As indicated in Tables 6-4 and 6-5, all but two of the study intersections are currently operating at LOS “C” conditions or better during the AM and PM peak hour periods. In addition, the two-way stop-controlled intersections do not satisfy the Caltrans Peak Hour Volume Warrant-11 (Urban Areas).

6.6 Existing Roadway Operations

Existing conditions roadway operations were also determined. Tables 6-6 and 6-7 identify existing conditions roadway LOS. Based on the results presented in Tables 6-6 and 6-7, two a.m. roadway segments and eighteen p.m. roadway segments operate at LOS "D" conditions or better under "Existing" conditions. The balance of study segments operate at LOC "C".

Table 6-2
Level of Service Characteristics for Roadways

Level of Service	Description
A	Primarily free flow operations
B	Reasonably unimpeded operations, ability to maneuver only slightly restricted
C	Stable operations, ability to maneuver and select operating speed affected
D	Unstable flow, speeds and ability to maneuver restricted
E	Significant delays, flow quite unstable
F	Extremely slow speeds

Table 6-3
Volume Thresholds for Roadway Levels of Service

Lanes	Divided	A	B	C	D	E	F
1	Undivided	-	-	≥480	481 – 760	761 – 810	>810
2	Divided	-	-	≥1,120	1,121 – 1,620	1,621 – 1,720	>1,720
3	Divided	-	-	≥1,740	1,741 – 2,450	2,451 – 2,580	>2,580

Table 6-4
Intersection Level of Service (LOS) Summary – Weekday A.M. Peak Hour

	Intersection	Existing	
		Delay (sec)	LOS
1	El Monte & Road 56	36.0	E
2	El Monte & Road 64	14.8	B
3	El Monte & Road 70	14.1	B
4	El Monte & Road 72	8.1	A
5	El Monte & Alta	19.0	B
6	Sierra & Road 70	8.9	A
7	Sierra & Alta	4.7	A
8	Kamm & Road 56	12.3	B
9	Kamm & Road 64	8.9	A
10	Kamm & Road 70	9.1	A
11	Kamm & Alta	6.3	A
12	SR 201 & 64	11.5	B
13	El Monte & Monte Vista	9.1	A
14	El Monte & Crawford	8.2	A
15	Saginaw & Alta	14.3	B
16	Saginaw & Crawford	16.2	C
17	Nebraska & Alta	6.5	A

Table 6-5
Intersection Level of Service (LOS) Summary – Weekday P.M. Peak Hour

	Intersection	Existing Delay (sec)	Existing LOS
1	El Monte & Road 56	49.1	E
2	El Monte & Road 64	35.0	D
3	El Monte & Road 70	18.6	C
4	El Monte & Road 72	9.0	A
5	El Monte & Alta	30.8	C
6	Sierra & Road 70	8.8	A
7	Sierra & Alta	6.5	A
8	Kamm & Road 56	12.8	B
9	Kamm & Road 64	9.2	A
10	Kamm & Road 70	9.2	A
11	Kamm & Alta	8.7	A
12	SR 201 & 64	11.1	B
13	El Monte & Monte Vista	10.4	B
14	El Monte & Crawford	7.8	A
15	Saginaw & Alta	13.3	B
16	Saginaw & Crawford	17.8	C
17	Nebraska & Alta	7.0	A

Table 6-6
Road Segment Level of Service (LOS) Summary – Weekday A.M. Peak Hour

Road Direction and Segment	Existing Lanes	Existing Volume	Existing LOS
Nebraska Avenue WB			
West of Alta Avenue	1	186	C
East of Alta Avenue	1	186	C
Nebraska Avenue EB			
West of Alta Avenue	1	138	C
East of Alta Avenue	1	106	C
El Monte Way WB			
West of Road 56	1	447	C
West of Road 62	1	435	C
West of Road 68	1	435	C
West of Road 72	1	430	C
West of Monte Vista	1	432	C
East of Monte Vista	1	446	C
West of Alta Avenue	2	522	C
East of Alta Avenue	1	444	C
West of Crawford Avenue	2	424	C
East of Crawford Avenue	2	386	C
El Monte Way EB			
West of Road 56	1	346	C
West of Road 62	1	310	C
West of Road 68	1	313	C
West of Road 72	1	374	C

Table 6-6 (continued)
Road Segment Level of Service (LOS) Summary – Weekday A.M. Peak Hour

Road	Existing		
Direction and Segment	Lanes	Volume	LOS
West of Monte Vista	1	360	C
East of Monte Vista	1	456	C
West of Alta Avenue	2	469	C
East of Alta Avenue	1	369	C
West of Crawford Avenue	2	372	C
East of Crawford Avenue	2	216	C
Kamm Avenue WB			
West of Alta Avenue	1	84	C
East of Alta Avenue	1	157	C
Kamm Avenue EB			
West of Alta Avenue	1	94	C
East of Alta Avenue	1	99	C
Alta Avenue NB			
North of Nebraska Avenue	1	279	C
North of El Monte Way	2	414	C
South of El Monte Way	1	358	C
North of Kamm Avenue	1	514	D
South of Kamm Avenue	1	290	C
Alta Avenue SB			
North of Nebraska Avenue	1	273	C
North of El Monte Way	2	514	C
South of El Monte Way	1	429	C
North of Kamm Avenue	1	503	D
South of Kamm Avenue	1	229	C
Crawford Avenue NB			
North of El Monte Way	1	366	C
South of El Monte Way	1	307	C
Crawford Avenue SB			
North of El Monte Way	1	369	C
South of El Monte Way	1	334	C

WB – westbound EB - eastbound

Table 6-7
Road Segment Level of Service (LOS) Summary – Weekday P.M. Peak Hour

Road Direction and Segment	Existing Lanes	Existing Volume	Existing LOS
Nebraska Avenue WB			
West of Alta Avenue	1	134	C
East of Alta Avenue	1	133	C
Nebraska Avenue EB			
West of Alta Avenue	1	158	C
East of Alta Avenue	1	168	C
El Monte Way WB			
West of Road 56	1	414	C
West of Road 62	1	464	C
West of Road 68	1	457	C
West of Road 72	1	494	D
West of Monte Vista	1	505	D
East of Monte Vista	1	472	C
West of Alta Avenue	2	717	C
East of Alta Avenue	1	662	D
West of Crawford Avenue	2	471	C
East of Crawford Avenue	2	520	C
El Monte Way EB			
West of Road 56	1	484	D
West of Road 62	1	563	D
West of Road 68	1	638	D
West of Road 72	1	599	D
West of Monte Vista	1	625	D
East of Monte Vista	1	619	D
West of Alta Avenue	2	763	C
East of Alta Avenue	1	636	D
West of Crawford Avenue	2	647	C
East of Crawford Avenue	2	348	C
Kamm Avenue WB			
West of Alta Avenue	1	92	C
East of Alta Avenue	1	153	C
Kamm Avenue EB			
West of Alta Avenue	1	127	C
East of Alta Avenue	1	182	C
Alta Avenue			
North of Nebraska Avenue	1	384	C
North of El Monte Way	2	672	C
South of El Monte Way	1	522	D
North of Kamm Avenue	1	608	D
South of Kamm Avenue	1	596	D
Alta Avenue SB			
North of Nebraska Avenue	1	371	C
North of El Monte Way	2	608	C
South of El Monte Way	1	515	D
North of Kamm Avenue	1	676	D
South of Kamm Avenue	1	402	C

Table 6-7 (Continued)
Road Segment Level of Service (LOS) Summary – Weekday P.M. Peak Hour

Road Direction and Segment	Existing		
	Lanes	Volume	LOS
Crawford Avenue NB			
North of El Monte Way	1	532	D
South of El Monte Way	1	491	D
Crawford Avenue SB			
North of El Monte Way	1	636	D
South of El Monte Way	1	262	C

6.7 Existing Transit Service

Dinuba's transit needs are served by Dinuba Transit, a private operator which is under contract to the City of Dinuba. Fixed route transit service currently operates Monday through Friday. Service hours are 9 a.m. to 3 p.m. The fare is $.25.

Dinuba Transit also provides Dial-A-Ride services for residents of Dinuba. Dial-A-Ride (door to door) service is available in Dinuba on Monday through Friday between 7:30 a.m. and 4:30 p.m. All rides from home must be scheduled at least four hours in advance. Dinuba Transit Taxi Service offers trips outside City limits.

Regional transit service is provided by Tulare County Area Transit (TCAT). A local circulator provides connection to London, Delft Colony, and Traver on Highway 99. An intercity line connects Dinuba to Sultana, Orosi, Cutler, Yettem and ultimately Visalia. These services operate Monday through Friday.

6.8 Existing Bicycle and Pedestrian Facilities

Currently, the City of Dinuba does not have designated bicycle routes. However, the Tulare County Regional Transportation Plan has bikeway routs designated on El Monte Way and Alta Avenue. Cyclists currently comprise a small percentage of the traveling public in the Dinuba area. Most of the bicycle activity in Dinuba occurs around the schools by school children.

Pedestrian facilities in Dinuba are limited to sidewalks, crosswalks, and pedestrian crossing lights. Pedestrian facilities have been emphasized over the years. Given the size of Dinuba almost any area of the community can be accessed within a 20 minute walk. Pedestrian facilities are located to varying degrees throughout the community. Curb cuts and access ramps are required on new construction in the City.

6.9 Aviation

Operating airports in the Dinuba area are limited. Commercial service is provided to the south at the Visalia Airport and to the north at the Fresno Yosemite International Airport.

6.10 Rail

Dinuba is currently served by the Southern Pacific Railroad. The Atchison Topeka & Santa Fe Railroad runs on the edge of the northeast border of Dinuba. This rail line has recently been abandoned.

The Southern Pacific Railroad runs through the downtown area between M and N Streets. This rail line has historically been an important part of Dinuba's economic and transportation development, but in recent years service has been decreasing and does not appear to be a major mode of transportation. Freight service to the Dinuba area is provided with 4-5 trains per week.

CHAPTER SEVEN

PUBLIC FACILITIES AND SERVICES

CHAPTER SEVEN – PUBLIC FACILITIES AND SERVICES

The information in this section was obtained from the Tulare County LAFCO's *City of Dinuba Municipal Services Review*, the City's 2005 Water Master Plan (Boyle Engineering), and conversations with City Staff.

7.1 Water Supply System

The City provides water service within the Urban Development Boundary of the City of Dinuba (see Figure 1-1). The City gets its water from seven active, deep underground water wells with a total maximum production efficiency of about 11.0 million gallons per day (MGD), which equals approximately 7,600 gallons per minute (GPM). The maximum capacity of the system is 11.0 MGD, the maximum daily demand is 7.3 MGD, and the Daily Average Demand is 4.2 MGD.

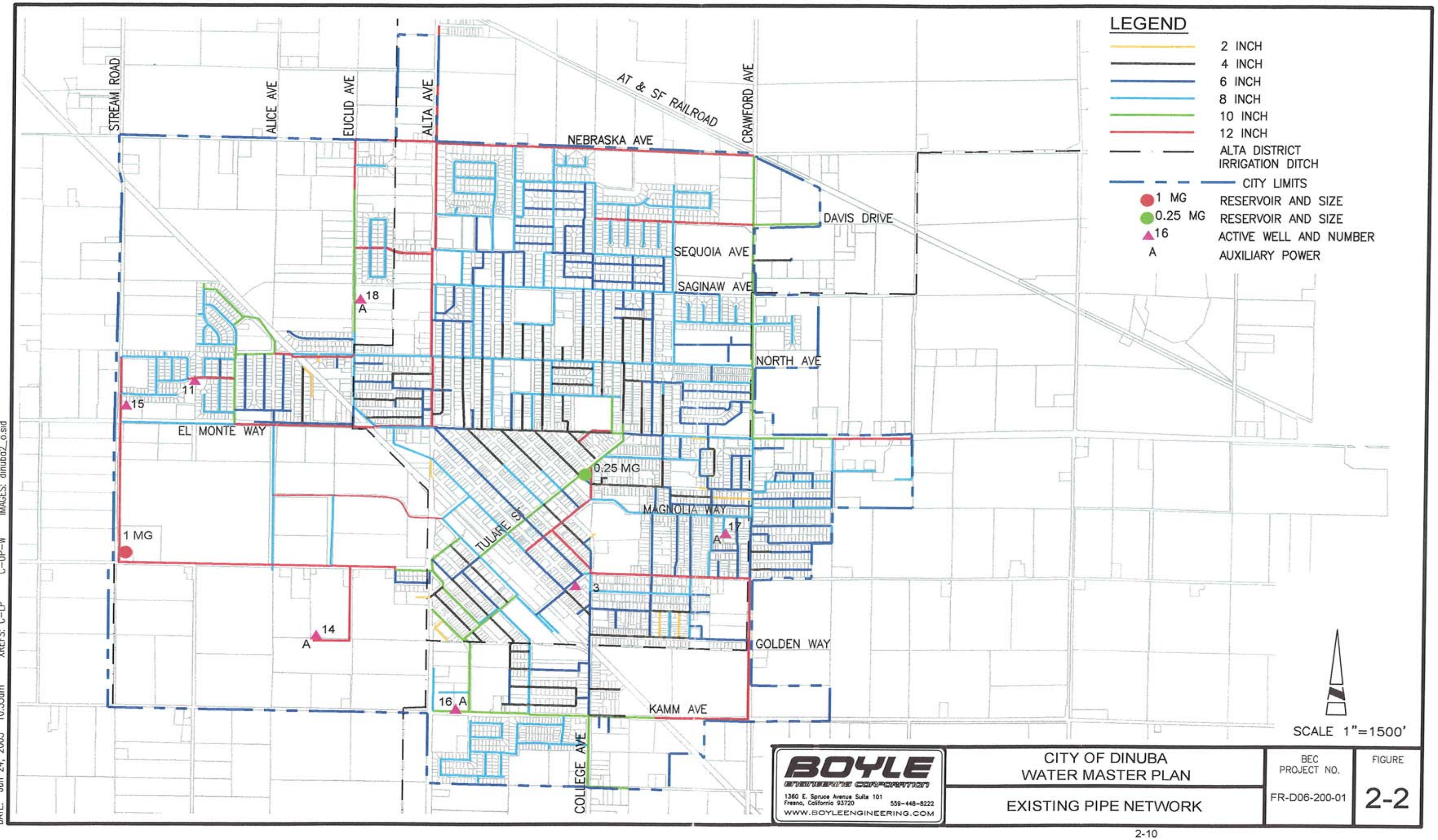
TREATMENT/PUMPING SYSTEM

The City does not have a single treatment/pumping plant. Instead it relies on the pumps at each well site to both pump groundwater to the surface and, along with the City's two water towers, maintain system pressure. The City's water supply is chlorinated at each well site. At Well #14 the water is also run through a Granulated Activated Carbon (GAC) filtration system due to elevated levels of the contaminant DBCP, an agricultural pesticide that is a suspected carcinogen and can, at high enough levels, cause sterility in human males.

DISTRIBUTION SYSTEM

Dinuba's water distribution system consists of "two elevated storage tanks, over 1,300 water valves, over 550 fire hydrants, and approximately 60 miles of water transmission and distribution pipelines. There are approximately 4,575 total connections to the City's water system, including 4,137 residential connections, 434 commercial connections, and 4 industrial connections"(Tulare County LAFCO, April 2006). The two elevated storage tanks have capacities of 225,000 gallons and 1,000,000 gallons respectively. Water is distributed from these storage tanks through steel, asbestos cement (AC), and newer PVC AWWA C900 mains. Pipeline sizes vary between 2 and 12 inches in diameter.

City staff report that the distribution system is adequate to satisfy current demands and provide required Uniform Fire Code fire flows. The City operates the system with a pressure that ranges from 45 to 58 pounds per square inch (psi) (Boyle Engineering, June 2005). Figure 7-1 shows the City's water distribution system.



Quad Knopf

WATER SYSTEM

Figure 7 - 1

DEMAND

The current maximum capacity of the City's water system is 11.0 MGD and the maximum daily demand is 7.3 MGD. Therefore, the City's water system has an excess capacity of about 3.7 MGD, and is operating at 66 percent capacity. Major water users in the City include Ruiz Foods, Odwalla, and Dinuba schools. Large water users are listed in Table 7-1.

Table 7-1
Large Water Users Demands
City of Dinuba Water Master Plan

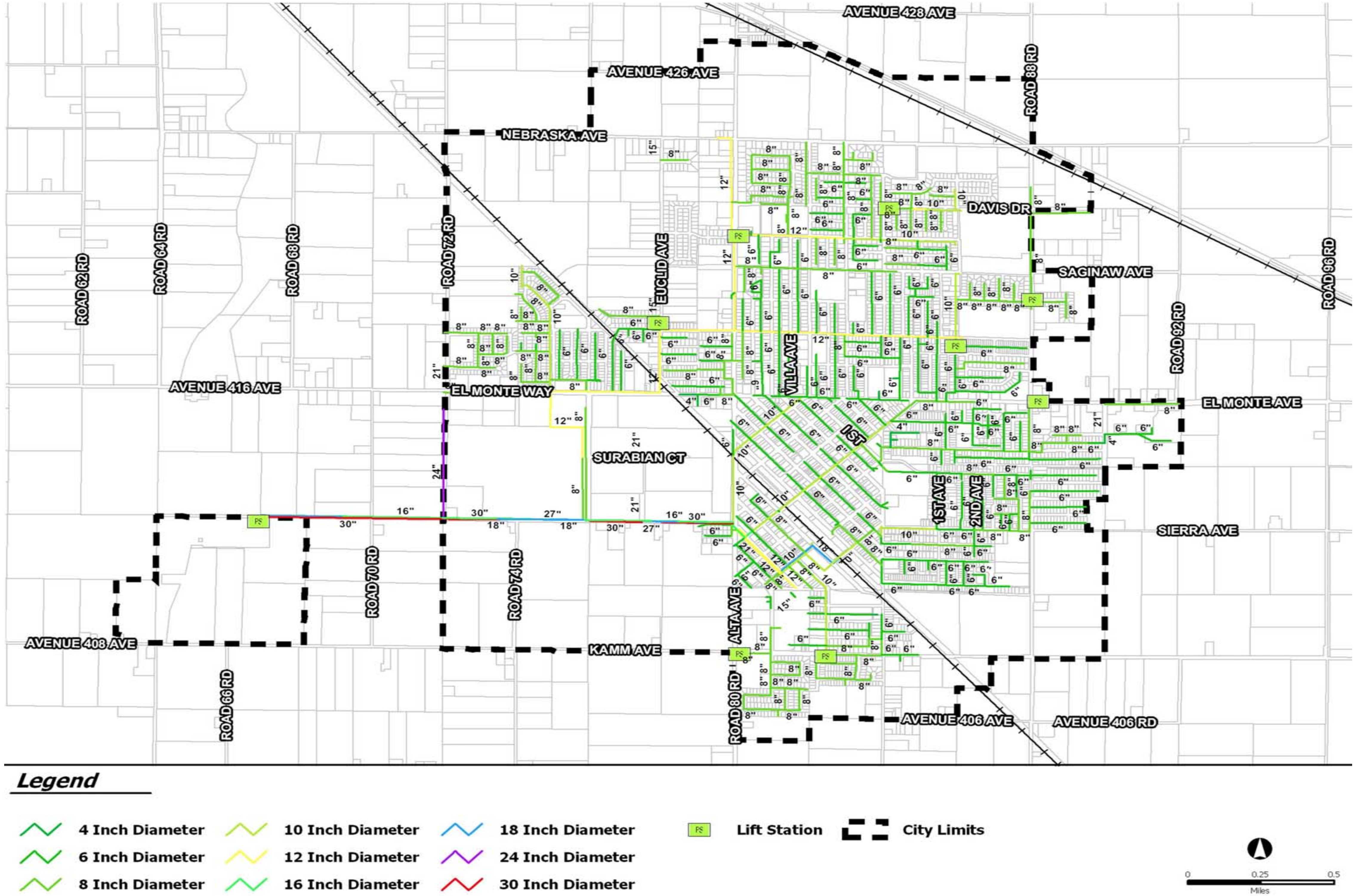
Customer	**Consumption Period**	**Approx. Average Daily Use (gpd)**	**Approx. Average Daily Use (gpm)**
Ruiz Foods (North of Ave 412 and West of Alta Ave.)	July 2001 to June 2002	254,115	176
Odwalla (Crawford Ave and Nebraska Ave)	July 2001 to June 2002	213,795	148
Dinuba Downs Mobile Home Park	July 2001 to June 2002	26,864	19
Dinuba Schools	July 2001 to June 2002	140,015	97
Patterson Dental	July 2001 to June 2002	24,120	17
Best Buy	July 2001 to June 2002	21,954	15
New Covenant Care Center	July 2001 to June 2002	18,764	13
West North Way Apartments	July 2001 to June 2002	17,186	12
Giannini Packing Co.	July 2001 to June 2002	14,888	10
Save Mart	July 2001 to June 2002	14,048	10
Total	**July 2001 to June 2002**	**745,750**	**518**

7.2 Sanitary Sewer System

Information in this section was obtained from the City's website and personal conversations with individuals in the City's Public Works Department (including Utilities Supervisor Monte Sylvester and Kathy Hansen at the Waste Water Reclamation Facility).

COLLECTION SYSTEM

The City of Dinuba provides sewer service within its City limits (see Figure 1-1). The City's sewage collection system includes 30-inch and 27-inch trunk lines under portions of Sierra Way leading to the City's treatment facility, a 24-inch line along Road 72 from Sierra Way almost to El Monte Avenue, and 18-inch lines along Sierra from Road 72 to Alta Avenue and along Uruapan Drive at about Mono Street (see Figure 7-2). Within most of the urban area, the collection system generally consists of 6- to 12-inch diameter lines. The City's collection system drains by gravity and nine sewer lift stations to the treatment plant.



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SEWER SYSTEM

Figure 7 - 2

The major trunk lines that service the City are currently operating near capacity in certain segments according to City staff. The City plans to conduct a study of its existing sewer system in the near future and use the results and recommendations of the study to plan and implement improvements to its sewer system that will accommodate future growth within the City.

TREATMENT PLANT

The existing Dinuba Waste Water Reclamation Facility (WWRF) was constructed in 1921 and is located about two miles west of the developed portion of the City between Sierra Way and Kamm Avenue, but is within City limits.

CAPACITY

The existing plant is designed with a capacity of approximately 3.14 million gallons per day (mgd) average daily maximum month flow (ADMMF). It currently is permitted for a monthly dry weather discharge flow of 3.0 mgd by the California Regional Water Quality Control Board (CRWQCB).

The average biochemical oxygen demand (BOD) loading capacity of the plant is 400 milligrams per liter (mg/l) per day and the average total suspended solids (TSS) loading capacity is 250 mg/l per day.

FACILITIES

The treatment plant, which currently is operated by the City of Dinuba, consists of an Administration Building and laboratory, parshall flume, headworks, primary clarifier, primary digester, distribution structure, trickling filter, filter pump station, aeration basin, secondary clarifier, RAS/WAS pump station, sludge drying beds, and disposal ponds.

Treated effluent from the plant is pumped to a series of disposal ponds on the WWRF site covering approximately 158 acres, and to 30 acres devoted to agriculture. The WWRF's informational brochure (City of Dinuba, 1999) states that "The facilities include pipeline, valves, gates, and boxes to facilitate the selected irrigation schedule. Eventually, most of the water sent for disposal ends up in the largest disposal basin, dubbed "the lake". Here, several types of fish thrive and a handful of Mallard duck families call it home."

FLOWS

According to information obtained from the City's Public Works Department (see Appendix C) flows entering the treatment plant averaged 2.0 MGD between January and December of 2005, ranging from a high of 2.1 MGD in January, March, and May-September, to a low of 1.9 MGD in February. Based on a 2006 population of 19,352 and an average flow at the plant of 2.0 MGD, the citywide sewage generation rate is approximately 103.3 gallons per day per person. The average daily generation rate per residential unit is approximately 384.5 gallons per day (based on an occupancy rate of 3.72 people per unit as reported in the 2000 US Census). In 2005, the average BOD loading was 241.3 milligrams per liter (mg/l) per day, while the average TSS loading was 234.2 mg/l per day.

AVAILABLE CAPACITY

Based on 2005 flows at the plant, 1.0 MGD of the plant's capacity is currently unused. Based on the 2005 average sewage generation rate of 106.0 gallons per day per person, the treatment plant's reserve capacity is sufficient to accommodate approximately 9,434 additional people or 2,536 new single-family residential units (at an occupancy rate of 3.72 persons per unit). At the projected annual population growth rate (see Table 4-2), the treatment plant's reserve capacity will be used up before the year 2020 under average flow conditions. The City is currently proposing, as part of the Dinuba RCR project, to expand the capacity of the WWTF from 3.0 mgd (permitted) to 6.14 mgd. If implemented, this project will create enough capacity at the plant to accommodate projected population growth through the end of the planning period.

SLUDGE DISPOSAL

Sludge from the treatment plant is currently sent to McCarthy Farms' Liberty Compost Facility. According to McCarthy Farms' website, the facility produces "exceptional quality biosolids, greenwaste, and biosolids/compost co-compost through windrow composting from the largest composting facility in the world…" that "meets the Class A pathogen and Vector Attraction Reduction Requirements of the EPA's 40 CFR 503's. The finished compost is then readily marketed in bulk form to agricultural users, landscapers, nurseries, bulk yards, and to the general public throughout California" (McCarthy Family Farms, Inc. website, May 2006).

7.3 Storm Drainage

According to Tulare County LAFCO's City of Dinuba MSR (2006), "The City's storm drain system consists of surface runoff to streets (curbs and gutters) and entry into subsurface pipelines that terminate at pump stations discharging to surface ditches or at small retention basins." Some small areas of development drain to on-site retention ponds. Table 7-2 summarizes the subsystems that make up the City's Storm Drain system.

7.4 EPA "Phase II" Stormwater Drainage Discussion

The EPA established a March 2003 deadline for permit application for the Storm Water National Pollutant Discharge Elimination System (NPDES) Phase II Rule implementation. Municipal Separate Storm Sewer Systems (MS4s) serving a population of less than 100,000 and located in an urbanized area or designated by the permitting authority (the local regional water quality control board) are covered by the Phase II Rule. The City is required to submit its application for a Phase II permit that must include a Storm Water Management Program/Plan addressing the six minimum control measures as follows:

1. Public education and outreach on storm water impacts.
2. Public involvement/participation
3. Illicit discharge detection and elimination
4. Construction site storm water runoff control
5. Post-construction storm water management in new development and redevelopment
6. Pollution prevention/good housekeeping for municipal operations.

Table 7-2
Storm Drain Subsystem Descriptions

Subsystem Name	General Shed Area	Calculated Surcharges (%)	Discharge Channel	Discharge Capacity
Sequoia-Alta	N. of Saginaw Ave. & E. of Alta Ave.	135% - 392%	Alta Irrigation District Ditch	8.3 cfs
Northway	N. of North Way & E. of Alta Ave.	161% - 542%	Alta Irrigation District Ditch	8.3 cfs
Midtown (Sub-area 1)	N. of El Monte Way & E. of Alta Ave.	466% - 683%	Alta Irrigation District Ditch	5.5 cfs
Midtown (Sub-area 2)	S. of El Monte Way & E. of Alta Ave. & N. of Vassar Ave.	398% - 1,059%	Alta Irrigation District Ditch	4.4 cfs
Midtown (Sub-area 3)	S. of El Monte Way & E. of Alta Ave. & N. of Vassar Ave. & N. of E. Whittaker Way & W. of Crawford Ave.	1,270% - 2,189%	Alta Irrigation District Ditch	10.0 cfs
Golden Way	S. of Whittaker Way & W. of Crawford Ave.	Not Available	Alta Irrigation District Ditch	5.0 cfs
Kamm-College	S. of Vassar Ave. & W. of the S.P.R.R. tracks, N. of Kamm Ave. & E. of Alta Ave.	Not Available	Alta Irrigation District Ditch	0.9 cfs
El Monte-Euclid	S. of Bloomingdale Way & W. of Alta Ave. & N. of El Monte Way & E. of Alice Ave.	494% - 687%	Alta Irrigation District Ditch	8.3 cfs

Notes: 1) Reference: City of Dinuba Municipal Services Review (Tulare County LAFCO, April 2006)
2) CFS = CUBIC FEET PER SECOND

The City is responsible for preparing a storm water management program that specifies Best Management Practices (BMPs) for the six minimum control measures. While the regulations do not necessarily require Phase II permits to address industrial discharges, it should be anticipated that the Regional Board will attempt to place this responsibility upon the City.

7.5 Schools

Educational services in Dinuba are provided by the Dinuba Unified School District and serve grades K-12. Dinuba is within commuting distance of several Junior Colleges, Universities, and Institutes. These include:

- Reedley College in Reedley
- College of the Sequoias in Visalia
- Chapman University in Hanford
- San Joaquin Valley College in Visalia
- California State University, Fresno

Other educational opportunities in the City include classes offered at the Dinuba Vocational Center in downtown Dinuba. The Center is owned and operated by the City, and leases space to educators (such as Reedley College) and organizations that provide vocational training (such as the Tulare County Employment Connection). The Center's mission, according to an informational pamphlet obtained from the City in May 2006, is the following:

- Provide businesses with a resource for hiring employees for positions that are difficult to fill.
- Provide individuals with vocational training and specialized skills that are needed in the business markets in Tulare and Fresno Counties.
- Provide businesses with a resource for providing training to existing employees, including training which can lead to promotional opportunities.
- Develop partnerships with employers, schools, and public agencies.

Dinuba Unified School District – The Dinuba Unified School District encompasses the City limits and surrounding areas. The District includes five elementary schools, one sixth-grade academy, one intermediate school, one high school, an alternative high school, an adult school, and an adult independent study program. The School District's office is located at 1327 E. El Monte Way in Dinuba. Dinuba Unified School District student enrollment in the 04-05 school year was 5,773 students (5,687 without continuation schools). This was an increase of 29.4 percent from 1994-05, when the District had 4,460 enrolled students (see Table 7-4). As of 2004-05, Dinuba Unified had 267 teachers, 25 administrators, and 15 persons in pupil services for a total staff of 307. Table 7-3 summarizes student enrollment by school in the 2004-05 school year.

The District's five elementary schools serve grades K-5 and include: Grand View Elementary located at 39746 Road 64, with 358 students; Jefferson Elementary located at 1660 E. Sierra Way, with 645 students; Lincoln Elementary at 850 North Eaton Avenue, with 498 students; Roosevelt Elementary at 1311 North Euclid Avenue, with 569 students; and Wilson Elementary at 305 East Kamm Avenue, with 500 students.

John F. Kennedy Academy is sixth-grade-only and is located at 999 North Crawford Avenue, with 463 students.

Dinuba's only intermediate school, Washington Intermediate, serves grades 7-8 and is located at 1150 North Hayes Avenue. Washington Intermediate's total enrollment in 2004-05 was 858 students. The average class size in 2004-05 was 29.7 students per class and the student to teacher ratio was 22.5.

Dinuba's public high school, Dinuba High, serves grades 9-12 and is located at 340 East Kern Street. Dinuba High's total enrollment in 2004-05 was 1,593. The average class size in 2004-05 was 26.9 students per class and the student to teacher ratio was 20.5.

Sierra Vista continuation High School serves grades 9-12 and is located at 8470 Avenue 406. It had an enrollment in 2004-05 of 86 students. The average class size was 17.6 students per class, and the student to teacher ratio was 16.5.

Table 7-5 shows the existing capacity of schools in the District by grade group and compares that capacity to the number of students the District expects will come into the schools from new development. These figures show that out of a total capacity of 5,835 students, the District already has 5,746 and is thus at 98.5 percent capacity.

Table 7-3
Dinuba Unified School District, 2004-05
School Enrollment

School	Grades	Enrollment
Grand View Elementary School	K-5	358
Jefferson Elementary	K-5	645
Lincoln Elementary	K-5	498
Roosevelt Elementary	K-5	569
Wilson Elementary	K-5	500
John F. Kennedy Academy	6	463
Washington Intermediate	7-8	858
Dinuba High	9-12	1,593
Sierra Vista High (continuation)	9-12	86

Source: Education Data Partnership. Dinuba Unified School District.

Table 7-4 shows the school district's enrollment from 1994-95 to 2004-05. Dinuba Elementary and Dinuba Joint Union High were separate districts before 1998-99. Totals for the separate districts and for both together are listed for purposes of comparison. The District's student enrollment increased 29.4 percent (1,313 students) from 1994-95 to 2004-05.

Table 7-4
School District Enrollment
1994-95 to 2004-05

	No. of Students		
Academic Year	**Dinuba Unified [1]**	**Dinuba Elementary**	**Dinuba Joint Union High**
2004-05	5,773		
2003-04	5,542		
2002-03	5,310		
2001-02	5,200		
2000-01	5,180		
1999-00	5,057		
1998-99	4,978		
1997-98	4,913	3,380	1,533
1996-97	4,756	3,300	1,456
1995-96	4,582	3,190	1,392
1994-95	4,460	3,128	1,332

Source: Education Data Partnership
[1] The Dinuba Elementary District and Dinuba Joint Union High School Districts merged to form the Dinuba Unified School District beginning with the 1998-99 school year.

Table 7-5
Existing Capacity of Dinuba Schools

Grade Group	2005/06 Capacity	2005/06 Enrollment	Existing Capacity Available for Students from Future Development	Unhoused Students From Future Development
K-6	2,955	2,951	4	631
7-8	852	880	0	175
9-12	2,028	1,915	113	144
Total	**5,835**	**5,746**	**117**	**950**

Source: Dinuba Unified School District, 2006 School Facility Needs Analysis and Justification Study, March 2006

7.6 Police and Fire

POLICE PROTECTION

All information in this section comes from the City of Dinuba's website and conversations with Police Department personnel. Law enforcement services within the City of Dinuba are provided by the City of Dinuba Police Department headquartered at 680 Alta Avenue. Areas outside the City limits are served by the Tulare County Sheriff's Department. The City of Dinuba Police Department consists of 44 personnel: 31 sworn officers and 13 non-sworn support staff with money dedicated in the budget to hire five more sworn officers in the near future.

The City is patrolled on a 24-hour basis. Response time goals within the City are 1 to 2.5 minutes for emergency calls and 3 to 5 minutes for non-emergency calls. The patrol force works out of the 680 South Alta Avenue facility. Beginning in July, 2006 patrol officers will be assigned to geographical areas (beats) as needed, instead of working on a city-wide basis as is currently the case.

One measure of law enforcement protection services is a desired police officer/population ratio, generally stated in terms of the number of police officers per 1,000 population. Such measures should not be strictly employed as standards or guidelines, because acceptable policing levels also depend on changing community characteristics and needs, the specific types of staffing requirements (e.g., the need for sworn vs. non-sworn personnel), economic conditions, technological advances, and other factors.

Based on a total of 31 sworn officers and the current (2006) city population of 19,578 persons, Dinuba's current patrol officer/population ration is 1.58:1,000. Conversations with the Assistant Police Chief indicate that the Dinuba Police Department has adequate manpower and facilities to serve the City's current population, and that the City has budgeted money to hire five more sworn officers in the near future to accommodate anticipated population growth in the City.

Dinuba has a holding cell at Police Headquarters at 680 South Alta Avenue. All arrested persons are transported to the Tulare County jail in Visalia, which is approximately 30 minutes away. Arrestees are then tried in Dinuba Superior Court in Dinuba.

The Police Department also offers the following special programs (City of Dinuba website, May 2006):

Neighborhood Watch Program

This program is part of the overall Community Oriented Policing Philosophy that is employed by the Department and City Government in Dinuba. The Program is a relationship building activity used by the front line officers and supervisors to provide another opportunity for communications with the community. It has been very effective in identifying concerns, problems and approaches in dealing with the issues.

Explorer Post #325

The Police Explorer Post is an important part of the Department. The program accepts youth from junior high age through age 21. The recruits must complete an Explorer Academy that is taught by officers and senior explorers. The explorers are responsible for many details such as crowd control, parking details at special events, parade details, ride-a-longs and dispatch. They are trained in the police career. The program teaches responsibility, discipline and teamwork in a fun group environment that includes police officers, community members and other police volunteers. It also provides the opportunity to demonstrate the importance of volunteering as a member of a community.

Downtown Substation

The Police Department Maintains a downtown office substation in the business district. Out of this office, the Department deploys four parking attendants and Community Service Officers, who are supervised by the Support Services Officer. This substation provides parking enforcement and security for the downtown business district.

Traffic Enforcement

The Police Department offers special assignments for Officers in the traffic unit, which consists of motorcycle patrol and DUI enforcement. The Police Department has two BMW motorcycles assigned to the morning and early evening shifts. The unit also has a fully self-contained DUI enforcement command trailer with a dispatch center which was provided by a grant through the Office of Traffic Safety, State of California.

House Watch

The Vacation House Watch is a service that is provided by the Department and has been successful in the early detection of problems as well as prevention. The resident can call the Police Department to request this and fill out a form that describes the areas and residents. The checks are completed by the Citizen Volunteer Patrol, who attempt to make several checks of the vacant house. Should a problem be noticed, officers are then dispatched to investigate the problem further.

Citizen Volunteer Patrol

Citizen Volunteer Patrol is a group of civic minded people who have expressed an interest in working toward a better community. The volunteers are trained in police operations during an eight session Volunteer Academy. Once they have completed the training, the volunteers are released for ride-a-longs, patrol, funeral escorts, district attorney paperwork delivery and many other details that free up investigators and patrol officers to improve direct services to the Community. The Volunteers are also assigned details at special events of the Community. These include parade details, park security patrol and funeral escort.

Bike Patrols

The Dinuba Police Department offers bicycle patrol as a service to the Community. The bike officers are deployed at special events such as community festivals, parades and for special operations. They may be deployed as a non-traditional approach to some enforcement issues.

Funeral Escorts

This service is available to help ensure a safe gathering for well wishers. It consists of establishing traffic control for the movement from the service to the cemetery. This is usually completed by the Citizen Volunteer Program, but at times, officers are deployed to assist also.

Records and Complaints

Incident Complaints

Reports of incidents are logged in, and officers are dispatched to investigate the incident. A report of the incident is completed by the officers when the investigation requires such a record. All calls for service are responded to by the Department in some manner. The Department is a service driven organization with a goal of providing service to the community.

Parking Complaints

Complaints regarding parking violations are accepted and welcomed. The officers are sent to check each complaint, and violators are cited appropriately based on the complaint and the nature of violation.

Vehicle Storage/Abatement

Vehicles that are abandoned or in violation are stored at certain designated storage facilities. The Police and City Code Enforcement Officer work together to clear nuisance vehicles from the street or property. Violator vehicles are stored in accordance with the City codes and Vehicle Codes. These require a Police Release Form to be released. There is a $78.00 Administrative Fee for this Release Form.

Animal Control

There are two part time Animal Control Officers who are assigned staggered days so that there is service 7 days a week, except holidays. The program includes such services as disposal of dead animals, code enforcement, animal bite investigations, licensing for dogs, animal noise/nuisance complaint reporting/investigations and vicious animal investigation reports etc.

Fingerprinting Service

Fingerprinting for job applications, background checks, immigration or any other reason, is available for a fee of $12.00 per card and an additional $44.00 for Live Scan. It is done on Tuesdays from 9 A.M. to 12 P.M.

Sex Offenders

The public information for Sex Offenders is available through the Tulare County Sheriff's Office. Employees of Dinuba Police Department are available to assist with questions in what information is available and how to obtain it through the Sheriff's Office.

Tips Hotline

The Police Department has a hotline for information regarding crimes. It is available 24 hours a day and can be used anonymously. It is answered by a recording machine which is maintained by investigators. A person leaving information can choose to be identified or can choose to just leave the information. The hotline number is: **595-TIPS** *(595-8477)*.

Emergency Contacts

The Police Department is active in making emergency contacts of residents by out of town relatives who have been unable to contact them. This is a service that is provided in accordance with the community service philosophy practiced by the Department.

The City also has a Citizens Police Advisory Commission, whose job is to promote the philosophy of Community Based Policing by providing the public with a body that has the power to receive, and have within its discretion to investigate through an independent investigator, allegations of police misconduct, with emphasis on excessive force, false arrest, discrimination complaints, sexual harassment and failure to implement policy. The Commission also examines Police Department policies and procedures for consistency with community values and Community Based Policing philosophy.

Crime Statistics are correlated and reviewed regularly for trends. The Department publishes its statistics yearly. Special statistical data is available upon written request. Information that is deemed to be public information in these special requests can be provided. There may be an Administrative Fee attached for the cost of honoring such request.

Table 7-6
2001 - 2004 Crime Statistics: Part I: Crimes

Category	2001	2002	2003	2004
Homicide	1	1	0	1
Rape	8	11	8	7
Robbery	17	22	15	21
Assault	426	451	440	493
Burglary	419	307	234	228
Theft	501	512	706	707
Vehicle Theft	85	117	136	176
Total	**1457**	**1421**	**1539**	**1633**

Part II: Arrest Information

Category	2001	2002	2003	2004
Adult Felony	290	326	338	262
Juvenile Felony	32	48	40	62
Adult Misd.	611	557	558	375
Juvenile Misd.	101	88	74	98
Total Arrests	**1034**	**1019**	**1010**	**797**

Source: City of Dinuba website, May 2006.

FIRE PROTECTION

All information in this section was obtained from the City of Dinuba website, conversations with Fire Department personnel, and the City of Dinuba MSR (Tulare County LAFCO, April 2006).

The City of Dinuba Fire Department provides fire protection services to a 3.5 square-mile area that includes all areas within City limits. Also, through a mutual aid agreement with the Tulare County Fire Department/California Division of Forestry (County-CDF), the Dinuba Fire Department responds automatically (i.e., without County-CDF request) to calls for service immediately outside City limits. In addition, the two fire departments (City and County-CDF), along with the fire departments of the cities of Kings and Tulare Counties, maintain mutual aid agreements whereby secondary fire service response would be provided upon request.

The Dinuba Fire Department consists of one fire station staffed 24 hours a day, located downtown at 496 East Tulare Street. The Department consists of 41 uniformed and non-uniformed personnel, three ALS units (paramedic ambulances), three 1,250 gallon-per-minute fire engines, one snorkel aerial truck, one confined space van, and four staff vehicles. The Department's personnel are distributed in the following positions:

- 1 Fire Chief
- 1 Fire Marshall/Assistant Fire Chief
- 1 Battalion Chief
- 3 Fire Captains
- 1 Administrative Assistant
- 1 Staff Assistant
- 13 Paid Engineers/Paramedics
- 20 Paid Call Firefighters

In 2000 the Department had 16 full time staff and one half-time employee. It responded to 966 fire calls and 2,270 ambulance calls. The Dinuba Fire Department's ambulance service responds to calls in a 400-square-mile area of northern Tulare County (including Dinuba) by contract with the Tulare County Emergency Medical Services (EMS) Department. Ambulance calls include medical emergency fire calls. In 2000, 660 of the 966 fire calls were for medical emergencies, and 306 were fire related.

In 2005, the Department responded to 1,408 fire calls and 2,688 ambulance calls. Of the fire calls, 1,075 were for medical emergencies, and 333 were fire related. Table 7-7 summarizes these statistics, and Table 7-8 includes a further breakdown of the numbers by type of call for the 04-05 reporting year.

Table 7-7
Numbers of Calls by Response

Calls for Service	2000	2005
Fire Engine Response	966	1,408
Medical Emergency	660	1,075
Fire Related	306	333
Ambulance[1]	2,270	2,688

[1] Ambulance calls include medical emergency fire engine response calls because an ambulance responds with a fire engine to every medical emergency.
Source: City of Dinuba Fire Department

Table 7-8
Numbers of Calls by Incident Type, 07/01/04-06/30/05

		Count	Percent of Subtotal	Percent of Total Fires
Fires				
Structure Fires				
Fire, Other		9	25.0%	4.8%
Building Fire		23	63.9%	12.2%
Fires in Structure Other Than Building		1	2.8%	0.5%
Cooking fire, confined to container		2	5.6%	1.1%
Fire in mobile home used as fixed residence		1	2.8%	0.5%
	Subtotal	**36**	**100.0%**	**19.0%**
Vehicle Fires				
Mobile Property fire		6	6.2%	3.2%
Passenger vehicle fire		88	90.7%	46.6%
Road freight or transport vehicle fire		1	1.0%	0.5%
Rail vehicle fire		2	2.1%	1.1%
	Subtotal	**97**	**100.0%**	**51.3%**
Outdoor Fires				
Forest, woods, or wildland fire		1	1.8%	0.5%
Brush or brush-and-grass mixture fire		2	3.6%	1.1%
Grass fire		20	35.7%	10.6%
Outside with rubbish fire, other		7	12.5%	3.7%
Outside rubbish, trash or waste fire		8	14.3%	4.2%
Dumpster or other outside trash receptacle fire		14	25.0%	7.4%
Special outside fire, other		4	7.1%	2.1%
	Subtotal	**56**	**100.0%**	**29.6%**
Total Fires		**189**		

		Count	Percent of Subtotal	Percent of Total Ambulance Calls
Ambulance Calls				
Rescue & Emergency Medical Service Incident				
Rescue, EMS incident, other		14	0.6%	0.5%
Medical assist, assist EMS crew		5	0.2%	0.2%
Medically necessary transfer		121	4.8%	4.5%
EMS call, excluding vehicle accident with		2,093	83.4%	77.9%
EMS call, turned over to other agency		43	1.7%	1.6%
Motor vehicle accident with injuries		163	6.5%	6.1%
Motor vehicle/pedestrian accident (MV/ped)		36	1.4%	1.3%
Motor vehicle accident with no injuries		34	1.4%	1.3%
	Subtotal	**2,509**	**100.0%**	**93.4%**
Good Intent Call				
Dispatched & cancelled en route		178	100.0%	6.6%
Total Ambulance Calls		**2,687**		

Source: City of Dinuba Fire Department

According to the City's website, the City "contracts with the following agencies to provide the community with the best possible emergency care:

- Tulare County Mutual Aid Agreement which provides mutual instant aid within a six mile radius of the City.
- City of Visalia Hazardous Response Team, Standardized Emergency Management System (SEMS) which coordinates federal, state, county and city agencies to respond to disasters in which the city would be incapable of managing alone.
- The Fire Prevention Inspection Program enforces state and local codes and ordinances by inspection of commercial, industrial, and public buildings.
- Valley Industrial to comply with the Federal OSHA 2 In/2 Out Regulations to ensure that the department is in compliance with the law.
- Department Confined Space Rescue Team.

The City's current ISO rating (fire service rating) is 4. The ISO (Insurance Services Office) scale goes from 1 (best) to 10 (worst). A higher ISO rating results in higher insurance premiums. The rating is based on an evaluation of a department's fire fighting capability (50% of the score), the water system it uses to fight fires (40% of the score), and the nature of its dispatch area (10% of the score). According to the City of Dinuba MSR, "The Fire Department also offers an ambulance membership program called FireMed. For an annual membership fee of $55.00, subscribers can use the ambulance service with no out of pocket expense, (i.e. insurance payments will be accepted as payment in full). The FireMed Service is staffed 24 hours a day with personnel available to respond on an ALS equipped ambulance to provide advance life support emergency medical care within the community and surrounding area" (Tulare County LAFCO, April 2006).

Other police and fire protection services, both current and planned, are funded by Measure F, which was passed by the City's voters in November 2005. Measure F raised Dinuba's local sales tax by ¾ cent to raise revenue for police and fire services. Activities and projects that are or will be funded by Measure F include:

- Hire, train and retain police officers/firefighters/paramedics/9-1-1 dispatchers
- Expand neighborhood/school policing and crime prevention efforts including more after-school, anti-gang and anti-drug programs
- Upgrade the 9-1-1 Emergency Response Center
- Purchase fire engines/ambulances
- Construct a new fire station on the west side of town near the intersection of Road 72 and Sierra Way. The new facility would include a 4,000 square foot dormitory, and the City's Equipment Operations Center (EOC) would be relocated to this site.

- Construct the Northern Tulare County Fire Training Facility, which would be used for all aspects of safety training by multiple agencies including Police, Fire and Public Works with training props for each. This facility would be located at the same site as the new fire station.

- Purchase two new fire engines and one new ambulance, and hire an additional firefighter paramedic.

Further information on these projects can be found in the Dinuba MSR and the City's Fire Master Plan. City Council goals for fiscal years 2005-2007 include completing the fire station remodel project and developing a fire department equipment replacement project.

7.7 Other Public Facilities and Services

ELECTRICITY

The Pacific Gas and Electric Company (PG&E) is the provider of electricity for the City of Dinuba. Existing trunk and transmission facilities are adequate to meet present and projected demand in the community.

NATURAL GAS

Dinuba is supplied with natural gas by PG&E. Existing service is good, and company officials indicate no current unforeseeable peak load or pressure deficiencies.

TELEPHONE

Traditional phone service in and around Dinuba is provided by SBC/AT&T.

CELLULAR SERVICE

Cellular telephone service is offered to residents of the City of Dinuba by a number of companies including Verizon, Cingular, Sprint, etc. Calls are placed from cellular phones, which are simply wireless mobile or portable phones that have radio-frequency (RF) transmitters and receivers. The RF signals are received by "cell" sites (hence the name "cellular"), which are RF receiver/transmitter stations situated on towers that are strategically placed to be able to transmit over or around topographic barriers. Signals from cellular phones are transmitted from cell to cell until they reach a mobile telephone switching office (MTSO) in the local calling area that the caller wishes to reach. Here, the call is linked by MTSO from the cellular network to the local telephone office.

From a planning viewpoint, the City must take care in approving cell sites. Planning considerations include flight patterns, visual/aesthetic effects, and possible effects on wildlife. As opposed to other utilities, however, there are no pipelines or cables other than electrical service to the site, which can represent a greater spectrum of potential effects. Also, a specific band of radio frequencies is assigned to each provider. They can be reused to serve a large number of people, since the signals are not confined to cables to which individual users must be linked. Unless a sufficient grid of towers is approved within a county, cellular phone coverage will be spotty or non-existent.

7.8 Dinuba Public Library

Library service is provided to Dinuba by the Dinuba branch of the Tulare County Library located at 150 South I Street near Dinuba High School. The library is open from 10-6 Monday and Wednesday, 12-8 Tuesday and Thursday, and 10-5 on Friday. It is closed on Saturday and Sunday.

7.9 Public Transportation

Public transit in Dinuba is available through Dinuba Transit and Dinuba Transit Taxi Service. Dinuba Transit offers fixed route bus service Monday – Friday from 9 a.m. to 3 p.m. and costs 25 cents per ride. Dinuba Transit also offers door-to-door Dial-A-Ride service. For $1.50 riders are picked up at their home and driven anywhere within city limits. This service is offered Monday – Friday from 7:30 a.m. to 4:30 p.m. Reservations are required and must be made at least four hours ahead of time (Dinuba Transit, November 2005).

Taxi service for trips outside the City is available through Dinuba Transit Taxi Service. Dinuba Taxi will pick riders up at their home and drive them to nearby areas for a flat rate depending on the destination. The approximate outer bounds of its service area are Fresno, Lemoore, Tulare, and Porterville. A ride to Fresno would cost $47.00 and a ride to Visalia would cost $27.50.

7.10 Other Public Facilities

The Dinuba Post Office (93618) is located at 222 South K Street in downtown Dinuba.

7.11 Solid Waste and Hazardous Waste Collection, Disposal, and Management

The City of Dinuba, through a private contractor, provides weekly curbside solid waste collection services to all households, businesses, and industries within City limits. Solid waste is taken to the Visalia Landfill, which is operated by the County and is located on Road 80 (which becomes Alta Avenue in Dinuba and Plaza Drive in Visalia), about 10 miles south of Dinuba and four miles north of Visalia. The County has plans to expand this landfill in nine phases when demand warrants. Phase 1 has already been implemented. The current capacity of the landfill is 16,145,591 cubic yards (Jeff Monaco, Tulare County Resources Management Agency, May 2006) and the estimated total capacity after all nine phases of expansion is 16,521,501 cubic yards (Tulare County LAFCO, April 2006). According to Tulare County LAFCO's April 2006 Municipal Services review, the County's Sold Waste Division has indicated that "… Visalia Landfill has sufficient capacity to accommodate solid waste disposal demands through year 2040."

The City also collects recyclables along with waste in a split container. Recyclables are taken to the Tulare County Recycling facility in Visalia where they are processed and then sold to recycled materials users. Dinuba is a member of a Joint Power Authority (JPA) made up of

Tulare County's eight cities that are collectively required by the State under Assembly Bill 939 to have reduced landfill tonnage by 25% by the end of 1995 and 50% by the end of 2000. The eight cities in the JPA are currently at 50% diversion (Tulare County LAFCO, April 2006).

Yard waste in Dinuba is collected in a separate container by the City's private waste collection contractor and is taken to the contractor's facility, where it is processed into fertilizer.

The City's website offers information on the City's waste disposal and recycling services and customer service contact information. The City also holds a community clean-up day in April in connection with Earth Day.

CHAPTER EIGHT

RECREATION, ARCHEOLOGICAL AND HISTORICAL RESOURCES

CHAPTER EIGHT – RECREATION, ARCHEOLOGICAL AND HISTORICAL RESOURCES

8.1 Existing Park and Recreation Facilities and Programs

The City of Dinuba currently has twelve designated park sites totaling approximately 67 acres. Dinuba's parks include neighborhood parks, community parks, a community center, a plaza, and a linear park. These facilities are listed below:

Alice Park is a 0.73 acre neighborhood park on Alice Avenue with a playground, a picnic pavilion with electricity, basketball courts, picnic tables, and porta-potties (all the other parks have restrooms, except Entertainment Plaza, which also has porta-potties).

Felix Delgado Park is a 6 acre neighborhood and community park at Green and Vassar Avenues. It includes a softball diamond, picnic shelter, concession stand, restrooms, and batting cages.

Gregory Park is an 0.80 acre neighborhood park on College Avenue with a picnic area, playground equipment, and a restroom.

K/C Vista Park is an 18.18 acre neighborhood and community park at Kamm and Crawford Avenues with soccer fields, baseball fields, parking, a picnic pavilion, and playground equipment.

Rose Ann Vuich Park is an 8.04 acre community park at East El Monte and McKinley Avenues. It includes a Dinuba Parks Division Office, a covered bandstand, a group picnic shelter and picnic areas, restrooms, two horseshoe pits, and swings. Vuich Park is the site of many important community events including free entertainment on the bandstand from March through October, and the annual Christmas tree lighting on the first Saturday in December.

Roosevelt Park is a 4.2 acre neighborhood and community park at Elizabeth Way and Snyder Avenue that offers two lighted baseball fields, a tee ball field, two lighted racquetball courts, a playground, a batting cage, a lighted basketball court, concession and announcer building, and parking.

Entertainment Plaza is an approximately 1 acre community event park next to the multiplex theater at M and Ventura Streets downtown. It includes a skate park, gazebo, lawn area, and interactive, ground-level fountain.

Luis Ruiz Park is a 5 acre community park on Surabian Drive west of Alta Avenue and north of Ruiz Foods. It includes lawn area, a shelter, and picnic tables.

Pamela Lane Ponding Basin is a 2 acre neighborhood park and ponding basin at Pamela Lane and Kelly Drive. It includes a picnic pavilion and picnic table.

Peachwood Park and Ponding Basin is a 2 acre neighborhood park at Lillie and Alice Avenues.

Rotary Park is a 0.3 acre linear park along Saginaw Avenue at Lincoln Avenue.

In addition to maintaining and operating park facilities, the City's Parks and Community Services Department supervises and coordinates a wide variety of programs and activities. Examples include:

COMMUNITY EVENTS

The Department helps sponsor the following family-oriented and special community events throughout the year:

Easter Spring Fling

This fun family-oriented activity is offered one week before Easter on Saturday at Roosevelt Park from 11 a.m. to 1 p.m. This event is free of charge and offers a variety of games, activities, an Easter Egg Hunt, and special prizes. The Easter Bunny is on-hand to interact with participants and is available for picture taking for a small fee.

Entertainment in the Park

A variety of free entertainment is offered at Rose Ann Vuich Park Bandshell on the last Thursday of the month, March through October, 6 p.m. – 8 p.m.

Community Theater

A summer drama program is offered each year as part of the youth service programs which culminates in a community performance.

Fall Harvest Fling

This free event is held on October 31st at the Dinuba Memorial Building. A variety of fun games, pumpkin decorating, costume contest, and other activities are provided 6 p.m. – 8 p.m.

Christmas Activities

Join the community the 1st Saturday of December to kick-off the Holiday season. Begin with special activities in the heart of downtown followed by an evening Christmas Parade. The annual Tree Lighting Ceremony is held in Rose Ann Vuich Park after the parade. Local groups entertain with Holiday music and Santa leads the community in lighting the Christmas Tree.

(City of Dinuba Parks and Community Services Department website, May 2006)

SPORTS PROGRAMS

The City offers a variety of sports programs for children and adults. A strong emphasis has been placed on community participation in the planning, organization, and implementation of these programs. As these programs grow and participation increases, additional fields and facilities will be needed. Existing facilities will need renovations and there will be an increasing demand for additional staffing.

Youth sports programs include boys and girls' basketball, co-ed soccer, girls' softball, girls' volleyball, baseball, tennis clinics, aquatics lessons, water polo development, and an open swim program at the Dinuba High School pool.

Adult sports programs include Spring and Fall co-ed volleyball, slow pitch softball and basketball.

For more information on any of these programs visit the Department's website at http://www.dinuba.orgparksrec.html. The public is welcome to speak on parks and recreation issues at the Parks and Community Services Commission meetings in the Council Chambers at City Hall on the third Tuesday of each month.

SENIOR PROGRAMS

According to the City's website, Dinuba Senior Citizens, Inc., located at 437 Eaton Avenue, is a "full services, independent Senior Center that provides a variety of social and recreational activities, including daily bingo, ceramics, band, tours, and quilting. The Center also has a nutrition program, as well as health and legal services" (City of Dinuba Parks and Community Services Department website, May 2006).

JOINT USE OF SCHOOL FACILITIES

In addition to City-owned park and recreation facilities, Dinuba residents have access to grounds and playing fields at Dinuba Unified School District (DUSD) schools. DUSD and the City have established an outstanding cooperative relationship encouraging maximum use of public property, facilities, and equipment for the community. Currently the two agencies have a verbal agreement for joint use of facilities; however, as the City and schools experience continued growth, a more formal joint use agreement would be appropriate.

REGIONAL PARKS FACILITIES

Ledbetter Park, **Cutler Park** and **Mooney Grove** are the closest regional Tulare County Parks. Ledbetter Park is an 11 acre regional County Park with picnic areas at Avenue 408 and State Highway 63, 7 miles east of Dinuba. Cutler Park is a 50 acre regional park located along the St. John's River on Ivanhoe Drive (State Route 216) about four miles east of Visalia and 25 miles southeast of Dinuba. Cutler Park is a passive recreation area with access to the St. John's River. Mooney Grove is 155 acres and is the County's most popular park. It includes a lake with paddle boats, playground areas, and baseball diamonds, set among a grove of Valley Oaks and other trees. It is located about 25 miles south of Dinuba on Mooney Boulevard (State Route 63).

Several Fresno County parks are also within driving distance of Dinuba. **Laton-Kingston Park**, a 22 acre park about 15 miles southwest of Dinuba on the Kings River offers picnic facilities, playground equipment, and soccer fields. Also, there are several County Parks and campsites along and near the Kings River in Fresno County below Pine Flat Dam about 30-45 minutes north of Dinuba, including the following:

Kings River Access Park is 7.4 acres of undeveloped park land at Highway 180 and the Kings River crossing.

China Creek Park is an undeveloped park covering 120 acres west of Centerville on Highway 180.

Kings River Green Belt Park is an undeveloped 139 acre park off of Piedra Road which is made up of forested green belt along the Kings River.

Avocado Lake Park, a few miles upstream from the Kings River Greenbelt, is a 210 acre park with full day use facilities including picnic areas, a group reservation area, swimming and fishing on an 83 acre lake.

Winton Park is a 26 acre day use park a few miles upstream from Avocado Lake at the intersection of Trimmer Springs and Piedra Roads with picnic facilities. Fishing is a major attraction.

Choinumni Park is a 170 acre park a few miles upstream from Winton Park near Piedra offering a day-use area, 75 overnight camping units, and one group camping area. Amenities include picnic sites, hiking trails, a trailer dump station, playground area, and fishing.

Pine Flat Recreation Area is a 120 acre campground and day use area at the base of Pine Flat Dam on the Kings River with 52 overnight camping units, five play use areas with picnic facilities, and 60 overflow campsites.

OTHER AREA OPEN SPACE AND RECREATION FACILITIES

Dinuba is within driving distance of a wealth of parks and recreation resources. **Sequoia and Kings Canyon National Parks** and the **Sequoia National Forest** are about an hour's drive to the east. These areas offer opportunities for hiking, fishing, boating, camping, sightseeing, and winter activities such as skiing, snowboarding, and sledding. Some of these locations and activities are listed below:

Kings River Nature Preserve: located two miles east of Highway 99 on Road 28 about 10 miles southwest of Dinuba, this is a nature preserve on the Kings River offering school environmental programs.

Kaweah Oaks Preserve: this 324 acre preserve, owned and managed by the Sequoia Riverlands Trust, is located on Road 182, about seven miles east of downtown Visalia and about 25 miles southeast of Dinuba. It is home to one of the last remaining valley oak riparian forests in the San Joaquin Valley and more than 300 plant and animal species including gray fox, great horned owl, mettall's woodpecker, and the endangered valley elderberry longhorn beetle. The forested area is traversed by canals and walking paths (Sequoia Riverlands Trust website, June 2006).

Lake Kaweah: this lake was formed in 1962 by the construction of Terminus Dam on the Kaweah River by the U. S. Army Corps of Engineers (USACE). It provides opportunities for boating, fishing, camping, and picnicking and is about 30 miles southeast of Dinuba.

Pine Flat Lake: this lake was formed by construction of Pine Flat Dam in 1954 by the USACE and also provides opportunities for boating, fishing, camping, and picnicking. It is about 25 miles north of Dinuba.

Snowsports: Sierra Summit ski resort above Huntington Lake in the Sierra Nevada Mountains about two hours north of Dinuba offers downhill skiing and snowboarding. Cross country skiing is available at Wolverton in Sequoia National Park about two hours to the east of Dinuba.

Spectator Sports: local teams include Fresno Grizzlies AAA and Visalia Oaks A pro baseball, Fresno Falcons minor league hockey, and college athletics at Reedley College, Fresno State, and College of the Sequoias in Visalia.

Other Events and Attractions: the Raisin Days Festival in Dinuba is a major community celebration held in Vuich Park at the end of September. It includes a full carnival, food and craft booths, and live entertainment. It usually draws about 40,000 people over two days (Dinuba Chamber of Commerce, June 2006). Other nearby events and attractions in Tulare and Fresno Counties include the Tulare County Fair and World Ag Expo in Tulare; The Fresno County Fair in Fresno; the Fresno County Blossom Trail, which includes the area around Reedley and is usually visited during the blooming season from February to April; the Woodlake Rodeo, held at the Woodlake Rodeo Grounds every Mother's Day weekend; the Clovis Rodeo, held at the Clovis Rodeo Grounds the last weekend in April; the Tulare County Symphony at the Fox Theatre in downtown Visalia; and the Fresno Philharmonic in downtown Fresno.

8.2 Historical, Archaeological and Cultural Resources

The purpose of this section is to identify known and potential cultural resources in the Dinuba area and to evaluate what constraints known archaeological resources might have on the development of the General Plan. Research was conducted to identify previously recorded resources in the Planning Area and to collect a general background of the prehistory and history in the Dinuba vicinity. The background information collected in this section will provide a basis for evaluation of the cultural and historical significance of individual resources of the area.

Research sources employed in this section include:

- California Office of Historic Preservation
- Central California Information Center of the California Historical Resources Information System
- National Register of Historic Places, including listed and eligible properties
- California Inventory of Historic Resources
- California Historical Landmarks
- California Points of Historic Interest
- Other registers (through Information Center)

- Historic maps
- Published texts

PREVIOUS STUDIES

A cultural records search was conducted by the Center for Archaeological Research at California State University, Bakersfield for the Dinuba Planning Area on May 31, 2006 (reference Appendix A for the Cultural Resources Records Search letter). The search included the following resources: National Register of Historic Places, the California Register of Historical Resources, California Points of Interest, California Inventory of Historic Resources, and California State Historic Landmarks.

The records search indicated that there have been 13 previous cultural resource studies within or immediately adjacent to the Planning Area. As a result of these studies, 30 sites were documented directly within the Planning Area. It should be noted that a large portion of the Planning Area has never been surveyed. The records search found no known cultural resources within the Planning Area or within a half-mile radius that are listed in the *National Register of Historic Places* the *California Register of Historical Resources, California Points of Interest, California Inventory of Historic Resources,* or the *California State Historic Landmarks.*

There are numerous buildings within the City of Dinuba that appear to be more than 50 years old. These structures will necessitate the preparation of a Historic Architectural Survey Report to determine if they are eligible for the National Register of Historic Places.

A historical resource is defined as a building, structure, object, prehistoric or historic archaeological site, or district possessing physical evidence of human activities over 45 years old. There may be unidentified features in the Dinuba vicinity that are 45 years or older and considered as historical resources requiring further study and evaluation by a qualified professional of the appropriate discipline.

PREHISTORY

The Plan Area lies within the historic territory of the Yokuts people. Members of the Penutian language family that held all of the Central Valley, San Francisco Bay, and the Pacific Coast from Marin County to Point Sur, the Yokuts were a distinct language grouping in California. Yokuts communities had true tribal division with group names, a trait absent among other California Indian people (Kroeber 1925). Each tribe spoke a particular dialect common to its members but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925). The territorial boundaries of the various Yokuts tribes and their neighbors have been delineated by Cook (1955). The Yokuts held the valley floor from the Tehachapis to Stockton, where they were bordered on the north by the Plains Miwok and on the west by the Saclan (Bay Miwok) and Costanoan, also members of the Penutian family. The Miwok of the foothill linguistic division held the Sierra foothills along the eastern territorial boundary to the Fresno River (Barrett and Gifford 1933). From the Fresno River, south, to the Tehachapis, the Sierra Nevada was the home of members of the Shoshonean linguistic group, with southern territorial limits along the Tehachapis also controlled by Shoshonean people. The various peoples of the Hokan language family held the Coast Ranges on the west from Point Sur southward.

Trade was well developed, with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and perhaps came also from Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among the many items exported to the east by Yokuts traders (Davis 1961).

Economic subsistence was based on the ubiquitous acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs that formed a maze within the valley provided abundant food resources, such as fish, shellfish, and turtles. Game, wildfowl, and small mammals were trapped and hunted to provide protein augmentation of the diet. In all, the eastern portions of the valley provided a lush environment of varied food sources, and the estimated large prehistoric population reflected this abundance (Cook 1955; Baumhoff 1963).

Settlements were oriented toward water resources, with major villages situated near waterways that provided not only reliable water supplies but also substantial food sources. Houses varied in size and shape (Latta 1949; Kroeber 1925), with most constructed from the readily available tules found in the extensive marshes of the low-lying valley areas. Housepit depressions, still extant in the protected areas of the San Joaquin valley, range in diameter from three to 18 meters.

The most devastating impacts of the Spanish colonization effort were not the result of military conflicts, but came from Old World diseases newly introduced to the native people. Three major epidemics swept through the missions: a respiratory virus at Mission Santa Clara in 1777, pneumonia and diphtheria that killed children from Mission San Carlos to San Luis Obispo, and the devastating measles epidemic that killed at least 1,600 natives at missions from San Francisco to Santa Barbara (Castillo 1978:103). These epidemics at the missions were followed in 1833 by a severe malaria epidemic that claimed thousands of lives and virtually destroyed many villages and tribes. Up to three-quarters of the population in the San Joaquin Valley was killed by this contagious disease, which was brought to California by a party of Hudson's Bay Company fur trappers from the Oregon country. In 1834, the Mexican government desecularized the missions and many of the Indian residents returned to their former territories, where they survived by a combination of strategies that included traditional hunting and gathering and livestock raiding (Wallace 1978a:459-460; Wallace 1978b:468-469).

HISTORY

Dinuba's history dates back to 1888, when James Sibley and W. D. Truxbury, two major area landowners, deeded 240 acres to the Southern Pacific Railroad for a railroad depot and town site. A railroad engineer in Southern Pacific's San Francisco office, for no known reason, recorded the town name as Dinuba. The town was incorporated as a City in 1906.

The town's economy has always been centered on agriculture and related industries, and to practice agriculture in the area required irrigation. In 1882 the '76 Land and Water Company was formed to divert water from the Kings River into the area and construct an irrigation system. In 1890 it sold its canal system to the Alta Irrigation District, which then began to expand the system. By 1909 the Alta Irrigation District had 50 miles of canals and ditches and served 80,000 acres of farmland and towns. Dinuba's first Raisin Day Parade was held in 1911 and continues to be celebrated today.

Dinuba experienced steady population growth during the 20th century, growing from 970 persons in 1910 to 19,578 persons in 2006 (State of California Department of Finance 2006). The town has produced several notable persons, including Rose Ann Vuich, the first woman to be elected State Senator of California, and Dick and Burt Rutan, the makers of the first airplane to fly nonstop around the world without refueling and the first privately manufactured vehicle to enter suborbital space (City of Dinuba website; X Prize Foundation website, May 2006).

CHAPTER NINE

NATURAL AND AGRICULTURAL RESOURCES

CHAPTER NINE – NATURAL AND AGRICULTURAL RESOURCES

9.1 Water Resources in the Area

SURFACE WATER

The primary surface waters in the vicinity of Dinuba include the Kings River, the Friant-Kern Canal, and the East Branch of the Alta Canal. Closer to the City limits are numerous smaller canals which service local croplands.

The Kings River flows approximately five miles west and southwest of the urbanized portion of Dinuba. The drainage area of the Kings River above Pine Flat Dam is 1,542 square miles, and the average annual flow at this point is 1,689,700 acre-feet. Pine Flat Dam is the main irrigation conservation facility on the Kings River and is operated by the Kings River Water Association, an organization of Kings River diverters. Water released from Pine Flat Dam flows through the various channels of the Kings River in the Valley to the diversion points of 22 water agencies in Kings, Tulare, and Fresno Counties. In extremely wet years, Kings River water flows to the ocean through the Fresno Slough or to Tulare Lake through the south fork of the Kings River.

One of the districts diverting water from the Kings River is the 15,000-acre Alta Irrigation District. Situated northeast of Dinuba, this district extracts surface water to supplement agricultural groundwater pumping.

In 1982, the Federal Emergency Management Agency (FEMA) prepared a Flood Insurance Study that investigated the existence and severity of flood hazards in the City of Dinuba. The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers. This initial work, which was completed in December of 1980, covered all significant flooding sources affecting Dinuba. Flooding in Dinuba has been reported to have occurred in 1937, 1950, 1955, 1966, 1969, and 1993. Flooding in the City has been the result of intensive localized rainfall combined with snowmelt runoff which has resulted in overflows of the East Branch of the Alta Canal.

The FEMA study used the national standard of the 100-year flood as the base flood-line for purposes of flood plain management measures. For those areas subject to shallow flooding and deep ponding, boundaries of the 100-year flood were delineated using the appropriate elevations, depths and topographic maps. Flood boundaries are indicated on the Flood Insurance Rate Map for the Dinuba area (Figure 10-1).

GROUNDWATER

Dinuba is located in the Kings sub-basin of the San Joaquin Valley groundwater basin in the Tulare Lake hydrologic region. The sub-basin encompasses approximately 1,530 square miles and contains approximately 90 million acre-feet of water. Groundwater levels in this region are ample and have exhibited a general upward trend since droughts in 1976-77, and 1987-92. Prior to agricultural and urban development, groundwater moved from areas of recharge along the eastern rim of the Valley to areas of discharge along the Valley axis. Recharge was primarily by seepage from stream flows. Under present conditions, groundwater is recharged primarily from stream flow percolation, from percolation basins developed by agricultural irrigation districts, by percolation from treated wastewater disposal facilities and from percolation attributed to excess applied surface irrigation water. Groundwater depth in the Dinuba area is approximately fifty feet below the ground surface.

9.2 Groundwater Quality

In general the groundwater quality of the City is relatively high with the exception of one major contaminant, dibromochloropropane (DBCP), a soil fumigant nematicide. Like many other east side San Joaquin Valley communities, Dinuba has experienced DBCP contamination in City wells to the point that several wells were recommended for abandonment. Many of the existing wells and new well sites in the City will require treatment to remove DBCP. Other than this contaminant, the City's groundwater supply is suitable for domestic purposes without treatment.

9.3 Summary of Existing Descriptions of Soils in the Planning Area

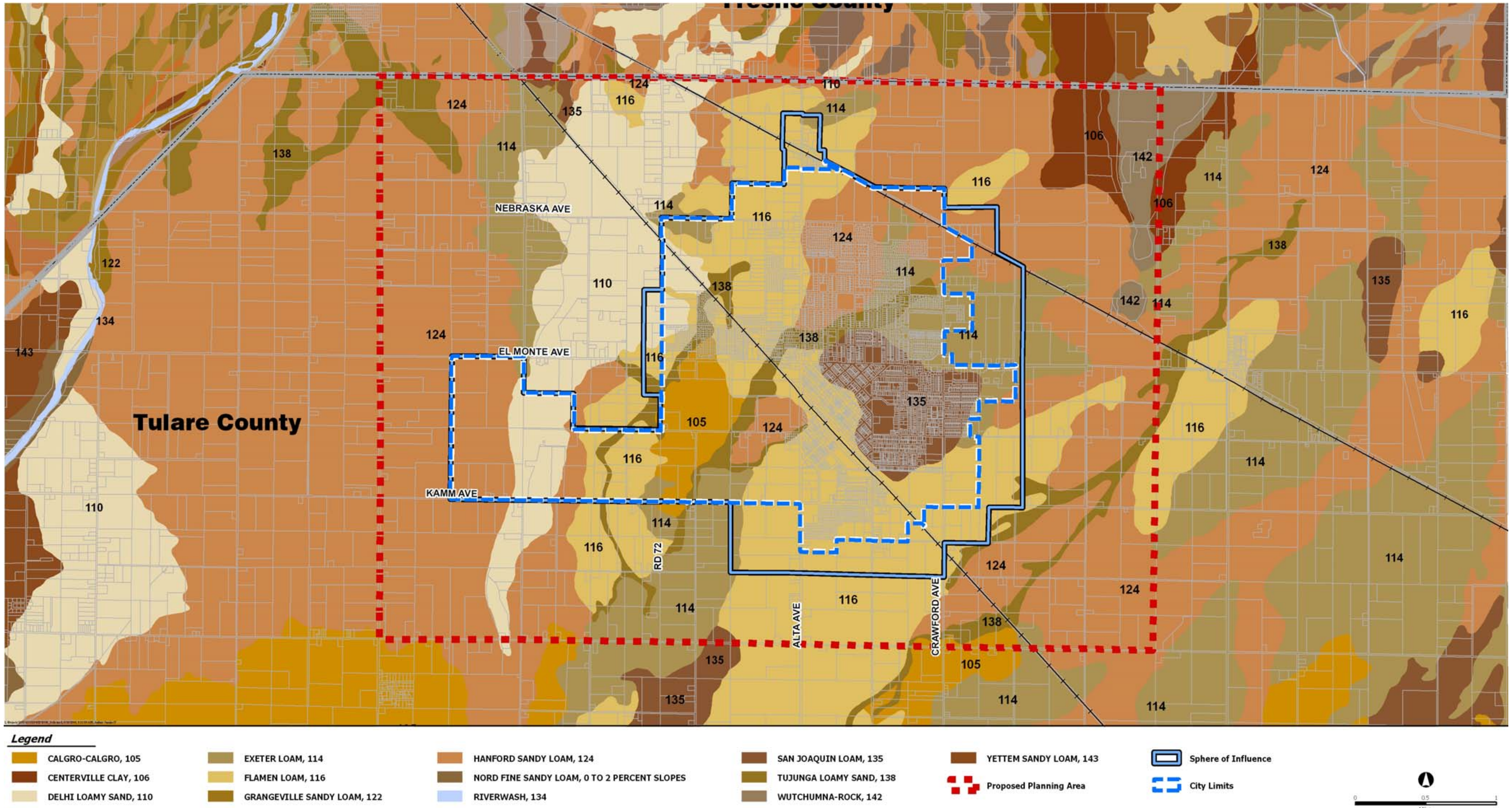
As described by the U.S. Soil Conservation Service, the soils of the Dinuba area fall primarily into six associations: Exeter loams, Flamen loams, Calgro-Calgro-salin-sodic complexes, Hanford sandy loams, San Joaquin loams, and Tujunga loamy sand. Table 9-1 details these soils classifications and properties. Figure 9-1 shows the location of these soils in relationship to the City of Dinuba.

Soils of the Exeter loam association are moderately well drained soils and are suitable for irrigated crops, building site development and dairies. Soils of the Flamen loam association are also moderately well drained and suitable for land uses similar to that of Exeter loams. Flamen loams can also become prime farmland if irrigated properly. Soils of the Calgro-Calgro salin-Sodic association are moderately well drained soils suitable for irrigated crops, building site development and dairies. Hanford sandy loam soils are well drained soils with suitable uses similar to Calgro-Calgro salin-Sodic soils. Hanford sandy loam soils can also become prime farmland if properly irrigated. San Joaquin loam soil associations are moderately well drained soils suitable for irrigated crops, building site development and dairies. Soils of the Tujunga loamy sand association are somewhat excessively drained soils with suitable uses similar to San Joaquin loam soils. Delhi loamy sand soils are somewhat excessively drained soils that can serve as prime farmland but are also suitable for building site development and dairies.

Table 9-1
General Soil Characteristics
within the Dinuba Planning Area

Soil Type	Land Use	Drainage	Permeability	Prime Farmland	Shrink-Swell Potential
Exeter loam 0 to 2% slopes	Irrigated crops, building site development and dairies	Moderately well drained	Moderately slow	No	Moderate
Flamen loam, 0 to 2% slopes	Irrigated crops, building site development and dairies	Moderately well drained	Moderate	Yes, if irrigated	Moderate
Calgro-Calgro salin-Sodic, 0 to 2% slope	Irrigated crops, building site development and dairies	Moderately well drained	Moderate	No	Low
Hanford sandy loam, 0 to 2% slopes	Irrigated crops, building site development and dairies	Well drained	Moderately rapid	Yes, if irrigated	Low
San Joaquin loam, 0 to 2% slopes	Irrigated crops, building site development and dairies	Moderately well drained	Very slow	No	High
Tujunga loamy sand, 0 to 2% slopes	Irrigated crops, building site development and dairies	Somewhat excessively drained	Rapid	No	Low
Delhi loamy sand, 0 to 2% slopes	Irrigated crops, building site development and dairies	Somewhat excessively drained	Rapid	Yes	Low

Source: US Geological Survey, *Western Tulare County, CA Soil Survey, Soils Descriptions,* November 1999

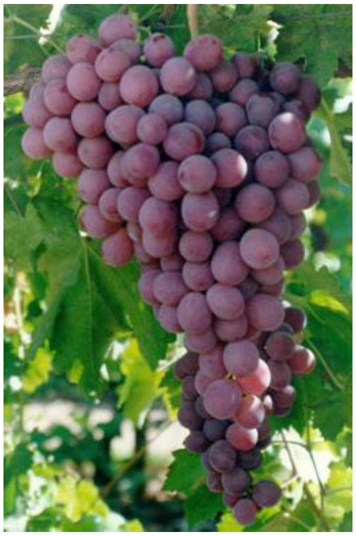


Quad Knopf

SOILS

Figure 9 - 1

9.4 Agricultural Production Patterns and Trends



Agricultural soil capacity is classified according to a number of criteria including prime farmland, farmland of statewide importance and unique farmlands. The U.S. Department of Agriculture Soil Conservation Service defines these farmlands as:

Prime Farmland is land best suited for producing seed, feed, forage, fiber and oilseed crops and also available for these uses (the land could be cropland, pasture land, rangeland, forest land or other land, but not urban built-up land or water). It has the soil quality, growing season and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management, according to modern farming methods.

Farmland of Statewide Importance is land other than prime farmland that has a good combination of physical and chemical characteristics for production of food, feed, forage, fiber and oilseed crops available for these uses (the land could be cropland, pasture, rangeland forest land or other land, but not urban built-up land or water areas). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed (including water management), according to modern farming methods.

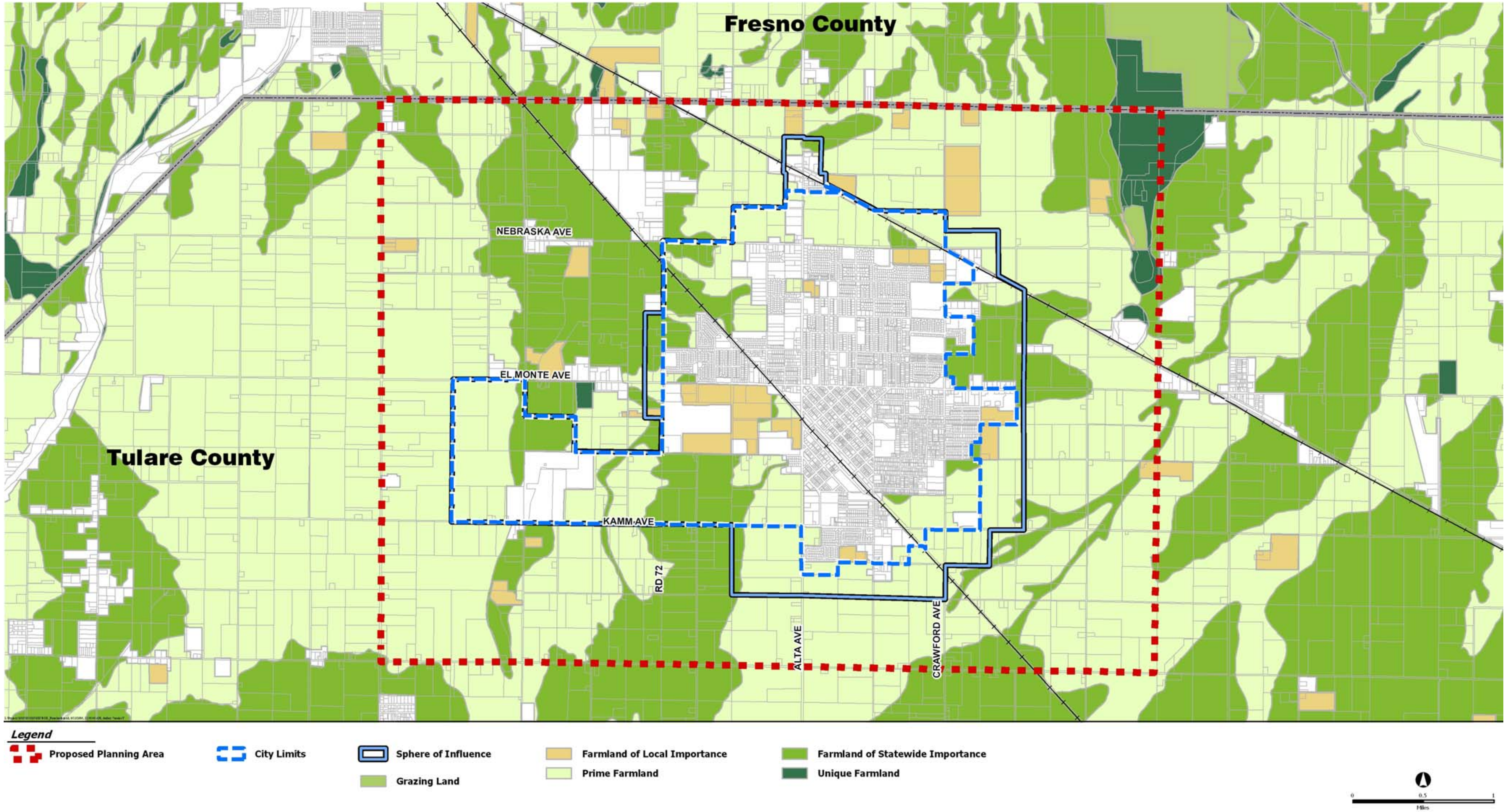
Unique Farmland is land other than prime that is used for the production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce a sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods. Examples of such crops are citrus, olives, cranberries, fruit and vegetables.

Figure 9-2 depicts the distribution of important farmland by soil type in the Planning Area.

The dominant land use around the City limits is agricultural. Single-family homes occupy many parcels at rural densities. Farm sheds and other ancillary structures are also present. Surface water for agricultural uses is delivered via canals, ditches, and channels.

Tulare County, one of the most diverse and productive farming areas in the world, produces over 100 different crops, lumber, nursery stock, livestock, poultry and dairy products. The total value of these agricultural products was approximately $4.5 billion in 2005.

The benefits of a strong agricultural community far outweigh just the gross receipts of the producers. A single dollar generated by agricultural production results in three to four dollars in the County's gross domestic product. One out of every ten jobs throughout the state is directly linked to agriculture.



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IMPORTANT FARMLAND

Figure 9 - 2

According to the 2005 Tulare County Annual Crop and Livestock Report, livestock & poultry products, fruit & nuts, and livestock & poultry are the top grossing crops in the County, followed by field crops (Table 9-2). In 2005, the total harvested acreage of all crops in Tulare County was 1,608,543.

Table 9-2
Tulare County's Ten Leading Commodities
2005

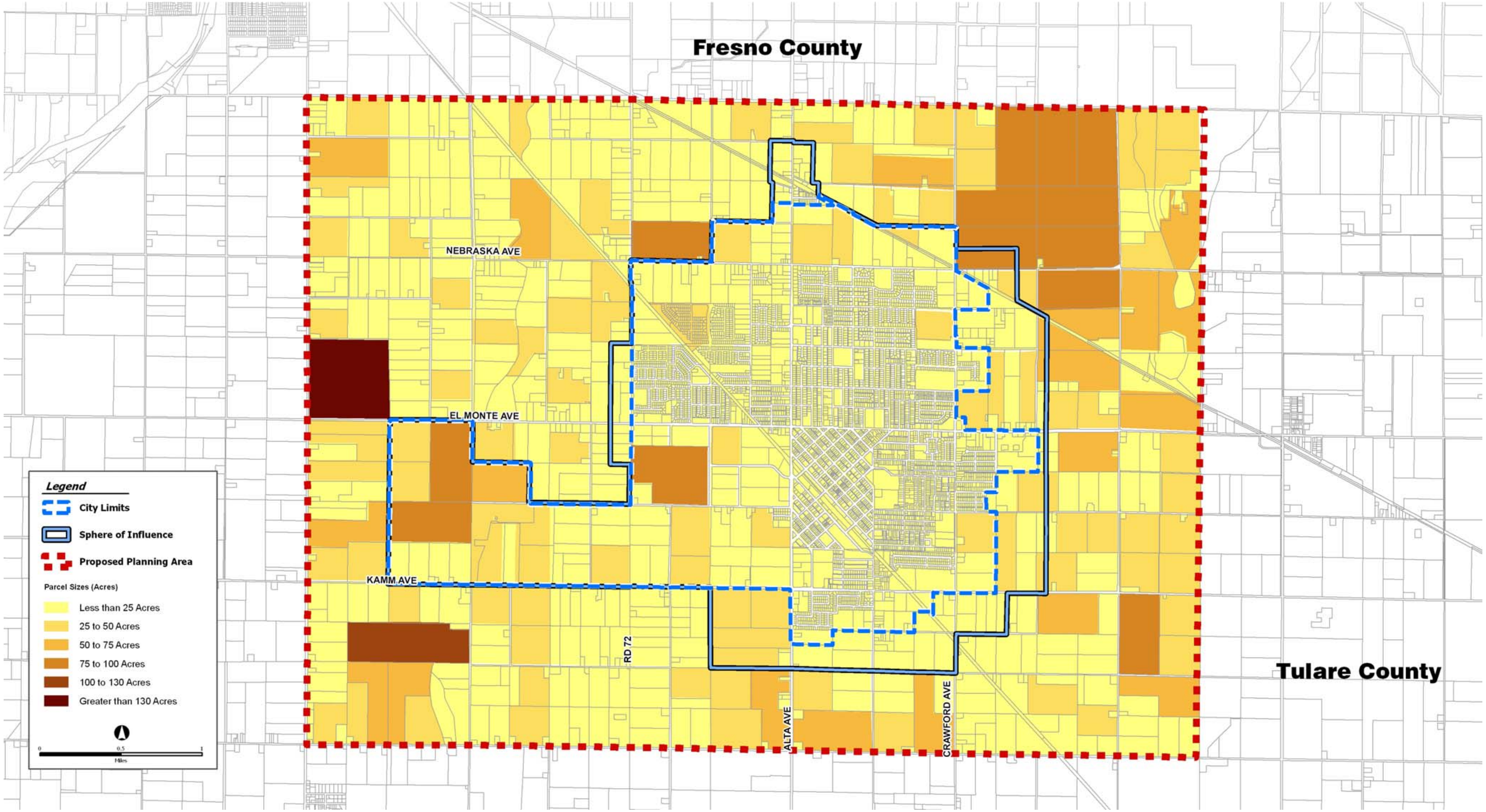
Commodity	Year	Harvested Acreage	Value
Field Crops	2005	1,293,502	$404,130,000
	2004	1,308,930	$420,701,000
Vegetable Crops	2005	6,878	$26,942,000
	2004	7,916	$37,252,000
Fruit & Nut Crops	2005	307,741	$1,745,966,000
	2004	300,961	$1,590,610,000
Nursery Products	2005	X	$82,260,000
	2004	X	$69,423,000
Apiary Products	2005	X	$25,420,000
	2004	X	$28,063,000
Livestock & Poultry Products	2005	X	$583,457,000
	2004	X	$508,983,000
Seed Crops	2005	X	$1,489,997,000
	2004	X	$1,378,966,000
Industrial Crops	2005	X	$3,069,000
	2004	X	$3,171,000
Grand Total	**2005**	**1,608,543**	**$4,362,738,000**
	2004		**$4,039,524,000**

Source: 2005 Annual Crop and Livestock Report

According to the most current California Farmland Conversion Report, Tulare County lost 1,190 acres of cropland between 2000 and 2002. The Report stated that the most common reasons for irrigated farmland loss in the San Joaquin Valley were land idling, low-density residential development and ecological restoration uses.

PARCELIZATION

Figure 9-3 classifies properties by parcel size for the proposed Planning Area of Dinuba. Parcel sizes are grouped as follows: 0 to 25 acres; 26 to 50 acres; 51 to 75 acres; 76 to 100 acres, 101 to 130 acres; and 131 to 153 acres. The approximate acreages for each category are included in Table 9-3.



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PARCEL SIZES BY ACREAGE

Figure 9 - 3

Table 9-3
Dinuba Planning Area Acreage by Parcel Size

Parcel Size	Total Acres
0-25	7,581
26-50	3,142
51-75	1,011
76-100	970
101-130	117
131-153	0

Source: Quad Knopf analysis

CROP VALUES

In 2005, the gross value of agricultural production in Tulare County totaled $4,362,738,000, up 7.4 percent from $4,039,524,000 in 2004. This figure makes Tulare County the second most agriculturally productive county in the United States. The leading product was milk at $1.5 billion. Other leading commodities in 2005 were oranges, cattle, grapes, and alfalfa. Table 9-4 identifies leading Tulare County crop and livestock commodities for 2005 by dollar value.

Table 9-4
Top 20 Agricultural Products
Produced in Tulare County, 2005

	2005 Ranking	2005 Total Value	2004 Ranking
1	Milk	1,476,011,000	1
2	Oranges – Naval & Valencia	582,657,000	2
3	Cattle & Calves	514,017,000	3
4	Grapes	399,974,000	4
5	Alfalfa – Hay & Silage	144,304,000	5
6	Corn – Grain & Silage	102,721,000	8
7	Pistachio Nuts	97,170,000	13
8	Plums	95,584,000	7
9	Walnuts	94,526,000	12
10	Almonds – Meats & Hulls	90,862,000	9
11	Nectarines	87,618,000	10
12	Peaches – Cling & Freestone	75,551,00	11
13	Cotton – Lint & Seed	63,673,000	6
14	Nursery – Ornamental Trees & Shrubs	55,824,000	14
15	Silage – Small Grains	39,560,000	17
16	Tangerines	39,483,000	23
17	Lemons	34,568,000	18
18	Olives	32,704,000	15
19	Hogs & Pigs	25,498,000	19
20	Kiwi Fruit	23,595,000	20

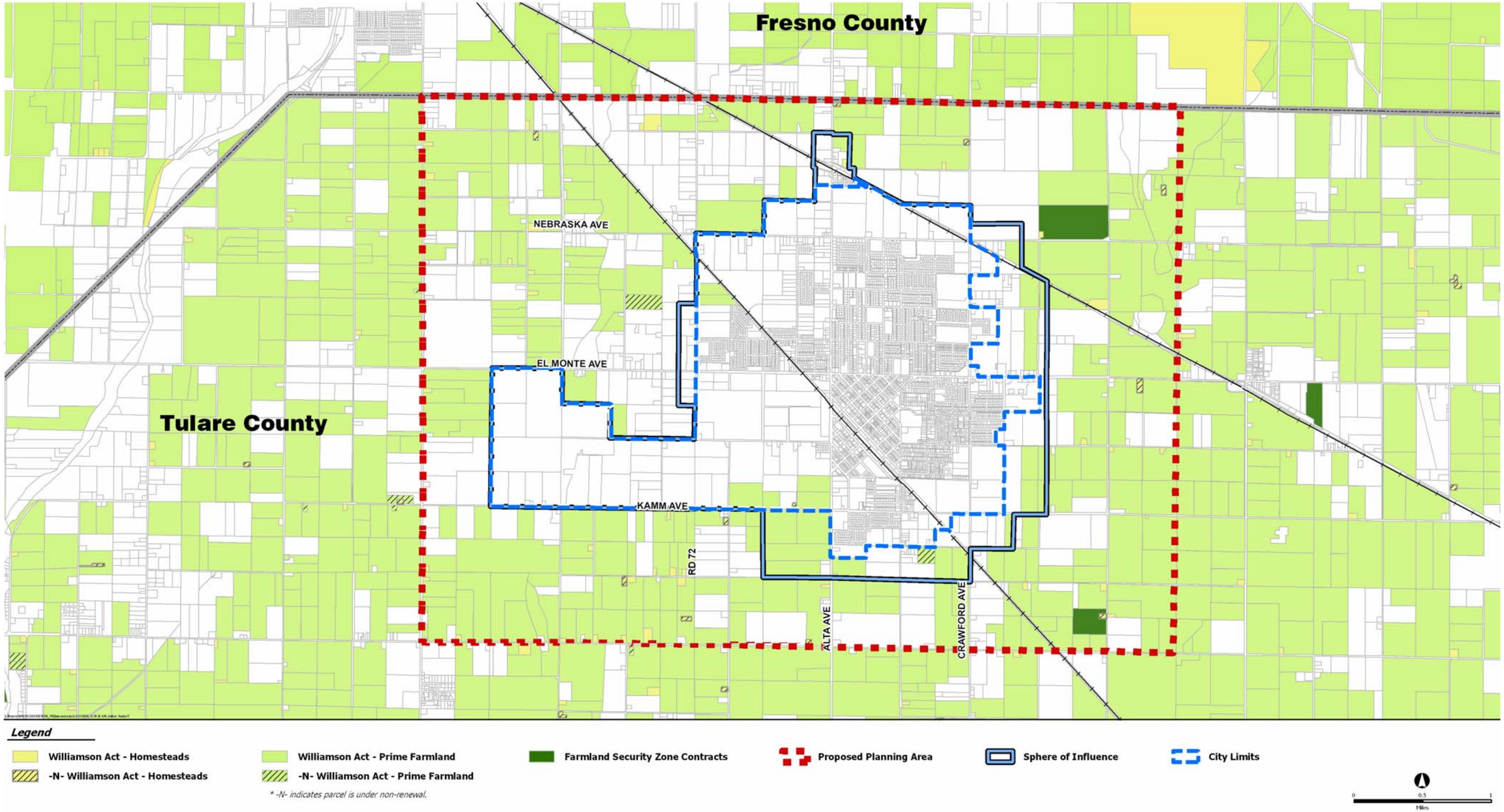
WILLIAMSON ACT

The Williamson Act is a State program administered by counties and cities for the preservation of agricultural land. Participation in the program is voluntary on the part of both landowners and local governments, and is implemented through the establishment of agricultural preserves and the execution of Williamson Act contracts. Individual property owners enter into a contract which restricts or prohibits development of their property to non-agricultural uses during the term of the contract in return for lower property taxes. Initially signed for a minimum ten-year period, the contracts are automatically renewed each year for a successive minimum ten-year period unless a notice of nonrenewal is filed or a contract cancellation is approved by the local government. Figure 9-4 illustrates parcels in the Dinuba Area that are currently under Williamson Act contract.

State subventions are paid to participating county and city governments based on enrolled acreage in partial repayment for foregone property tax revenues. These subventions typically do not fully reimburse the counties and cities for lost revenues. For this reason, some jurisdictions do not participate in the Williamson Act program, while others have stopped taking new applications. The current subvention rate is five dollars per acre for prime farmland and one dollar per acre for nonprime land.

State law requires that participating counties and cities adopt rules governing the administration of agricultural preserves and the types of uses allowed on land under contract. The uniform rules governing the types of uses allowed on lands under contract in Tulare County are contained in the zoning regulations of the Tulare County Zoning Ordinance. Dinuba also has a policy concerning the administration of agricultural preserves that was adopted in 2002.

State law establishes procedures for cancellation of Williamson Act contracts and requires that all cancellations be carried out in accordance with those procedures. There is no local discretion. State law limits the termination of a Williamson Act contract through the cancellation process to "special" or "extraordinary" circumstances. In contrast to the nonrenewal process, in which a contract is phased out over a nine-year period, approval of a cancellation request results in the immediate termination of a contract once conditions are met. Only the property owner can apply for cancellation, and only the Board of Supervisors can approve such a request after holding a public hearing and making the finding that the cancellation would either be consistent with the intent of the Williamson Act or would be in the public's interest. If a property owner receives approval of cancellation, payment based on a percentage of the current market value of the land is required prior to termination of the contract. In Tulare County in 2000, there were approximately 1.1 million acres under Williamson Act contract.



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WILLIAMSON ACT PARCELS

Figure 9 - 4

Although implementation of the Williamson Act program is voluntary, once contracts are executed, withdrawal from the program can only be undertaken in accordance with State law. The local entity may, however, impose more stringent requirements for cancellation than those specified under State law. Notices of nonrenewal can be filed either by the property owners or the local entity after adequate notice has been given, as set forth in State law.

In 1998, the State Legislature amended the Williamson Act to provide for the establishment of "Farmland Security Zones." Since the passage of the Williamson Act, it became apparent that owners of prime farmland and land used for high value crops may not realize the property tax reductions under traditional Williamson Act contracts sufficient to justify restricting their land to agricultural purposes. The Farmland Security Zone legislation authorizes landowners to petition the Board of Supervisors to rescind their existing Williamson Act contract in favor of a new Farmland Security Zone Contract (FSZ contract). Land subject to a FSZ contract is valued for assessment purposes at 65 percent of the value of its Williamson Act value or its Proposition 13 value, whichever is lower. The FSZ legislation provides that the FSZ contracts must be one or more of the following classifications, as designated by the California Department of Conservation Important Farmland Series maps: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The legislation does not include cancellation provisions ("The Farmland Security Zone: Preserving California's Prime Agricultural Farmland," California Farm Bureau Federation website, http:/www.cfbf.com/land.htm, November 1999). In 2001, Tulare County had 8,348 acres under FSZ Contract.

MINERAL RESOURCES

Although Tulare County contains several mineral resources, none are found in Dinuba or its vicinity.

9.5 Employment

According to the State Employment Development Department (EDD), total civilian employment in Tulare County was estimated to be 187,400 in April, 2006. The unemployment rate was 9.2 percent for 2006, compared to the statewide unemployment rate of 4.9 percent. Total farm employment in the agricultural sector has increased from 27,700 in 1990 to 36,600 in 2006. Employment in the goods producing sector has increased from approximately 16,800 in 1990 to 18,700 in 2006. Total farm employment in 2006 accounted for 10 percent of the civilian labor force.

Refer to Table 5-3 for Dinuba's employment by industry for 1995 to 2005. Historically, agriculture and related industries have dominated the County's economy, creating higher unemployment rates partly due to seasonal variations in employment.

9.6 Multiplier Effect

According to the Tulare County Agricultural Commissioner, agricultural production figures only partially reflect the overall measure of the impact agriculture has on the local economy. Field labor, processing, transporting, marketing and other farm-related services significantly multiply the value agriculture has to Dinuba.

Income from agriculture at the community level may be classified as primary or secondary income. Examples of primary income are farm operators' and proprietors' net cash farm income, and wages paid to hired labor. The secondary income contribution arises from primary farm income spent as household income. Also, most gross farm income is used to purchase farm business inputs and equipment. Expenditure of these dollars supports local businesses which pay wages and provide income to local proprietors. The impact of both farm household and farm business spending contributes to the secondary income as measured by the income multiplier.

When measuring the multiplier effect, an income multiplier is used to help determine the total effect of each additional dollar earned by a local household. The multiplier ranges in value from one to some value greater than one. Each multiplier has two components: the initial direct income, or primary effect; and the secondary effect, which is caused by two separate forces.

The first force is the ripple effect that occurs when the farmers buy local inputs to use in their production process. The operating budget of the farms is spent either inside or outside the city and the county. Dollars spent locally will generate an indirect effect, resulting in more personal income available to local households. Dollars spent outside the City are lost dollars, and they generate no additional impact.

The second force is the ripple effect that occurs when farm income is paid out to its employees and owners. These dollars go to people in the form of wages, interest, rents, dividends, and profits. If the recipients live locally and spend their household income locally, the dollars will have an induced effect, resulting in more personal income available to local households. If the dollars go to people who do not live or spend in Dinuba, the dollars are lost and generate no additional income.

"HIGH TECH" AGRICULTURE AND ITS POTENTIAL

New agricultural technologies include agricultural software (applications of computer technology to agriculture), specialty fertilizers, moisture sensing equipment for irrigation control, "precision" farming based on use of geographic information systems, remote sensing, robotics, computer technology, and biorational and sustainable farming practices which will support twenty-first century agriculture. "High tech" agriculture has the potential to produce higher yields at lower costs. Remote sensing has the capacity to detect specific problem areas and treat them with precision. Position sensitive crop management conserves water and dispenses chemicals in a judicious manner, as compared to indirect methods. Biorational techniques can manage insects through the use of non-toxic behavioral chemicals. These techniques are related to integrated pest management, which uses biological controls to control pests with minimum harmful side effects. Biorational techniques are those techniques that are compatible with the use of biological control, or have little impact on natural enemies. Through the implementation of sustainable agriculture, natural resource degradation can be reduced or prevented. Environmental health can be maintained through the use of reduced-volume irrigation systems, reduced tillage, and the efficient use of inputs.

The USDA policy goals and recommendations for small farms (Section 3.6, Role of Small Farms) recommends emphasizing sustainable agriculture as a profitable, ecological and socially sound strategy. Large scale production often requires the use of intensive systems that harm the natural environment, whereas sustainable agriculture can produce higher value products using methods consistent with long-term environmental enhancement and higher returns per acre.

BIOTECHNOLOGY

Agricultural biotechnology can be defined as the use of living organisms, including microbes, plants and animals, or materials produced from living organisms, to produce useful products such as pest and disease resistant crops, improved foods and animal vaccines. It includes enzymes produced in fermentation processes, biorational and natural pest control products, genetically transformed food and animal products, and the use of plants to produce human therapeutics. The following are opportunities for business expansion in agricultural biotechnology:

- Biotechnology research and development companies
- Animal-oriented agricultural biotechnology companies
- Domestic and international seed companies
- Agricultural biotechnology production companies
- Start-up agricultural biotechnology companies
- Seed and chemical companies
- Advanced agricultural technologies

NON-TRADITIONAL AGRICULTURAL OPERATIONS

Examples of non-traditional agricultural operations include aquaculture, hydroponics and tree farms. None of these are mentioned in the annual Agricultural Crop Report issued by the Tulare County Agricultural Commissioner, presumably because revenues are below the cutoff point. Other examples of "non-traditional" or specialty operations include:

- Grape rootstock and grape plant nurseries
- Hardy perennial wholesale nurseries
- Specialized nurseries applying advanced genetics and agricultural biotechnology to their plant development programs
- Specialized nurseries for California native and drought-resistant plants
- Fruit tree nurseries
- Regional wholesale nurseries
- Sod farms
- Seed support industries

- Agricultural software
- Specialty fertilizers

ECONOMIC DEVELOPMENT AND SUSTAINABILITY

Sustainable agriculture is a farming system that is economically sound, reduces the use of chemical pesticides, and/or promotes cultural practices that enhance habitat values to wildlife. Promoting sustainable agriculture in the Dinuba area will increase the amount and quality of wildlife habitat while also continuing an industrial use of land that provides economic benefit to the City. There are ways in which existing agricultural production practices can be modified to provide greater wildlife habitat value while allowing crop production to continue.

Sustainability can also refer to maintaining a critical acreage mass in production of a particular commodity to support the infrastructure and processing needs for that commodity (e.g., seed companies, agricultural machinery suppliers, etc). The central location of Tulare County with respect to other agricultural counties in the region (Kings, Kern, and Fresno) and the size of Tulare County's agricultural economy help assure that this critical acreage mass will remain.

The American Farmland Trust's projected urban and suburban development and the resultant loss of farmland in the San Joaquin Valley will increase the demand for raw materials from prime farmland in Tulare County and other areas in the Southern San Joaquin Valley. Thus, the remaining farmland in the San Joaquin Valley will become progressively more important and valuable as a source of raw farm commodities.

9.7 Description of General Wildlife Habitat within the Dinuba Area

Historically, the natural vegetation of the Dinuba area was characterized by vast stretches of savanna traversed by the riparian stands of the Kings River and its tributaries. These broad savannas were dominated by Valley Oak Woodland, Valley Needlegrass Grassland, Valley Sacaton Grassland, and Non-native Grassland natural vegetation communities. The riparian corridors of the Valley portion of the Kings River and its tributaries were dominated by Great Valley Mixed Riparian Forest and Great Valley Valley Oak Riparian Forest natural vegetation communities. The range of these natural vegetation communities has been significantly reduced from historic levels as a result of conversion of these lands to urban and agricultural uses. The only remnants of these natural communities presently remain in the Central Valley. The following natural communities' classifications are from Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986). Descriptions are incorporated by reference from Crampton (1974), Holland (1986), and Barbour and Major (1988).

Valley Needlegrass Grassland is characterized by the presence of tussock-forming perennial purple stipa (Stipa pulchra) and nodding stipa (S. cernua). These native bunchgrasses are often surrounded by native and introduced annuals, which often exceed the bunchgrasses in cover. Aggressive, well adapted European annuals, introduced by 18th Century Spanish soldiers and missionary fathers, have largely replaced native perennial in California. Valley Needlegrass Grassland is often associated with Oak Woodlands on moister, well drained soils. Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, perennial grasslands are now reduced to scattered remnants in the foothills of the Central Valley and the hills along the coast in central and southern California.

Valley Sacaton Grassland is characterized by the presence of tussock-forming perennial grasses alkali sacaton (Sporobolus airoides) and saltgrass (Distichlis spicata). Valley Sacaton Grassland flourished on the alkaline flats of the Central Valley. Some annuals also grow on the alkali, namely alkali barley (Hordeum depressum) and California alkali grass (Puccinellia simplex). Formerly extensive in the Tulare Lake Basin and along the San Joaquin Valley trough north to Stanislaus and Contra Costa Counties, Valley Sacaton Grassland is now much reduced.

Non-native Grassland is characterized by the presence of introduced grass species that may be interspersed with native forbs and shrubs. Typical species found in this natural community are wild oats (Avena fatua), slender wild oats (Avena barbata), the filarees (Erodium cicutarium and E. botrys), soft chess (Bromus mollis), ripgut brome (Bromus rigidus), red brome (Bromus rubens), and rye grass (Lolium multiflorum). This grassland community is often associated with numerous species of showy-flowered, native annual forbs ("wildflowers"), especially in years of favorable rainfall. Non-native grassland is found in the valleys and foothills of most of California, except for the north coastal and desert regions. Non-native Grassland formerly occupied large portions of the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, areas that are now agricultural and urban.

Great Valley Mixed Riparian Forest is a tall, dense, winter-deciduous, broadleafed riparian forest. The tree canopy is usually fairly well closed and moderately to densely stocked with several species including California boxelder (Acer negundo californica), Hinds walnut (Juglans Hindsii), California sycamore (Platanus racemosa), Fremont cottonwood (Populus fremontii), Goodding willow (Salix gooddingii variabilis), red willow (S. laevigata), and Pacific willow (Salix lasiandra). Understories consist of shade-tolerant shrubs like buttonbush (Cephalanthus occidentalis), Oregon ash (Fraxinus latifolia) and lianas such as wild grape (Vitis californica) and virgins-bower (Clematisligusticifolia). Great Valley Mixed Riparian Forest was once extensive in the floodplains of low-gradient, depositional streams of the Sacramento and northern San Joaquin Valley, but has largely been cleared for agriculture, flood control, and urban expansion.

Great Valley Valley Oak Riparian Forest is a medium to tall broadleafed, winter deciduous, closed-canopy riparian forest dominated by valley oak (Quercus lobata). Understories include scattered Oregon ash, Hinds walnut, and California sycamore as well as young valley oaks. Valley Oak Riparian Forest was once extensive on low-gradient, depositional reaches of the major streams of the Sacramento and northern San Joaquin Valleys. This forest was more scattered in the San Joaquin watershed and on the floodplains of the Kings and Kaweah Rivers. Valley Oak Riparian Forest has been virtually eliminated by agriculture and fire wood harvesting. Only scant disturbed remnants of these natural communities remain in the Dinuba area. Agricultural and suburban developments have all but eliminated most historic natural communities.

The agricultural community surrounding the City of Dinuba consists of both large and small farms. Crops typically grown in the area generally include grapes, plums, stone fruit, oranges, and alfalfa.

Although not prime habitat, croplands in the area can provide a source of food, water, and shelter to both native and introduced wildlife species. The lack of hedgerows, shelter-belts, wind breaks, and natural vegetation buffers severely limits the habitat value of these man-made environs. In addition, agricultural practices such as herbicide and pesticide application, monocultural cropping, and intensive tillage further reduces the habitat value of these lands.

9.8 Special Status Species that Inhabit the Area

The above listed vegetation associations support a variety of wildlife and plant species and subspecies indigenous to California. The conversion of native and naturalized plant communities to urban land uses, agriculture, and industrial facilities has significantly reduced available wildlife habitat. As a result of this conversion, several species of both plants and animals have been extirpated from California, or their populations have declined significantly. As a result, the California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFWS) have listed some species as threatened or endangered. In addition, several species which are currently considered candidates for State or federal listing have been included.

For this report, the terms "species of concern" or "special status" species refers to those species viewed with special concern by the USFWS under the Federal Endangered Species Act, by CDFG under the California Endangered Species Act, and the California Natural Diversity Data Base (CNDDB)"Special Animals" (CDFG 1994a, 1994b, 1992). Attention is also given to those species given special status by various private conservation organizations. The assessment of effects to sensitive species includes those species listed under the following categories:

Federal Endangered - Listed as Endangered by the Federal Government.

Federal Threatened - Listed as Threatened by the Federal Government.

Federal Candidate - Candidate for federal listing (Taxa for which the U.S. Fish and Wildlife Service has sufficient biological information to support a proposal to list as Endangered or Threatened).

Federal Species of Concern - Federal Species of Concern (Taxa whose conservation status is of concern to the USFWS).

MBTA - Species protected under the auspices of the Migratory Bird Treaty Act.

State Endangered - Listed as Endangered by the State of California.

State Threatened - Listed as Threatened by the State of California.

State Rare - Plant species listed as Rare by the State of California and afforded protection under the Native Plant Protection Act.

State Species of Special Concern - California Department of Fish and Game Species of Special Concern.

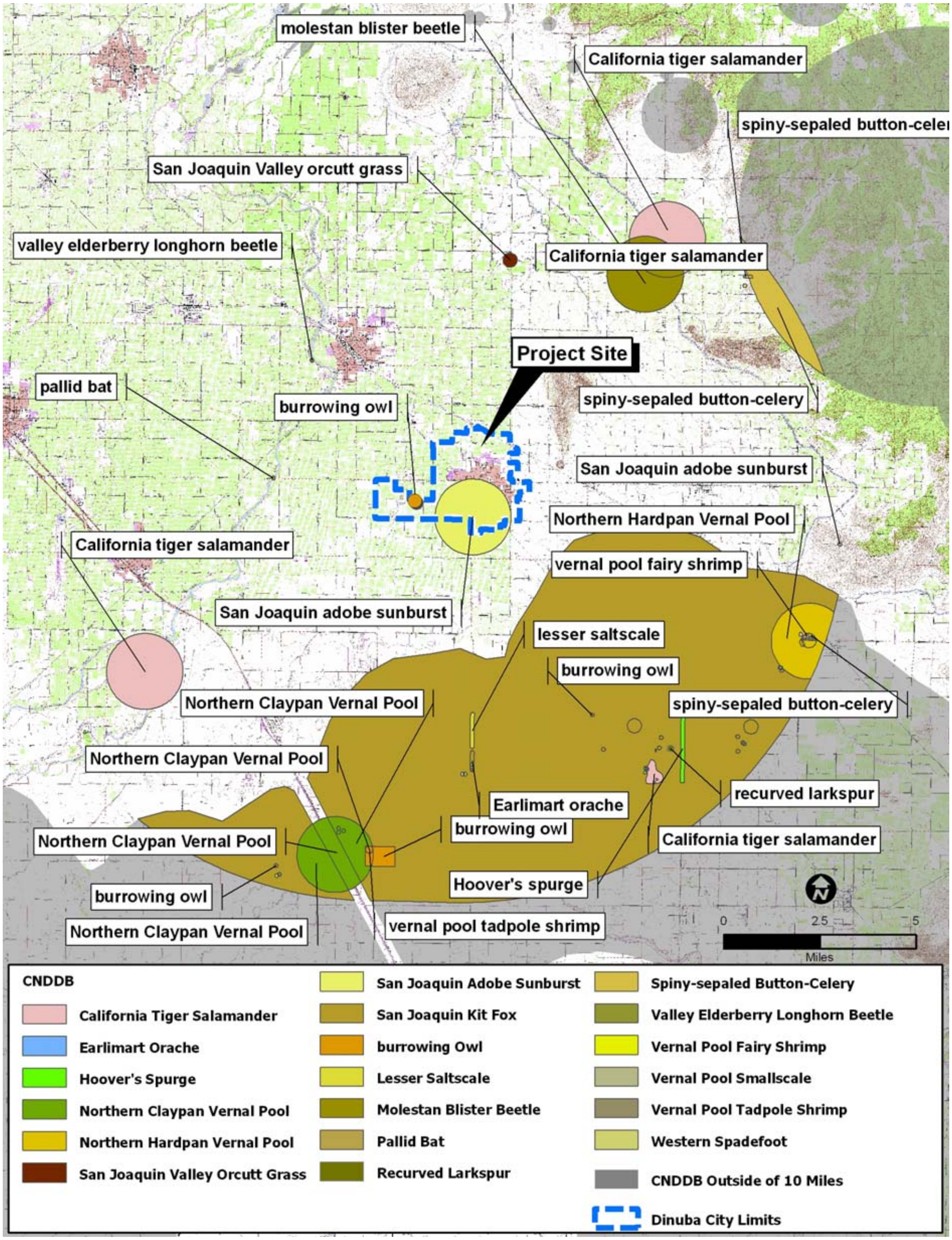
The San Joaquin Valley is an area of significant historical biological diversity. Existing data were reviewed to determine the historic occurrence of special status (i.e. sensitive) species and habitats in the area, including CNDDB records, literature records, and local environmental documents. The CNDDB was queried for the Reedley, Sanger, Wahtoke, Orange Cove North, Orange Cove South, Selma, Burris Park, Traver, and Monson USGS 7.5-Minute Quadrangles. A query of the California Native Plant Society's Electronic Inventory was conducted for the same quadrangles to provide information on additional plant species of concern that continued to occur in Dinuba and the surrounding vicinity. A species list was obtained from the U.S. Fish and Wildlife Service (USFWS) website for the Reedley USGS 7.5-minute quadrangle to provide information on additional special-status species that have the potential to occur in the vicinity of the proposed project. The locations of recent occurrences of these species in the Dinuba area are shown in Figure 9-5. A brief description of these species and their habitat is provided in Table 9-5.

9.9 Climate and Air Quality

CLIMATE

The climate of the Dinuba area is described as Mediterranean, which is typified by hot, dry summers and mild winters. Average monthly temperatures include a high of 99.0° F and a low of 62.0° F in July and a high of 55.0° F and a low of 37.0° F in January. It is not uncommon for maximum temperatures to exceed 100 degrees during the summer months; nor for temperatures to drop below freezing in the winter. The highest temperature ever recorded in Dinuba was 115° F in July of 1931. The lowest temperature of record was 18° F in January of 1937.

During the summer, a high pressure ridge develops over the Central Valley blocking the penetration of moist air from the Pacific. This high pressure system tends to weaken during the winter months thereby opening the door to Pacific storms. Approximately 90 percent of all rainfall in Dinuba occurs between November and April. Average rainfall measured at Dinuba is 12.27 inches per year. Rainfall can vary widely from year to year.



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SPECIAL STATUS SPECIES

Figure 9 - 5

Table 9-5
Special-Status Species with the Potential to Exist in the Dinuba Area

Common Name	Scientific Name	Status	Species Description	Habitat Requirements
brittlescale	*Atriplex depressa*	1B	An annual herb in the goosefoot family, blooms from May to October	This annual plant occurs in Chenopod scrubland, grassland, and alkali sink habitats, but it also is known to occur in wet areas.
lesser saltscale	*Atriplex minuscula*	1B	An annual herb in the goosefoot family, blooms from May to October	This annual plant occurs in Chenopod scrubland, grassland, and alkali sink habitats, but it also is known to occur in wet areas.
recurved larkspur	*Delphinium recurvatum*	1B	Perennial herb in the buttercup family, blooms from March to May	This plant is found in Chenopod scrublands, grasslands, and foothill woodland.
spiny-sepaled button-celery	*Eryngium spinosepalum*	1B	An annual or perennial herb in the carrot family, flowers in April or early May	Vernal pools, depressions within grasslands
Earlimart orache	*Atriplex erecticaulis*	1B	An annual herb in the goosefoot family, blooms from August to September	Grasslands with alkali conditions.
Hoover's spurge	*Chamaesyce hooveri*	FT,	Annual herb in the spurge family, blooms from July to August	Vernal pools.
San Joaquin Valley orcutt grass	*Orcuttia inaequalis*	FT, SE	Annual herb in the grass family, blooms from April to September	Vernal pools.
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	FT, SE	An annual herb in the sunflower family, blooms in March and April.	Adobe clay soils within foothill woodlands and grasslands.
Greene's tuctoria	*Tuctoria greenei*	FE, 1B	Annual herb in the grass family, blooms from May to September	Vernal pools
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	Coloration of the beetle is variable; the first pair of wings may vary from dark metallic green, with a bright red-orange border to a pattern of four oblong metallic green spots. The antennae are nearly as long as the body, extending forward from the head, thus the "longhorn" designation.	Elderberry shrubs in the Sacramento and San Joaquin Valleys

Common Name	Scientific Name	Status	Species Description	Habitat Requirements
vernal pool fairy shrimp	*Branchinecta lynchi*	FT	All fairy shrimp have delicate elongate bodies, large stalked compound eyes, and 11 pairs of swimming legs that also function as gills, absorbing dissolved oxygen as they are moved through the water. Fairy shrimp do not have a hard shell.	Vernal pools
vernal pool tadpole shrimp	*Lepidurus packardi*	FE		Vernal pools
Molestan blister beetle	*Lytta molesta*		Black beetle with orange markings on the thorax; ranges from 11-22 mm in length.	Vernal pools
western spadefoot	*Spea (=Scaphiopus) hammondii*	CSC	A relatively smooth-skinned species; eye is pale gold with vertical pupil; green or grey dorsum often with skin tubercles tipped in orange; whitish color on venter; wedge-shaped black spade on each hind foot.	This species is uncommon, but widespread in grassland, scrub, and chaparral habitat. It occurs in seasonally moist areas, including puddles, vernal pools, and roadside ditches.
California tiger salamander	*Ambystoma californiense*	FT	Has a large stocky body that is black with large, pale yellow spots, small eyes, a broad, rounded snout. Has tubercles on the underside of the front and hind feet	Vernal pools and some other wet areas
western pond turtle	*Emys (=Clemmys) marmorata*	CSC	Adult pond turtles range from 6-8 inches in length and weigh 1-2.4 pounds. Coloration ranges from brown to black on the upper shell, with lighter marbling visible on close examination. The lower shell is black and yellow. The head and legs are also dark with possible yellow markings (not stripes).	The western pond turtle occurs in streams, large rivers, and other bodies of slow-moving water. They are most common in areas with large rocks and boulders which they use as basking sites.
burrowing owl	*Athene cunicularia*	CSC, MBTA	The adult is boldly spotted and barred and has a round head, long legs, and stubby tail. When agitated the owl will characteristically bob and bow.	The burrowing owl occurs in open, dry grassland and shrub habitats throughout California.
Swainson's hawk	*Buteo swainsoni*	CT, MBTA	Large hawk with dark brown upperparts, white throat, rufous upper breast, and pale buff underparts. Tail is gray with faint bars, dark terminal band, and white trailing edge.	This species nests in riparian forests and other forested areas. It will roost in a variety of trees and forage widely over forests, grasslands, and shrublands. It is easily disturbed by human activities.

Common Name	Scientific Name	Status	Species Description	Habitat Requirements
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	CE, MBTA	Medium-sized cuckoo with gray-brown upperparts and white underparts. Eye-rings are pale yellow. Bill is mostly yellow. Wings are gray-brown with rufous primaries. Tail is long and has white-spotted black edges. Sexes are similar.	Riparian woodland; preferably with dense sub-canopy layer dominated by willows.
Loggerhead shrike	*Lanius ludovicianus*	CSC, MBTA	Medium-sized cuckoo with gray-brown upperparts and white underparts. Eye-rings are pale yellow. Bill is mostly yellow. Wings are gray-brown with rufous primaries. Tail is long and has white-spotted black edges. Sexes are similar.	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, FT	The smallest of the arid land foxes; characterized by its large ears and distinctive black tip on its tail.	The San Joaquin kit fox occurs in open, dry grassland, shrub and open forest habitats on the floor of the San Joaquin Valley and surrounding foothills.
pallid bat	*Antrozous pallidus*	CSC	A large bat. Creamy to beige above; nearly white below. Big ears, separated at base. Wings and interfemoral membrane essentially naked.	This bat is an uncommon resident in San Joaquin Valley and Coastal Ranges. It occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban. It roosts in crevices in cliff faces, high buildings, trees, and tunnels.

Sources:
California Department of Fish and Game. 2005. California Natural Diversity Data Base, California Department of Fish and Game, Sacramento, CA.

California Native Plant Society (CNPS). 2005. Inventory of Rare and Endangered Plants (online edition, v6-05b 4-11-05). Rare Plant Scientific Advisory Committee. California Native Plant Society. Sacramento, CA.

Abbreviations:

FE	Federal Endangered Species
FT	Federal Threatened Species
MBTA	Species Protected Under the Auspices of the Migratory Bird treaty Act
CE	California Endangered Species
CT	California Threatened Species
CR	California Rare Species Afforded Protection Under the Native Plant Protection Act
CSC	California Department of Fish and Game Species of Special Concern
1B	California Native Plant Society List 1B Species-Plants Categorized as Rare, Threatened, or Endangered in California and Elsewhere.

Radiation (Tule) fog is common in the winter, and may persist for days. Winds are predominantly up-valley (from the north) in all seasons, but more so in the summer and spring months. Winds in the fall and winter are generally lighter and more variable in direction but generally blow towards the south and southeast.

REGULATORY FRAMEWORK

The Federal Clean Air Act of 1970 (FCAA) was the first major piece of federal air quality regulation. Amended in 1977 and 1990, the Clear Air Act required the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for several pollutants. These standards are set by law at levels that protect public health and welfare, with an adequate margin of safety. Areas exceeding the federal standard more than two times per year are designated "non-attainment" areas under the Clean Air Act, and as such are subject to more stringent planning and pollution control requirements.

Under the 1990 amendment to the Clear Air Act, non-attainment areas are divided into five categories depending on future dates identified for meeting the standards. "Marginal" or "moderate" violators only slightly exceed the NAAQS, whereas "serious," "severe," or "extreme" violators exceed the standards by a much higher margin. Marginal areas are required to do little beyond what they are already doing to attain clean air, but areas designated "moderate" through "extreme" must adopt gradually tighter regulations. Areas designated "moderate" or worse for ozone non-attainment are required to show a three percent per year reduction in emissions of volatile organic compounds.

Areas close to meeting Carbon Monoxide (CO) standards are required to start a wintertime oxygenated fuels program and to correct problems with existing vehicle inspection programs. Areas with higher levels of CO must also start an enhanced vehicle inspection program, and those areas with the highest CO levels must adopt transportation measures.

Table 9-6 shows the California Air Resources Board's estimated emissions inventory for the year 2005 in tons per day for Tulare County. Carbon Monoxide (CO) was by far the largest category of pollutant in the County, and area-wide sources such as solvent evaporation and miscellaneous processes accounted for 56.06 percent of the 1,026.85 tons per day emitted. Natural sources– emissions produced by plants and animals (biogenic), humans and human activity (anthropogenic), and wildfires– accounted for 28.81 percent of total CO. 100 percent of the natural source carbon monoxide was produced by wildfires. Mobile sources such as on-road motor vehicles and other mobile sources accounted for about 15 percent of carbon monoxide. Stationary sources equaled less than one percent.

The precursors of ozone, ROG and NOX, were mostly made up of mobile, natural, and area-wide sources. ROG was a much bigger contributor to ozone precursors than NOX. 166.76 tons per day of ROG was produced in 2005, compared to 68.78 tons of NOX. 49.25 percent of the ROG was from natural sources, 37.93 percent was from area-wide sources (mostly miscellaneous processes), and 10.02 percent was from mobile sources. 61.40 percent of the NOX was from mobile sources, 19.35 percent was from area-wide sources, 13.01 percent was from natural sources and 6.24 percent was from stationary sources. 38.67 percent of ozone precursors were from natural sources, 32.51 percent were from area-wide sources, and 25.02 percent were from mobile sources. 67.47 percent of the natural source ozone precursors were from biogenic sources (animals or animal byproducts) and 32.53 percent were from wildfires.

73.02 percent of all particulate matter was produced by area-wide sources and 23.30 percent was produced by wildfires. PM_{10} and $PM_{2.5}$ are sometimes-overlapping subsets of PM, and therefore add up to more than total PM. PM_{10} is all PM smaller than ten microns in diameter and $PM_{2.5}$ is all PM smaller than 2.5 microns in diameter.

The FCAA requires an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures California will use to attain the NAAQS. The Federal Clean Air Act Amendments of 1990 require states containing areas that violate the NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is to be periodically modified to reflect the latest emissions inventories, planning documents, rule and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the FCAA and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the non-attainment area and may impose additional control measures.

Table 9-6
2005 Emission Inventory
Tons Per Day for Tulare County

	ROG	% of Grand Total	NOX	% of Grand Total	ROG + NOX	% of Grand Total	PM	% of Grand Total	PM_{10}	% of Grand Total	$PM_{2.5}$	% of Grand Total	CO	% of Grand Total	SOX	% of Grand Total
Stationary Sources																
Fuel Combustion	0.71	0.43	4.04	5.87	4.75	2.02	0.32	0.17	0.31	0.25	0.31	0.34	2.34	0.23	0.46	5.95
Waste Disposal	0.06	0.04	0.01	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.26
Cleaning and Surface Coatings	1.79	1.07	0.00	0.0	1.79	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Petroleum Production and Marketing	1.09	0.65	0.00	0.00	1.09	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Processes	1.01	0.61	0.24	0.35	1.25	0.53	4.56	2.49	3.22	2.56	2.50	2.72	0.04	0.00	0.09	1.16
Total Stationary Sources	4.66	2.79	4.29	6.24	8.95	3.80	4.88	2.66	3.53	2.81	2.81	3.05	2.38	0.23	0.57	7.37
Area-Wide Sources																
Solvent Evaporation	7.00	4.20	0.00	0.00	7.00	2.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous Processes	56.26	33.74	13.31	19.35	69.57	29.54	133.81	73.02	90.42	71.94	62.38	67.76	575.70	56.06	3.77	48.77
Total Area-Wide Sources	63.26	37.93	13.31	19.35	76.57	32.51	133.81	73.02	90.42	71.94	62.38	67.76	575.70	56.06	3.77	48.77
Mobile Sources																
On-Road Motor Vehicles	11.05	6.63	24.63	35.81	35.68	15.15	0.72	0.39	0.71	0.56	0.50	0.54	114.66	11.17	0.19	2.46
Other Mobile Sources	5.66	3.39	17.60	25.59	23.26	9.88	1.15	0.63	1.14	0.91	1.01	1.10	38.26	3.73	0.44	5.69
Total Mobile Sources	16.71	10.02	42.23	61.40	58.94	25.02	1.87	1.02	1.85	1.47	1.51	1.64	152.92	14.89	0.63	8.15
Natural Sources																
Biogenic Sources	61.45	36.85	0.00	0.00	61.45	26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Geogenic Sources	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wildfires	20.68	12.40	8.95	13.01	29.63	12.58	42.70	23.30	29.89	23.78	25.36	27.55	295.85	28.81	2.76	35.71
Total Natural Sources	82.13	49.25	8.95	13.01	91.08	38.67	42.70	23.30	29.89	23.78	25.36	27.55	295.85	28.81	2.76	35.71
Grand Total For Tulare County	**166.76**	**100.0**	**68.78**	**100.0**	**235.54**	**100.0**	**183.26**	**100.0**	**125.69**	**100.0**	**92.06**	**100.0**	**1,026.85**	**100.0**	**7.73**	**100.0**

Source: California Air Resources Board
Note: Percentages may not equal 100 due to rounding

STATE REGULATIONS

The California Air Resources Board (CARB) is responsible for enforcing the federally required SIP in an effort to achieve and maintain the national ambient air quality standards. SIP is the plan prepared by states and submitted to U.S. EPA describing how each federal nonattainment area will attain and maintain national ambient standards. SIPs include the technical foundation for understanding the air quality (e.g. emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The SIP incorporates the individual nonattainment plans for air quality districts. In addition, CARB has established State Ambient Air Quality Standards for the Federal "criteria" pollutants as well as for other pollutants for which there are no corresponding Federal standards. CARB is responsible for determining air basin attainment designations in California, and has the authority over mobile sources of pollutants. As of March 1, 2006, the Air District also implements Indirect Source Rule 9510 for projects that exceed two tons of PM_{10} per year. Dust Control Plans are also required.

Ambient Air Quality Standards. Under the federal *Clean Air Act, 42 U.S.C. Section 7401 et. seq. (1970) (as amended 1990)*, the federal government originally established National Ambient Air Quality Standards ("NAAQS") for "criteria" pollutants. Both the U.S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for such criteria pollutants. These ambient air quality standards are maximum levels of contaminants, which are intended to represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The air quality criteria pollutants under state and federal law include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}, fine particulate matter ($PM_{2.5}$), lead, and hydrogen sulfide.

The federal and California state ambient air quality standards are summarized in Table 9-7. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes are intended to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10}.

The U.S. Environmental Protection Agency in 1997 adopted new national air quality standards for ground-level ozone and for fine particulate matter. The existing one-hour ozone standard of 0.12 ppm was phased out and replaced by an eight-hour standard of 0.08 ppm. New national standards for fine Particulate Matter (diameter 2.5 microns or less) have also been established for 24-hour and annual averaging periods. The current PM_{10} standards were retained, but the method and form for determining compliance with the standards were revised. Additionally, a $PM_{2.5}$ state standard was adopted effective July 5, 2003. The San Joaquin Valley is non-attainment for both the State and Federal $PM_{2.5}$ standards.

Source: California Environmental Protection Agency
Air Resources Board

Quad Knopf

CALIFORNIA AIR BASINS

Figure 9 - 6

Table 9-7
State and Federal Ambient Air Quality Standards
Ozone, Carbon Monoxide, PM_{10}, and Sulfur Dioxide

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--[8]	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)*		0.08 ppm (157 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		50 µg/m^3		
Fine Particulate Matter (PM_{10} and $PM_{2.5}$)	24 Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg /m^3)		0.14 ppm (365 µg/m^3)	—	
	1 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.25 ppm (655 µg /m^3)		—	—	—

NOTES:

1) California standards for ozone, carbon monoxide (except Lake Tahoe) and suspended particulate matter PM_{10}, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2) National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3) Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4) Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7) Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8) The Federal One Hour National Ambient Air Quality Standard was revoked on June 15, 2005.

SOURCE: State of California, Air Resources Board

Regional Air Quality Plans. Federal and state air quality laws require identification of areas not meeting the ambient air quality standards. These areas must develop regional air quality plans to eventually attain the standards. Under both the federal and state Clean Air Acts the San Joaquin Valley Air Basin is a non-attainment area (standards have not been attained) for ozone, PM_{10} and $PM_{2.5}$. The air basin is either attainment or unclassified for other ambient standards.

To meet federal Clean Air Act requirements, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is working on an 8-hour Ozone Attainment Demonstration Plan, which will be adopted in 2007. In June 2003, the District adopted the "2003 PM_{10} Plan". The PM_{10} Plan has been updated for 2006 and was adopted by the Air District in February 2006. The San Joaquin Valley Air Pollution Control District, with respect to ozone, requested that the EPA reclassify the Valley as an "extreme non-attainment" area for the federal one-hour ozone standard. The Agency announced on February 13, 2004 that it would make the requested reclassification. This gives the Valley to 2010 to meet this federal standard. A new plan for meeting the standard was submitted by the District to the EPA in 2004. This plan is currently being amended for 2005.

Current Air Quality. According to SJVAPCD's Planning Division, the estimated population within the SJVAB is nearly 3.2 million persons. The SJVAB has one of the most severe air pollution problems in the State. The American Lung Association ranks the Visalia-Tulare-Porterville area which includes the City of Dinuba as having the fourth highest ozone pollution level in the nation. The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of pollutants from the basin. Inversion layers are formed in the San Joaquin Valley air basin throughout the year. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor (California Air Resources Board, 1974).

The California Air Resources Board operates a series of monitoring stations, including a monitoring site in downtown Visalia. The San Joaquin Valley Air Pollution Control District also operates monitoring sites in Kings County (Corcoran and Hanford) that are relatively close to the project site. The Visalia Air Monitoring Station is located approximately 30 miles to the southeast, the Corcoran station 50 miles south and the Hanford station 30 miles southwest of the project site. A summary of air quality data from these monitoring sites is shown in Table 9-8.

Table 9-8
Ambient Air Quality

	Days Exceeding Standards												
		Corcoran[(a)]				Hanford					Visalia		
Year	State PM_{10}[1]	Federal PM_{10}[1]	Federal $PM_{2.5}$	State Ozone	Federal Ozone	State PM_{10}[1]	Federal PM_{10}[1]	State Ozone	Federal Ozone	State PM_{10}[1]	Federal PM_{10}[1]	Federal $PM_{2.5}$
1989	**186**	**35**	**-**	**13**	**1**	**198**	**30**	**69**	**10**	**228**	**24**	**-**
1990	**160**	**13**	**-**	**4**	**--**	**144**	**18**	**37**	**1**	**240**	**6**	**-**
1991	**214**	**28**	**-**	**15**	**--**	**174**	**36**	**31**	**1**	**198**	**6**	**-**
1992	**179**	**7**	**-**	**1**	**--**	**150**	**0**	**23**	**2**	**150**	**0**	**-**
1993	**167**	**18**	**-**	**2**	**--**	**66**	**0**	**60**	**9**	**180**	**0**	**-**
1994	**154**	**0**	**-**	**9**	**--**	**156**	**0**	**52**	**10**	**156**	**0**	**-**
1995	**135**	**11**	**-**	**2**	**--**	**150**	**6**	**48**	**2**	**168**	**0**	**-**
1996	**36**	**0**	**-**	**78**	**8**	**108**	**0**	**53**	**4**	**150**	**0**	**-**
1997	**86**	**6**	**-**	**23**	**2**	**102**	**0**	**24**	**1**	**66**	**0**	**-**
1998	**61**	**2**	**-**	**27**	**3**	**90**	**0**	**54**	**6**	**102**	**6**	**-**
1999	**132**	**9**	**0**	**28**	**2**	**102**	**0**	**52**	**1**	**174**	**0**	**12**
2000	**120**	**0**	**1**	**48**	**0**	**99**	**1**	**46**	**1**	**180**	**0**	**8**
2001	**126**	**8**	**6**	**21**	**1**	**156**	**14**	**36**	**2**	**162**	**0**	**4**
2002	**165**	**1**	**2**	**29**	**1**	**172**	**1**	**35**	**1**	**178**	**0**	**5**
2003	**133**	**0**	**0**	**19**	**0**	**149**	**0**	**43**	**0**	**108**	**0**	**0**
2004	**88**	**3**	**0**	**7**	**0**	**101**	**0**	**17**	**1**	**91**	**0**	**0**

Source: Air Resources Board Aerometric Data Analysis and Management System (ADAM)

(1) Measurements of PM_{10} are made every sixth day. Data is the estimated number of days that the standard would have been exceeded had measurements been collected every day.

(a) Corcoran Station does not monitor ozone pollutants.

Although the San Joaquin Valley Air Basin is often in violation of state and federal ozone ambient air quality standards and PM_{10} thresholds, data collected over the past ten years by the California Air Resources Board shows that air quality in the Valley is, in general, improving. However, the federal ozone attainment designation of the air basin was officially changed from ‘serious’ to ‘severe’ on December 10, 2001. Under this designation, the San Joaquin Valley air basin was required to meet the federal ozone standards by November 15, 2005. The SJVAPCD prepared the 2002 and 2005 Rate of Progress Plan as required by this designation change, but the Plan concluded that the actions identified would not fulfill the EPA's requirements by November 15, 2005. Failure to meet the attainment deadline could have resulted in increased offset requirements for new industrial sources and potential sanctions, including withholding of federal grants for capacity-expanding transportation projects and new transportation plans, and ultimately terminates all federally funded transportation projects in the District, except safety projects. The District has now received approval of Federal standard reclassification to 'extreme' nonattainment, which delays the attainment date to 2010, but results in even stricter controls for stationary sources of pollutants.

PM_{10} concentrations in this area of the air basin have been trending downward slowly since monitoring began in 1989. The calculated number of days at the Visalia station exceeding the national standard was 24 in 1989 and none in 2004. The calculated number of days of exceedance of the state standard was 228 in 1989 and 91 in 2004. The air basin is designated as a 'serious' nonattainment area for federal PM_{10} ambient air quality standards. Under this designation, the air district is required to meet the 24-hour and annual PM_{10} standards by 2010. Failure to meet the attainment deadline could, again, result in increased offset requirements for new industrial sources and potential sanctions, including withholding of federal grants for capacity-expanding transportation projects and new transportation plans, and could ultimately stop all federally funded transportation projects in the District, except safety projects.

CRITERIA POLLUTANTS

Table 9-9 summarizes pollutants, their sources, effects (including health effects), and means of prevention and control. In addition to the table, this section provides further analysis of key pollutants and their health affects as they apply to the San Joaquin Valley.

Ozone, (O_3), is not emitted directly into the environment, but is generated from complex chemical reactions that occur in the presence of sunlight. One of the primary components of the chemical reactions is nitrogen oxide (NOx), which is referred to as an ozone precursor. NOx generators in the San Joaquin Valley include mobile sources, solvents and fuel combustion. Another ozone precursor is reactive organic gases (ROGs), which are generated by anaerobic decomposition of organic substances such as manure and as fossil fuel exhaust components.

Ozone exposure causes eye irritation and damage to lung tissue in humans. It accelerates deterioration of paints, finishes, rubber products, plastics, and fabrics. The San Joaquin Valley Air Basin is currently in non-attainment (the Federal, one-hour, ozone attainment level is classified extreme) for the Federal and State standards for ozone; the Visalia area, for example, exceeded State standards for ozone concentrations in ambient surface atmosphere on 43 days during 2003.

Table 9-9
Air Pollution Sources, Effects, and Control

Pollutant	Sources	Effects	Prevention and Control
Ozone (O_3)	Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil);solvents; petroleum processing and storage; and pesticides	Breathing difficulties, lung tissue damage, damage to rubber and some plastics.	Reduce motor vehicle reactive organic gas (ROG) and nitrogen oxide emissions through emissions standards, reformulated fuels, inspections programs, and reduced vehicle use. Limit ROG emissions from commercial operations and consumer products. Limit ROG and NOx emissions from industrial sources such as power plants and refineries. Conserve energy
Respirable Particulate Matter (PM_{10})	Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants (acid rain, NOx, SOx, organics). Incomplete combustion of any fuel.	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling.	Control dust sources, industrial particulate emissions, wood burning stoves and fireplaces. Reduce secondary pollutants which react to form PM_{10}. Conserve energy
Fine Particulate Matter ($PM_{2.5}$)	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NOx, SOx, organics).	Increases respiratory disease, lung damage, cancer, premature death; reduced visibility; surface soiling.	Reduce combustion emissions from motor vehicles, equipment, industries, and agriculture and residential burning. Precursor controls, like those for ozone, reduce fine particle formation in the atmosphere.
Carbon Monoxide (CO)	Any source that burns fuel such as automobiles, trucks, heavy construction equipment and farming equipment, residential heating.	Chest pain in heart patients, headaches, reduced mental alertness.	Control motor vehicle and industrial emissions. Use oxygenated gasoline during winter months. Conserve energy.
Nitrogen Dioxide (NO_2)	See Carbon Monoxide	Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain.	Control motor vehicle and industrial combustion emissions. Conserve energy.
Lead	Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint	Learning disabilities, brain and kidney damage	Control metal smelters, No lead in gasoline. Replace leaded paint with non-lead substitutes.
Sulfur Dioxide (SO_2)	Coal or oil burning power plants and industries, refineries, diesel engines	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Reduce the use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy.
Visibility Reducing Particles	See $PM_{2.5}$	Reduces visibility (e.g., obscures mountains and other scenery), reduced airport safety, lower real estate value, discourages tourism.	See $PM_{2.5}$
Sulfates	Produced by the reaction in the air of SO_2 (see SO_2 sources), a component of acid rain	Breathing difficulties, aggravates asthma, reduced visibility.	See SO_2
Hydrogen Sulfide	Geothermal power plants, petroleum production and refining, sewer gas	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations).	Control emissions from geothermal power plants, petroleum production and refining, sewers, sewage treatment plants

Carbon monoxide, (CO), concentrations are seasonal, with the highest concentrations occurring in the winter. This may be due to the fact that automobiles create more carbon monoxide in colder weather and partly due to the very stable atmospheric conditions that exist on cold winter evenings when winds are calm. Concentrations typically are highest during stagnant air periods within the period November through January.

Nitrogen dioxide, (NO_2), is a reddish-brown gas that discolors the air, formed during combustion. Its health effects include increased risk of acute and chronic respiratory disease. Major sources are automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants. The SJVAPCD is an attainment area for the state/federal nitrogen dioxide standards. It is an important pollutant, however, because nitrogen dioxide is one of several oxides of nitrogen (NOx) that participate in the formation of photochemical ozone.

Respirable particulate matter, (PM_{10}), evaluated herein with respect to this project, is released directly into the atmosphere by stationary and mobile sources. PM_{10} consists of a wide range of solid and liquid particles, including smoke, dust, aerosols, and metallic oxides. Major sources of PM_{10} include vehicles, power generation, industrial processing, wood burning, road dust, construction/farming activities, and fugitive windblown dust. The 1995 PM_{10} emission inventory for the San Joaquin Valley Air Basin indicated that fugitive windblown dust, farming operations and road dust were the three leading sources of PM_{10} (SJVAPCD, 2002). The San Joaquin Valley Air Basin is currently in non-attainment (Federally classified as serious) for the Federal and State PM_{10} standards. The effects of high concentrations on humans include aggravation of chronic disease and heart/lung disease symptoms. Non-health effects include reduced visibility and soiling of surfaces.

Fine particulate matter, **(**$PM_{2.5}$), like PM_{10}, (similarly evaluated with respect to this Plan Update), is also released directly into the atmosphere by stationary and mobile sources. It is also created in the atmosphere by photochemical and chemical processes acting on precursor pollutants. Sources of $PM_{2.5}$, the fine fraction of PM_{10s} include vehicles, power generation, industrial processes, and wood burning. The health effects of $PM_{2.5}$ are similar to those of PM_{10}; they can impair proper lung function and may contribute to the development of chronic bronchitis. They are a health concern because they easily reach the deepest recesses of the lungs. Scientific studies have linked particulate matter (alone or in combination with other air pollutants) with a series of health problems, including premature death, respiratory related hospital admissions or emergency room visits, aggravated asthma, chronic bronchitis, decrease lung functions, and work and school absences. Those who are most at risk are the elderly, individuals with preexisting heart and lung disease, children, and asthmatics and asthmatic children.

Regular monitoring of $PM_{2.5}$ in the atmosphere in California began in early 1999. The available data show that the highest 24-hour and annual average $PM_{2.5}$ concentrations are found in the South Coast Air Basin and San Joaquin Valley Air Basin. On average, the highest 24-hour concentrations in 1999 and 2000 occurred in November, December and January, while the lowest concentrations occurred between March and August. This seasonality was most pronounced in the San Joaquin Valley Air Basin, where the December-January concentrations were on the order of 4 to 5 times greater that those for March through August. The highest

24-hour concentration measured at the monitoring site closest to the project site (Visalia) was 123.0 micrograms per cubic meter (CARB, 2001).

In July 1997, the EPA adopted an annual $PM_{2.5}$ standard set at 15 µg/m^3 and a new 24-hour $PM_{2.5}$ standard set at 65 µg/m^3. On May 3, 2002, the California Air Resources Board (CARB) staff recommended establishing an annual standard for $PM_{2.5}$ micrometers in diameter and smaller. The new state standard became effective on July 5, 2003.

Measured levels of $PM_{2.5}$ at the closest monitoring stations (Visalia and Corcoran) show that the state and federal standards have been frequently exceeded in the project vicinity. The highest 24-hour concentrations at these two stations during the period 1999-2003 were 123.0 and 123.2 micrograms per cubic meter, respectively. The San Joaquin Valley Air Basin has been designated nonattainment for $PM_{2.5}$ for both the state and federal standards.

HEALTH EFFECTS

A summary of health effects of air pollutants follows:

Ozone

Reactive organic gasses (ROGs) and oxides of nitrogen (NOx) are precursors of ozone formation. Ozone has been described as having the following health effects:

Ambient tropospheric ozone pollution at sufficient levels can cause upper and lower respiratory irritative symptoms, restrictive and obstructive spirometric changes, and increased responsiveness to methacholine and allergen bronchoprovocation. In epidemiologic studies, ozone has been associated with increased de novo development of chronic respiratory illness and increased incidence of emergency department visits and hospitalizations for asthma and respiratory disease. Animal studies suggest increased susceptibility to bacterial infection. Some evidence supports an association between ambient ozone exposure and increased daily mortality rates. Ozone induced illness is probably very infrequently recognized as such, but may be suspected especially during formation and especially persistence of relatively stagnant hot ambient air masses. Since bright sunlight is present driving the chemical reactions, health effects from heat exposure are concomitant.

Great inter-individual variability exists in ozone responsiveness, with a few individuals suffering clinically important reactions, most persons experiencing mild responses, with the remainder little affected. Persons at risk include persons with asthma or chronic lung disease, and those who are active outdoors for prolonged periods. Examples of this latter group are athletes, children at play, and outdoor workers such as laborers, policemen and firemen, farmers, linemen, loading dock workers, construction workers, and foresters. Ozone related spirometric compromise is more marked in individuals with chronic obstructive lung disease, than in otherwise healthy smokers. Increasing evidence suggests that asthmatics, after exposure to ozone, have increased bronchial reactivity to subsequent allergens. Some non-asthmatics show a similar pattern (Dr. Dickey, J.H., Health M.D., Greater Boston PSR; Effects of Air Pollution).

Recent studies (American Lung Association, State of the Air, 2001) have further validated and documented the adverse health effects of ozone with respect to respiratory disease, and the increase in such effects with respect to asthmatics, children and the elderly.

Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)

Epidemiologic studies associate PM_{10} with adverse health effects. However, more recent epidemiologic studies have contributed to understanding the size specificity of health effects, and have increasingly implicated the gasses and smaller particles as the more relevant components of hazardous particulate exposure.

Acute symptoms and signs include restricted activity (including days lost from school and work due to respiratory illness), respiratory illnesses, and exacerbations of asthma and pulmonary diseases. Clinical observations include declines in lung function, increased asthma medication use, increased emergency department visits, increased hospitalization, and increased cardiac and respiratory mortality. Although asthmatics seem to increase bronchodilator use during acid aerosol air pollution episodes, they see relatively little improvement in their peak flow meter recordings. Groups at particular risk of acute illness include the elderly (65 years), and persons with chronic heart and lung diseases.

Clinical associations with chronic particulate pollution observed in epidemiologic studies include bronchitis, chronic cough, respiratory illness, pulmonary diseases and asthma exacerbations, decreased longevity, and lung cancer (Dickey, J.H., Health Effects of Air Pollution).

Testimony before the Committee on Science, House of Representatives, on May 8, 2002 by a series of expert witnesses (Mr. Daniel S. Greenbaum, President, Health Effects Institute; Dr. Ronald E. Wyzga, Technical Executive, Electric Power Research Institute, and Dr. Joel Schwarz, Associate Professor of Environmental Epidemiology, Harvard School of Public Health) confirmed the findings described in Dr. Dickey's excerpted statement above.

Nitrogen Dioxide (NO_2)

In addition to being a precursor to ozone formation, high concentrations of nitrogen dioxide have been identified as having direct health effects.

Very high concentrations are very dangerous, causing lung injury, fatal pulmonary edema, and bronchopneumonia. Lower concentrations cause impaired mucociliary clearance, particle transport, macrophage function, and local immunity . . . (and) have been associated with a significant increase in acute respiratory infections, sore throat, colds and absences from school… While ambient NO_2 levels have been associated in epidemiologic meta-analyses with declines in spirometry and cardio respiratory events, NO_2 is less clearly implicated than particulate, sulfur dioxide, and ozone (Dickey, J.H., Health Effects of Air Pollution).

Sulfur Dioxide

Sulfur dioxide not only has a bad odor, it can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. Children, the elderly, those with chronic lung disease, and asthmatics are especially susceptible to these effects. Sulfur dioxide can also:

- Immediately irritate the lung and throat at concentrations greater than 6 parts per million (ppm) in many people.

- Impair the respiratory system's defenses against foreign particles and bacteria, when exposed to concentrations less than 6 ppm for longer time periods.

- Apparently enhance the harmful effects of ozone. (Combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing.)

Sulfur dioxide tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. (In the 1950s and 1960s, thousands of excess deaths occurred in areas where SO_2 concentrations exceeded 1 ppm for a few days and other pollutants were also high.) Effects are more pronounced among mouth breathers, e.g., people who are exercising or who have head colds. These effects include:

- Health problems, such as episodes of bronchitis requiring hospitalization associated with lower-level acid concentrations.

- Self-reported respiratory conditions, such as chronic cough and difficult breathing, associated with acid aerosol concentrations. (Asthmatic individuals are especially susceptible to these effects. The elderly and those with chronic respiratory conditions may also be affected at lower concentrations than the general population.)

- Increased respiratory tract infections, associated with longer term, lower-level exposures to SO2 and acid aerosols.

- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities, due to long-term exposure.

Source: Wisconsin Department of Natural Resources:
http://www.dnr.state.wi.us/org/aw/air/health/sulfurdiox.htm

Carbon Monoxide

Carbon monoxide displaces oxygen in red blood cells, which reduces the amount of oxygen that human cells need for respiration. Exposure to CO can result in fatigue, angina, reduced visual perception, reduced dexterity, and death. The elderly, young children, and people with pre-existing respiratory conditions are particularly sensitive to carbon monoxide pollution. Carbon monoxide is extremely deadly in an enclosed space, such as a garage or bedroom.

Source: Coalition for Clean Air:
http://www.coalitionforcleanair.org/air-pollution-pollutants.html#Carbon

Sensitive Receptors. One of the criteria for significance includes potential impacts on sensitive receptors. The SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), Section 3, January 10, 2002 defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons are present and where there is a reasonable expectation of continuous human exposure to pollutants.

Sensitive receptors normally refer to land uses with heightened sensitivity to localized, rather than regional, pollutants. Examples include emissions of criteria or toxic air pollutants that have health effects (PM_{10}, ammonia, H_2S surface dioxide), and to a lesser extent odors or odorous compounds such as ammonia and H_2S. Sensitive receptors would not be directly affected by emissions of regional pollutants such as ozone precursors (ROG and NOx).

The term "sensitive receptor" does not have a distance associated with it; its "sensitivity" is a function of the land use and not necessarily the presence or lack of nearby sources. SJVAPCD CEQA guidance does offer some "screening" distances between various sources and sensitive receptors, but these are useful only for determining when no analysis is required, not for determining significance of impacts.

Possible Receptors. There are many single family and multiple family residences within one mile of the project site. The nearest homes are adjacent to the site to the north and northwest, with a developed single-family neighborhood directly across Huntsville Avenue to the north of the project site. In addition, Immanuel School is within a one-mile radius of the site.

CHAPTER TEN

SAFETY

CHAPTER TEN - SAFETY

10.1 Identification of Geologic and Seismic Hazards

The San Joaquin Valley is a geologic structural trough with its axis oriented northwest-southeast. The Valley is bounded to the east by the granitic and metamorphic rocks of the Sierra Nevada, and to the west by the folded and faulted sedimentary, volcanic, and metamorphic rocks of the Coast Ranges. The crystalline rocks of the Sierra Nevada extend westward beneath the Valley. These rocks are overlain by a westward-thickening wedge of marine and continental deposit. The marine deposits are siltstone, shale, and sandstones. The thicker continental sediments overlie the marine deposits. These consist of unconsolidated alluvium, lacustrine, and flood plain sediments derived from the Sierra Nevada.

Earthquakes originate as movement or slippage occurring along an active fault. These movements generate shock waves that result in ground shaking. Structures of all types, if not designed or constructed to withstand ground shaking, may suffer severe damage or collapse. Likewise, some slopes will collapse due to the soil or geological characteristics resulting in hazard both in terms of collapse of structures located thereon, or collapse of structures within the path of resulting land slides.

Dinuba lies within a relatively seismically quite area. Neither the City of Dinuba nor Tulare County are on the State Geological Survey's list of Cities and Counties affected by Alquist Priolo Earthquake Fault Zones as of May 1, 1999 (California Geological Survey, May 2006). This means these areas are not subject to surface fault rupture. The nearest faults are the Sierra Nevada Fault Zone on the east side of the Sierra Nevada Mountains about 60 miles to the east, the San Joaquin fault about 75 miles to the west/northwest near Los Banos, and the San Andreas Fault about 75 miles to the southwest near Parkfield. The Coalinga area, about 60 miles to the west-southwest of Dinuba experienced an earthquake measuring 6.7 on the Richter scale (Rs) in 1983 on a previously unknown "blind" thrust fault. A "blind" fault is one that does not produce a surface rupture and therefore shows no evidence of its presence at the surface.

The Five Counties Seismic Safety Element places Dinuba within the V1 Seismic Zone, characterized by a relatively thick section of sedimentary rock overlying a granitic basement. Primary hazards due to groundshaking are "low" because of the distance from seismic faults. Secondary hazards are as follows: landslides, minimal; subsidence/settlement, low to moderate; liquefaction, low; seiching minimal. The Seismic Safety Element states that the Uniform Building Code, Zone II building standards should be adequate for normal facilities.

New buildings in Dinuba are constructed to prevent loss of life as a result of an earthquake. Older buildings, however, especially un-reinforced masonry buildings, could collapse causing injury and loss of life. According to a report in 1979 to the California Seismic Safety Committee, a building should be considered hazardous to life in the event of an earthquake if the building:

A. Was constructed prior to the adoption and enforcement of local building codes requiring the earthquake resistant design of buildings;

B. Is constructed of un-reinforced masonry;

C. Lacks an effective system for resisting lateral forces; and

D. Exhibits <u>any one</u> of the following characteristics:

   1. Has exterior parapets and ornamentation that may fall on a public way;

   2. Is constructed of un-reinforced masonry;

   3. Has exterior walls of un-reinforced masonry that are not anchored to the floors or roof;

   4. Has sheathing or roofs that is not capable of withstanding lateral loads or uniformly transferring horizontal loads to walls; or

   5. Has large openings in walls that may result in damage due to torsional (twisting) forces.

In order to eliminate these problems, reconstruction is necessary to at least provide for the adequacy of: (a) un-reinforced masonry bearing walls, (b) the anchorage of exterior parapets and ornamentation, (c) the anchorage of un-reinforced bearing walls to the floors and roof, (d) floor and roof diaphragms, and (e) the development of a complete bracing system to resist horizontal wind and earthquake forces.

Enforcing the retrofitting of buildings to meet earthquake standards is a difficult task. First, Dinuba would have to commit staff to the project. In addition to being costly, this would require a policy decision on the part of the City Council that the potential problems were of such dimensions that the cost, both to the City and to the landowner, is warranted. Second, the cost to the property owner might be prohibitive, at the very least causing construction impacts on the existing tenants, possibly relocation and rent increase. The report referenced above stated that it was unlikely that building owners could feasibly afford the cost of making the necessary improvements and that some sort of grant funds would be needed.

Aside from structural damage, earthquake activity can produce three other types of adverse effects. The first is ground failure such as landslides, subsidence/settlement, and liquefaction, which itself is a factor in making some lands unsuitable for development. The risk of such effects in Dinuba is minimal to moderate. The second adverse effect would be from a seiche (an earthquake induced wave in a lake, reservoir, or harbor). As stated earlier, there are no bodies of water within the Dinuba area large enough to be subject to a seiche.

The third effect would be caused by damage to a dam that results in dam failure. Pine Flat Dam on the Kings River and Terminus Dam on the Kaweah River could produce flooding should they fail. There are requirements that the owners of dams prepare maps showing areas that would be flooded should a dam fail. Dam failure inundation maps are available for these dams. These maps indicate that the City of Dinuba would not flood if these dams failed. Areas to the west of Dinuba in the northwest corner of the proposed Planning Area would be within the 1-2 hour inundation zone if Pine Flat/Terminus Dam failed (see Figure 10-1), but these areas are not currently planned for urban development. Information regarding the depth of the water should flooding occur is no longer available. It is the policy of the Corps not to list depths since such a calculation depends on too many variables (amount of water stored, location of the failure, extent of the failure, etc.).

10.2 Identification of Structural Hazards and Critical Facilities

Critical facilities include: underground utilities, schools, hospitals, transportation systems, etc. There are no active faults in the Dinuba vicinity which could result in strong ground shaking in the event of an earthquake. Impacts to critical facilities by seismic events therefore would not be significant, but identification of critical facilities is still useful to assess risks from other hazards. A critical facilities analysis would be helpful in determining the vulnerability of individual facilities in the community. The analysis would include an inventory of critical facilities, the hazard risks associated with the critical facilities and a vulnerability assessment based on the various hazards.

10.3 Wildland and Urban Fire Hazards

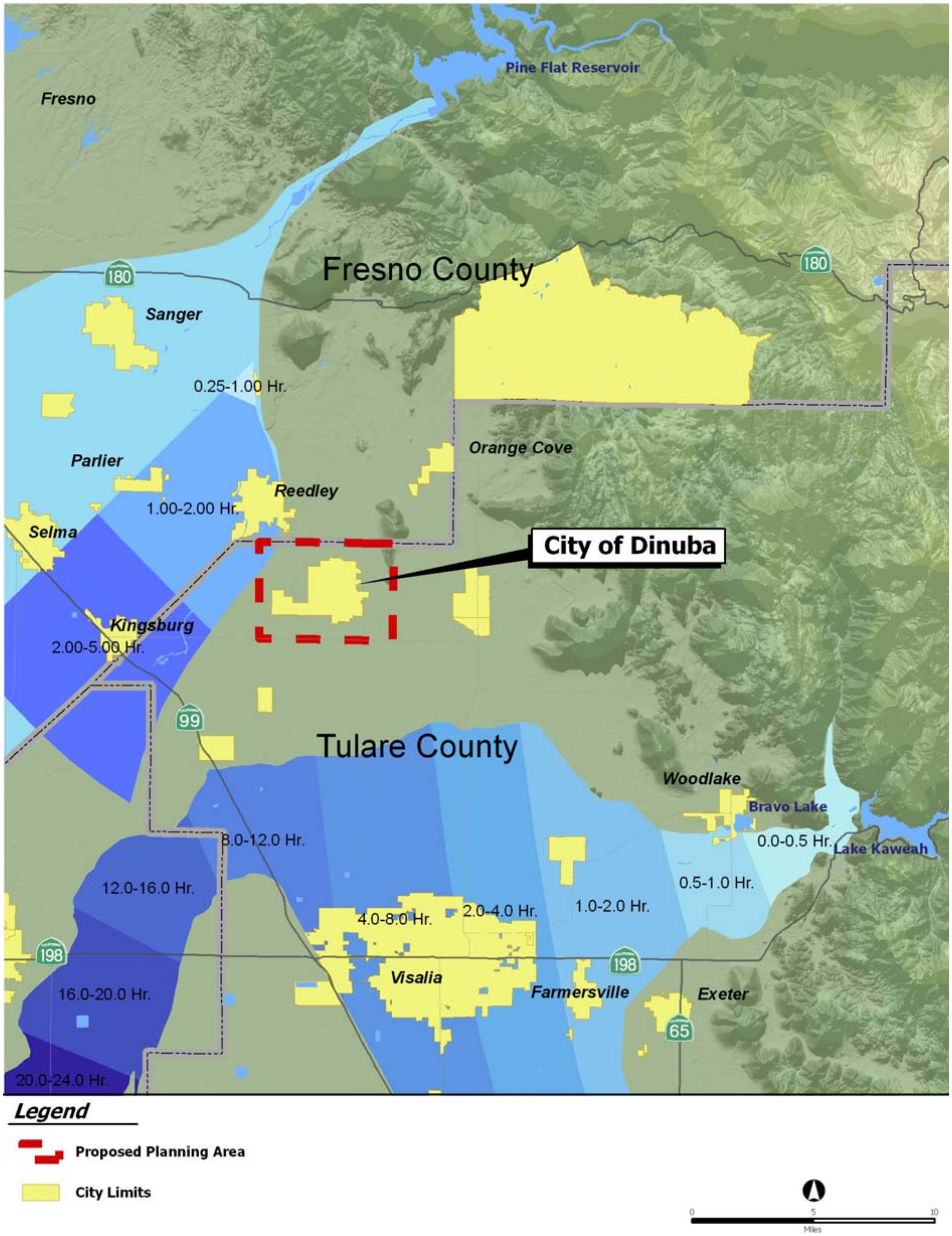
Wildland fires resulting from both man-made and natural causes can occur in brush, or grasslands, primarily in sparsely developed or existing open space lands. Structures and urban development may also be threatened or destroyed in the area of wildland fires. Dinuba and its immediately surrounding areas are developed for urban and agricultural uses and are therefore not subject to wildland fires.

Structural fires usually result from man-made causes and threaten industrial, residential and commercial structures, especially those built before building and fire codes were established. These substandard structures represent the highest potential for injury, death, or loss of property. Enforcement of the City of Dinuba's zoning codes, as well as standard fire codes, will help to minimize risks of and from urban fires. For a more in-depth discussion of Dinuba's fire protection services please see section 1.6.6 of this report.

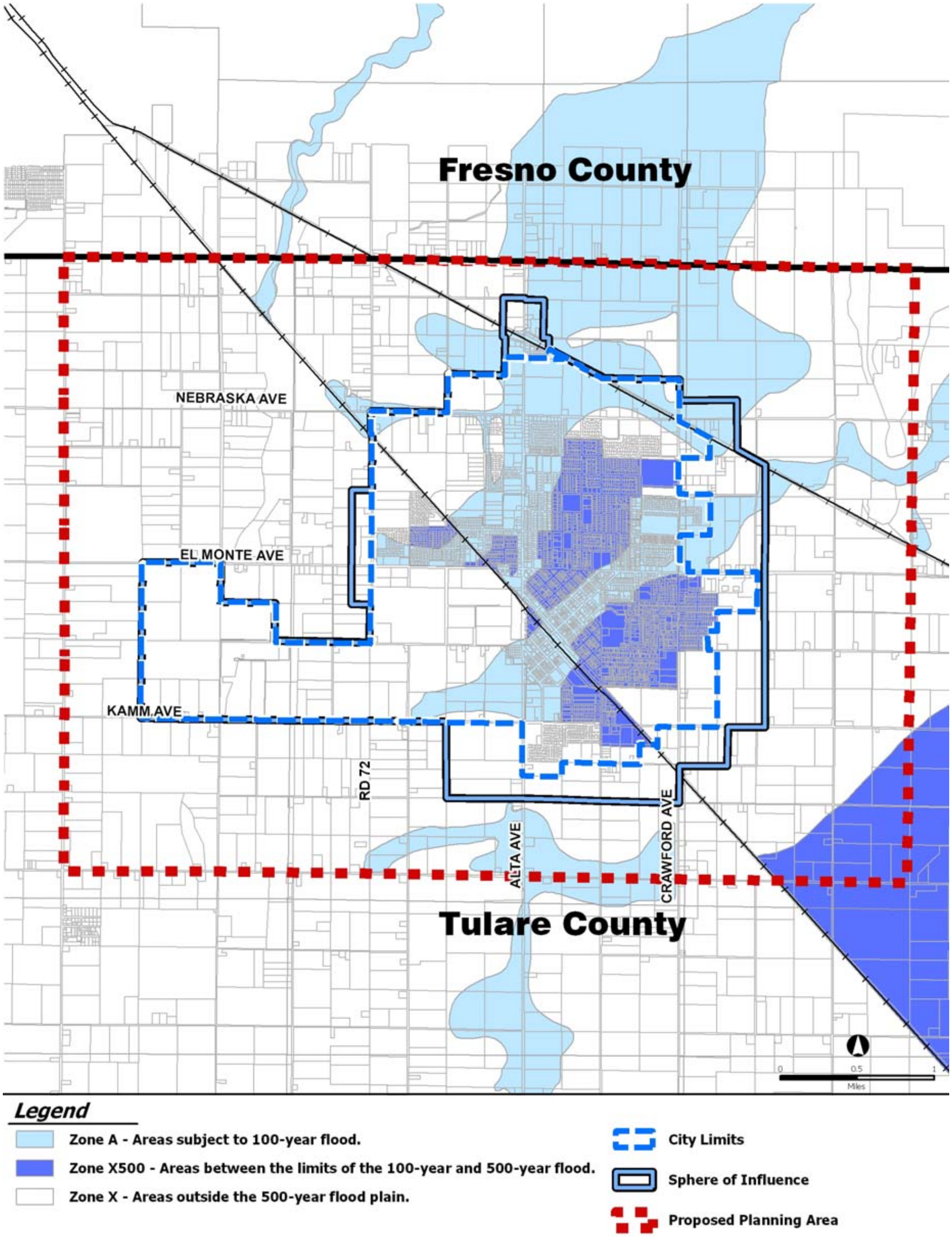
10.4 Areas Subject to Flooding and Dam Failure Inundation

Portions of Dinuba are within the 100-year floodplain as identified by the Federal Emergency Management Agency (FEMA) on their Flood Insurance Rate Map (reference Figure 10-1). Much of the flood area in Dinuba roughly follows the course of sloughs or creeks that originally flowed through the area, but were diverted into irrigation ditches as the area was settled.

As stated earlier, the City of Dinuba would not flood if the Pine Flat Dam and Terminus Dam failed. However, areas in the northwest corner of this report's planning area would be affected (see Figure 10-1).



Quad Knopf	DAM INUNDATION AREAS	Figure 10 - 1



Quad Knopf

FLOODING

Figure 10 - 2

CHAPTER ELEVEN

NOISE

CHAPTER ELEVEN – NOISE

11.1 Introduction

The principal noise sources in the City of Dinuba are traffic on local roads, railroad noise, and industrial noise. The existing noise environment in the City of Dinuba was determined by a combination of noise level measurements and noise modeling. Following is a discussion of the background noise level survey results in residential areas of the City, and a description of the studied noise sources in the City. The Existing Noise Conditions report from which much of the information in this section is drawn was completed in July 2006 by Brown-Buntin Associates (BBA) and is included in this Background Report as Appendix E.

11.2 Background Noise Level Survey

The purpose of the background noise level survey was to determine the baseline noise environment in those parts of the City that are removed from obvious noise sources. Four residences were selected for the survey. Their locations are shown in Figure 11-1. Noise measurements were conducted continuously for 24 hours using unattended sound level analyzers. The results of the monitoring are shown in Figures 11-2.

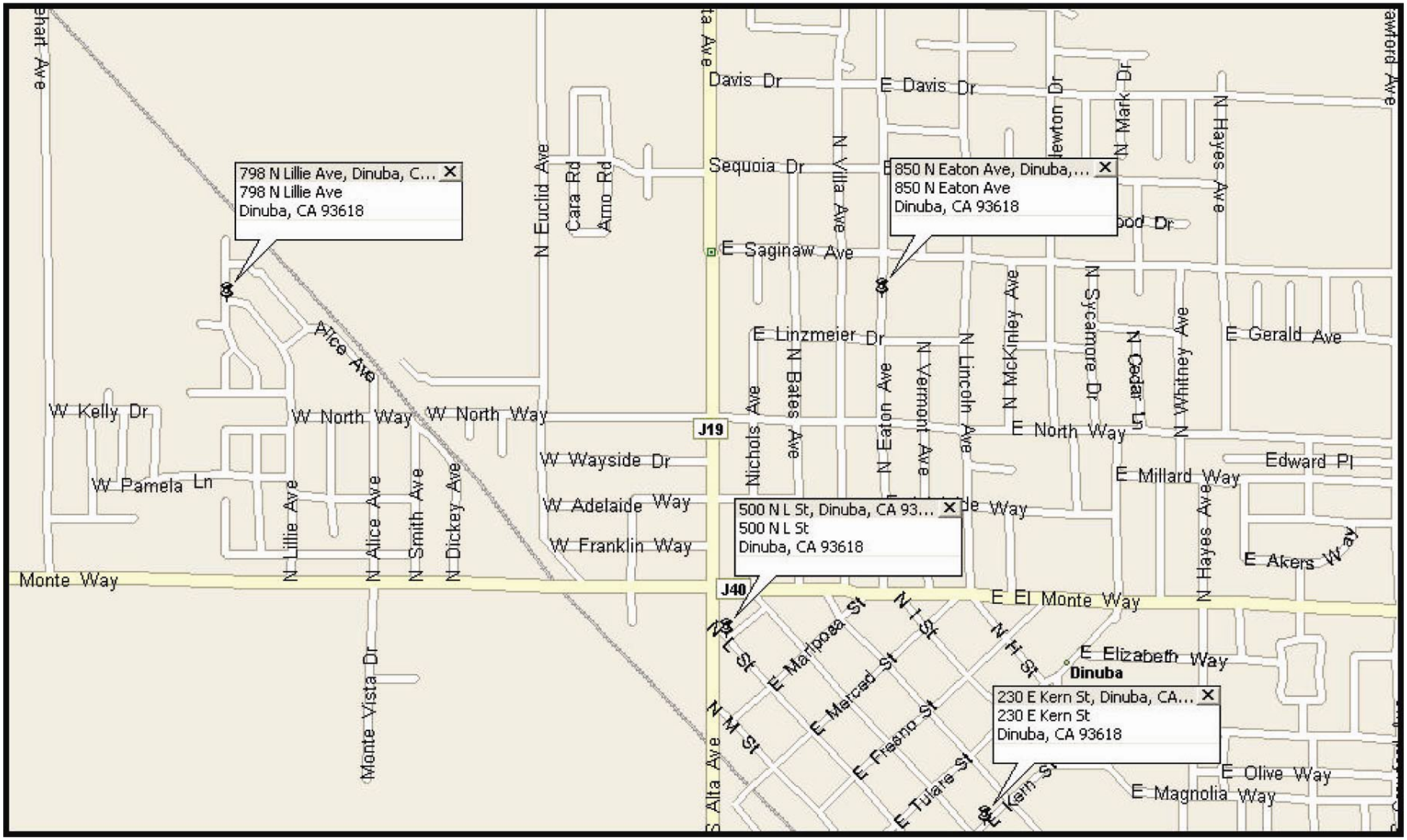
The background noise levels in terms of the Day/Night Average Level (L_{dn}) at the four residences ranged from about 53 to 60 dB. These noise levels are fairly typical of small communities, which generally have background noise levels near the range of 55 to 60 dB L_{dn}.

In Figure 11-2 L_{max} and L_{90} represent the highest (maximum) and near minimum instantaneous noise levels occurring during an hour. The L_{90} value is the noise level exceeded 90% of the time during an hour, and the L_{eq} is the energy equivalent or average noise level during the hour.

11.3 Major Stationary Noise Sources

The production of noise is an inherent part of many industrial, commercial and agricultural processes, even when the best available noise control technology is applied. Noise production within industrial or commercial facilities is controlled indirectly by Federal and State employee health and safety regulations (OHSA and Cal-OSHA), but exterior noise emissions from such operations have the potential to exceed locally acceptable standards at nearby noise-sensitive land uses.

The following discussion provides generalized information concerning the relative noise impacts of the three major industrial noise sources in the City of Dinuba. Table 11-1 summarizes noise levels from each industry. Other industries or other major noise sources may exist, but noise was not perceptible from them during a reconnaissance of the City on July 6, 2006. Worst case 50 and 55 dBA hourly L_{eq} noise contours were calculated for the major stationary noise sources. The 50dBA contours are included in Figure 11-3 of this document. The generalized contours contained within Figure 11-3 should be used as a screening device to determine when potential noise-related land use conflicts may occur, and when site-specific studies may be required to properly evaluate noise at a given noise-sensitive receiver location.



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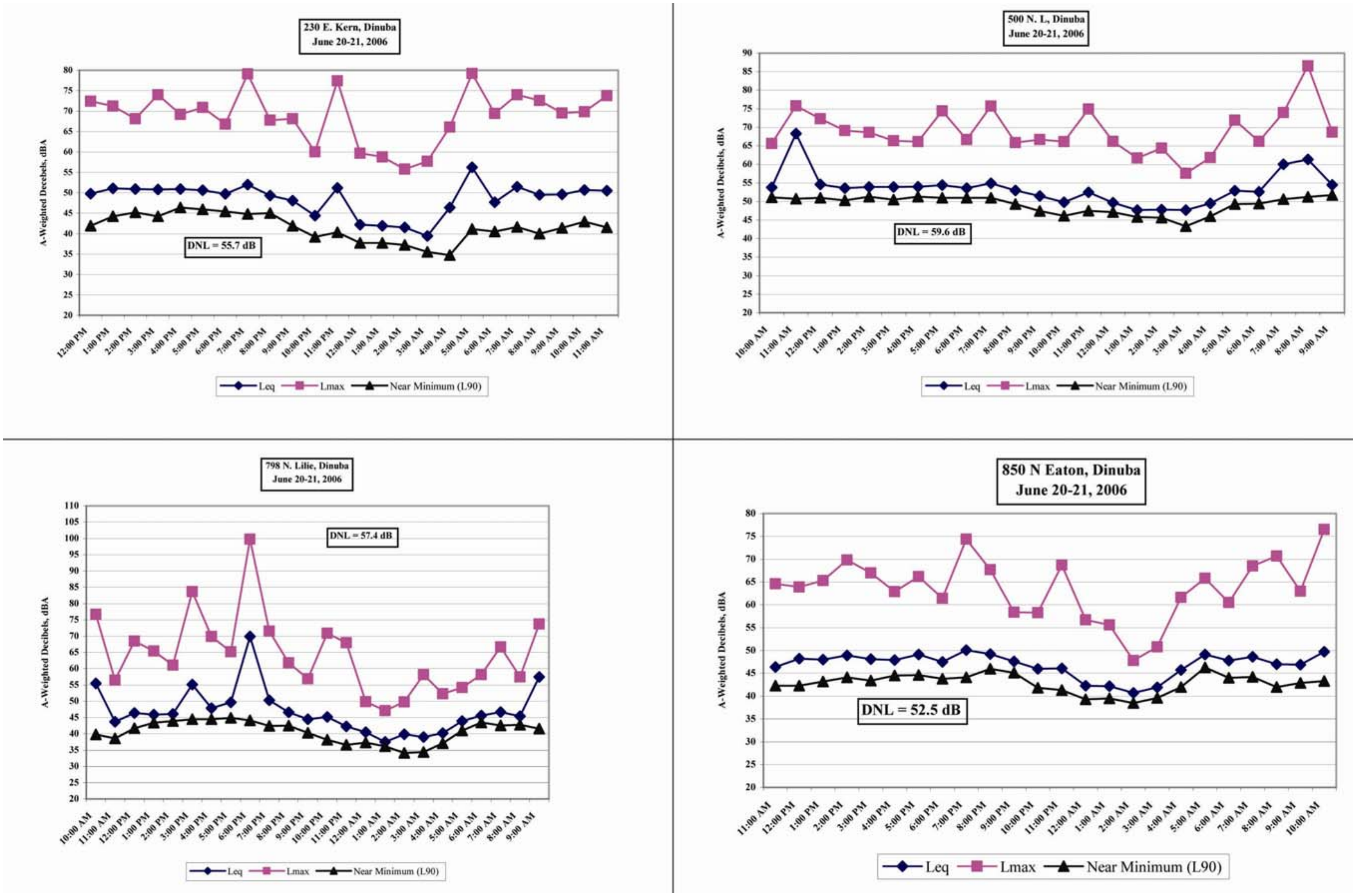
BACKGROUND NOISE MEASUREMENT LOCATIONS

Figure
11-1



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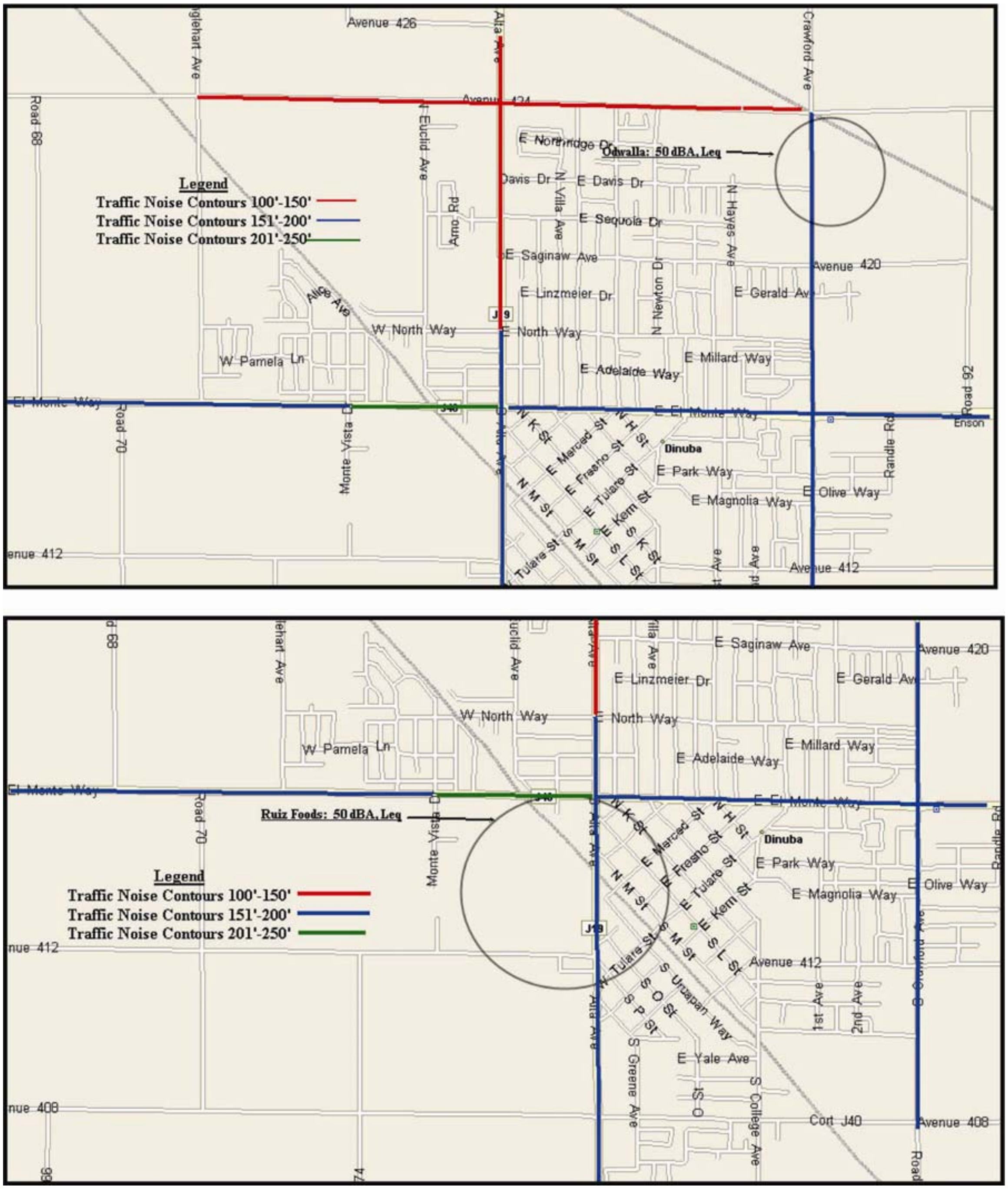
BACKGROUND NOISE LEVEL MEASUREMENTS

Figure 11-2



TRAFFIC AND INDUSTRY NOISE CONTOURS	Figure 11-3

Quad Knopf

Table 11-1
Summary of Noise Levels Measured From Industries
July 7, 2006

Industry	Distance	L_{eq}, dBA	L_{max}, dBA	Distance to 50 dBA, L_{eq}	Distance to 55 dBA, L_{eq}
Ruiz Food Products Alta Ave. & Ave. 412	905’	55.1	56.3	1628’	916’
Odwalla Davis & Crawford	597’	55.7	56.3	1151’	647’
Best Buy Dist. Center* Ave. 412 & Rd. 72	--	--	--	--	--

* Sporadic noise from trucks, but not audible at property line.
Source: Brown-Buntin Associates, Inc.

Table 11-1 shows that the 50 dBA L_{eq} contour can be as far as 1628 feet from the Ruiz plant. In practice, it may not be possible to discern plant noise at distances greater than 500 feet during certain times of the day because of other community noise sources (traffic, etc.), and varying atmospheric conditions which can have significant effects on noise levels at that distance.

TRAFFIC NOISE

Traffic noise exposure was calculated using the Federal Highway Administration Traffic Noise Model (TNM). Version 2.5 of the TNM’s Lookup Tables provides a reference of pre-calculated TNM results for simple highway geometrics that are adequate for the scope of a general plan.

Existing traffic volumes and truck percentages were provided by Peters Engineering Group. Table 11-2 shows the traffic data used in the Model. Table 11-3 shows existing traffic noise level contours in tabular form. Figure 11-3 shows the streets where existing noise level contours were calculated. The streets are color coded to show the approximate distance to the 60 dB DNL noise contour.

In general, distances to the 60 dBA on local roadways through Dinuba range from 100 to 250 feet on the following major roadways: El Monte Way, Crawford Avenue south of Nebraska Avenue, Alta Avenue, and Nebraska Avenue between Englehart Avenue (Road 72) and Crawford Avenue. Traffic noise levels that are 60 dB L_{dn} or less usually are considered to be fully compatible with noise-sensitive uses, which include residences, schools, churches and hospitals. Levels between 60 and 70 dB L_{dn} are marginally acceptable, and levels over 70 dB L_{dn} usually are considered to be unacceptable.

Table 11-2
FHWA Highway Traffic Noise Prediction Model Inputs
Existing Conditions

Roadway Name	Segment Description	ADT	% Day	% Night	% Med	% Heavy	Speed	Distance
Nebraska Avenue	West of Alta Avenue	4497	77	23	8.3	2.0	48	75
	East of Alta Avenue	4329	77	23	8.3	2.0	48	75
El Monte Way	West of Road 56	12344	87	13	11.0	2.0	43	75
	West of Road 62	12936	87	13	11.0	2.0	43	75
	West of Road 68	13454	87	13	11.0	2.0	43	75
	West of Road 72	13848	87	13	11.0	2.0	43	75
	West of Monte Vista	14031	87	13	11.0	2.0	43	75
	East of Monte Vista	14549	87	13	11.0	2.0	43	75
	West of Alta Avenue	18038	87	13	11.0	2.0	43	75
	East of Alta Avenue	15410	87	13	11.0	2.0	43	75
	West of Crawford Avenue	13972	87	13	11.0	2.0	43	75
	East of Crawford Avenue	10731	87	13	11.0	2.0	43	75
Kamm Avenue	West of Alta Avenue	2898	87	13	4.2	3.2	37	75
	East of Alta Avenue	4314	87	13	4.2	3.2	37	75
Alta Avenue	North of Nebraska Avenue	9541	89	11	7.5	4.4	37	75
	South of Nebraska Avenue	11169	89	11	7.5	4.4	37	75
	North of El Monte Way	16118	89	11	7.5	4.4	37	75
	South of El Monte Way	13315	89	11	7.5	4.4	37	75
	North of Kamm Avenue	16797	89	11	7.5	4.4	37	75
	South of Kamm Avenue	11074	89	11	7.5	4.4	37	75
Crawford Avenue	North of El Monte Way	13892	88	12	11.0	6.3	37	75
	South of El Monte Way	10176	88	12	11.0	6.3	37	75

Table 11-3
Existing Traffic Noise Levels And Contours
Existing Conditions

Road	Segment	60 dB DNL	65 dB DNL
Nebraska Avenue	West of Alta Avenue	121	56
	East of Alta Avenue	118	55
El Monte Way	West of Road 56	171	79
	West of Road 62	177	82
	West of Road 68	181	84
	West of Road 72	185	86
	West of Monte Vista	186	87
	East of Monte Vista	191	89
	West of Alta Avenue	220	102
	East of Alta Avenue	198	92
	West of Crawford Avenue	186	86
	East of Crawford Avenue	156	72
Kamm Avenue	West of Alta Avenue	51	23
	East of Alta Avenue	66	31
Alta Avenue	North of Nebraska Avenue	123	57
	South of Nebraska Avenue	137	64
	North of El Monte Way	175	81
	South of El Monte Way	154	71
	North of Kamm Avenue	180	83
	South of Kamm Avenue	136	63
Crawford Avenue	North of El Monte Way	192	89
	South of El Monte Way	156	72

RAILROAD NOISE

The San Joaquin Valley Railroad (SJVRR) rail line passes through Dinuba in a northwest-southeast direction. According to the railroad, about 2 freight trains daily pass through Dinuba. Grade crossings are located at El Monte Way, Alta Avenue, Tulare Avenue and College Avenue. The train horns that are blown at grade crossings result in higher noise levels compared to other locations along the rail line.

Train noise levels in terms of the DNL were obtained from BBA's database. At locations that are within 1000 feet of grade crossings the distance to the 60 dB DNL contours is 158 feet from the tracks. At distances greater than 1000 feet from grade crossings the 60 dB DNL contour is 55 feet from the tracks.

CHAPTER TWELVE

ISSUES, OPPORTUNITIES, AND CONSTRAINTS

CHAPTER TWELVE – ISSUES, OPPORTUNITIES, AND CONSTRAINTS

In its broadest context, the General Plan is a way of problem solving; it is a process for making informed decisions about a community's future and establishing priorities and action plans to achieve development objectives. For example, a City may choose to fund parks rather than streets because of the need for more open space, or it may construct an improved water system rather than building a new fire station, or vice versa. It may decide to grow to the east, west or both. As an exercise in community involvement and an examination of a city's resources, the General Plan update is an attempt to foresee the consequences of possible courses of action and select the best one.

This General Plan update process has so far included several important steps to identify local preferences. Visioning workshops have been conducted and public and civic leaders have expressed their opinions about the City and its growth issues, opportunities, and constraints. Planning Commission, City Council, and General Plan Advisory Committee meetings have been held to discuss existing conditions, community visioning, development alternatives, comments and expectations about the General Plan process.

The planning principles gleaned from this are process summarized as follows:

- Dinuba's friendly, small town atmosphere should be preserved by ensuring diverse, appropriate scale retail services; citizen participation in decision making; adequacy of public services; and quality of public schools.

- New residential development should be more walkable, have an inviting neighborhood look and feel, and include some of the following: narrow, tree-lined streets; an alternative to sound walls; recessed/detached garages; include ample open space/parkland; and a mix of housing types.

- The major gateways into Dinuba should be aesthetic and inviting to both travelers and residents. This shall be accomplished with appropriate signage and landscaping at appropriate locations.

- New development should take place in a concentric pattern, contiguous to existing developed areas.

- The City's Sphere of Influence and growth policies should ensure that the community is physically distinct from others and contains an agricultural buffer area.

- Traffic conflicts should be resolved, including connectivity between neighborhoods, critical intersections and access to industrial areas. Growth should be allocated with accessibility constraints in mind.

- Local and minor collector streets should be used to provide connectivity between neighborhoods while limiting cross-town trips through neighborhoods. Collector and arterial roads should be designed to provide efficient, safe connectivity between neighborhoods, services and facilities.

- Opportunities to provide more public spaces for recreation and social events should be capitalized on.

- The role of the downtown area as a focal point of the community should be preserved. Sites for more retail, entertainment, restaurants and specialty stores should be identified.

- The commercial opportunities afforded by Alta Avenue and El Monte Way should be capitalized on.

APPENDICES

APPENDIX A

CULTURAL RESOURCES RECORDS SEARCH

CSUB

Center for Archaeological Research
California State University, Bakersfield
24 DDH
9001 Stockdale Highway
Bakersfield, California 93311-1022

(661) 654-3297
FAX (661) 654-2143

June 1, 2006

Mr. Gregory Martin
Quad Knopf, Inc.
5110 West Cypress Avenue
Visalia, CA 93278

RE: Cultural Resources Records Search for the Dinuba General Plan Update, for land in Sections 1, 12-14, and 24, T16S, R23E, on the Reedley, CA, 7.5' USGS Topographic Quadrangle, and Sections 3-10 and 15-22, T16S, R24E, on the Orange Cove South, CA, 7.5' USGS Topographic Quadrangle, on Behalf of the City of Dinuba in Tulare County

Dear Mr. Martin:

Per your request, a cultural resources records search (RS No. 06-271; CAR Project No. 06-20) was conducted for the above-referenced project on May 31, 2006, at the Southern San Joaquin Valley Archaeological Information Center at California State University, Bakersfield, by myself. The purpose of this records search is for the Dinuba General Plan Update in Tulare County.

The results of the records search indicated that 13 cultural resource studies have been conducted within or immediately adjacent to the subject project area. Most of these were linear surveys along major roadways, but much of the project area has never been surveyed. As a result of these studies, 30 sites were documented directly within the project area. There are no known cultural resources within the subject project area or within a half-mile radius that are listed in the *National Register of Historic Places*, the *California Register of Historical Resources*, *California Points of Interest*, *California Inventory of Historic Resources*, or the *California State Historic Landmarks*.

Due to the volume of sites that have been documented in the project area, and due to the fact that a large portion of the project area has never been surveyed, further investigations are necessary.

The invoice for this records search will follow shortly. If you have any further questions or concerns, please feel free to contact me at 661-654-3297 or by email at jgardner4@csub.edu.

Sincerely,

Jill K. Gardner, Ph.D., RPA
Associate Director

APPENDIX B

EXISTING CONDITIONS ANALYSIS REPORT, TRAFFIC

PETERS ENGINEERING GROUP
A California Corporation
55 Shaw Avenue, Suite 220
Clovis, California 93612
Phone (559) 299-1544
Fax (559) 299-1722

TECHNICAL MEMORANDUM

TO: MR. JAMES ALCORN

FROM: DAVID PETERS, PE, TE

SUBJECT: CITY OF DINUBA – GENERAL PLAN UPDATE
EXISTING CONDITIONS ANALYSIS REPORT

DATE: MAY 31, 2006

CC:

Introduction

Peters Engineering Group has been retained by Quad Knopf to perform traffic analyses and a circulation study in support of a General Plan Update for the City of Dinuba. The purpose of the existing conditions analysis portion of this project is to ascertain the current traffic volumes on various roadway segments and intersections and to calculate the existing levels of service for the study facilities. Level of service is a measure of the performance of a particular transportation facility. The Highway Capacity Manual defines the procedures to determine the level of service of various transportation facilities. Tables 1 and 2 present characteristics for both unsignalized and signalized intersections.

Table 1 – Level of Service Characteristics For Unsignalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Little or no delay.	0-10
B	Short traffic delays.	>10-15
C	Average traffic delays.	>15-25
D	Long traffic delays.	>25-35
E	Very long traffic delays.	>35-50
F	Stop-and-go conditions.	>50

Table 2 - Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Uncongested operations; all queues clear in a single cycle.	≤10
B	Very light congestion; an occasional phase is fully utilized.	>10-20
C	Light congestion; occasional queues on approaches.	>20-35
D	Significant congestion on critical approaches, but intersection is functional. Cars required to wait through more than one cycle during short peaks. No long-standing queues formed.	>35-55
E	Severe congestion with some long-standing queues on critical approaches. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	>55-80
F	Total breakdown, stop-and-go conditions.	> 80

Tables 3 and 4 present level of service characteristics and volume thresholds for roadway segment levels of service.

Table 3 –Level of Service Characteristics for Roadways

Level of Service	Description
A	Primarily free flow operations
B	Reasonably unimpeded operations, ability to maneuver only slightly restricted
C	Stable operations, ability to maneuver and select operating speed affected
D	Unstable flow, speeds and ability to maneuver restricted
E	Significant delays, flow quite unstable
F	Extremely slow speeds

Table 4 – Volume Thresholds for Roadway Levels of Service

Lanes	Divided	A	B	C	D	E	F
1	Undivided	-	-	≤480	481 - 760	761 - 810	>810
2	Divided	-	-	≤1,120	1,121 - 1,620	1 621 - 1,720	>1,720
3	Divided	-	-	≤1,740	1,741 - 2,450	2,451 - 2,580	>2,580

Study Area and Time Period

This report includes analysis of the following intersections and roadway segments:

Study Intersections

1. El Monte & Road 56
2. El Monte & Road 64
3. El Monte & Road 70
4. El Monte & Road 72
5. El Monte & Alta
6. Sierra & Road 70
7. Sierra & Alta
8. Kamm & Road 56
9. Kamm & Road 64
10. Kamm & Road 70
11. Kamm & Alta
12. SR 201 & 64
13. El Monte & Monte Vista
14. El Monte & Crawford
15. Saginaw & Alta
16. Saginaw & Crawford
17. Nebraska & Alta

Study Roadway Segments

Nebraska Avenue
- West of Alta Avenue
- East of Alta Avenue

El Monte Way
- West of Road 56
- West of Road 62
- West of Road 68
- West of Road 72
- West of Monte Vista
- East of Monte Vista
- West of Alta Avenue
- East of Alta Avenue
- West of Crawford Ave.
- East of Crawford Ave

Kamm Avenue
- West of Alta Avenue
- East of Alta Avenue

Alta Avenue
- North of Nebraska Ave.
- North of El Monte Way
- South of El Monte Way
- North of Kamm Ave
- South of Kamm Ave

Crawford Avenue
- North of El Monte Way.
- South of El Monte Way

Existing and Future Traffic Volumes

Existing traffic volumes were determined by performing manual turning movement counts at the study intersections between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. on weekdays. The existing peak-hour turning movement volumes are presented in Figures 1 and 2. Existing peak-hour roadway segment volumes are presented in Figures 3 and 4.

Analyses

The intersection levels of service were determined using the computer program Synchro (Build 614) for unsignalized and signalized intersections, which is based on the 2000 Highway Capacity Manual procedures for calculating levels of service. The roadway segment levels of service were evaluated utilizing the Florida Department of Transportation Table 4-7, Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas (Non-State Roadways, Major City/County Roadways). The Florida Tables are widely recognized as an industry standard for determining levels of service on roadway segments. Tables 5 and 6 present the results of the a.m. and p.m. peak-hour intersection analyses. Where intersections include one-way or two-way stop sign control, the reported level of service is that for the approach with the greatest delay. Tables 7 and

8 present the results of the a.m. and p.m. peak hour roadway segment analyses. The analysis output for both the study intersections and roadways segments is attached to this report.

Table 5
Intersection Level of Service (LOS) Summary – Weekday A.M. Peak Hour

Intersection		Existing	
		Delay (sec)	LOS
1	El Monte & Road 56	36.0	E
2	El Monte & Road 64	14.8	B
3	El Monte & Road 70	14.1	B
4	El Monte & Road 72	8.1	A
5	El Monte & Alta	19.0	B
6	Sierra & Road 70	8.9	A
7	Sierra & Alta	4.7	A
8	Kamm & Road 56	12.3	B
9	Kamm & Road 64	8.9	A
10	Kamm & Road 70	9.1	A
11	Kamm & Alta	6.3	A
12	SR 201 & 64	11.5	B
13	El Monte & Monte Vista	9.1	A
14	El Monte & Crawford	8.2	A
15	Saginaw & Alta	14.3	B
16	Saginaw & Crawford	16.2	C
17	Nebraska & Alta	6.5	A

Table 6
Intersection Level of Service (LOS) Summary – Weekday P.M. Peak Hour

Intersection		Existing	
		Delay (sec)	LOS
1	El Monte & Road 56	49.1	E
2	El Monte & Road 64	35.0	D
3	El Monte & Road 70	18.6	C
4	El Monte & Road 72	9.0	A
5	El Monte & Alta	30.8	C
6	Sierra & Road 70	8.8	A
7	Sierra & Alta	6.5	A
8	Kamm & Road 56	12.8	B
9	Kamm & Road 64	9.2	A
10	Kamm & Road 70	9.2	A
11	Kamm & Alta	8.7	A
12	SR 201 & 64	11.1	B
13	El Monte & Monte Vista	10.4	B
14	El Monte & Crawford	7.8	A
15	Saginaw & Alta	13.3	B
16	Saginaw & Crawford	17.8	C
17	Nebraska & Alta	7.0	A

Table 7
Road Segment Level of Service (LOS) Summary – Weekday A.M. Peak Hour

Road	**Existing**		
Direction and Segment	Lanes	Volume	LOS
Nebraska Avenue WB			
West of Alta Avenue	1	186	C
East of Alta Avenue	1	186	C
Nebraska Avenue EB			
West of Alta Avenue	1	138	C
East of Alta Avenue	1	106	C
El Monte Way WB			
West of Road 56	1	447	C
West of Road 62	1	435	C
West of Road 68	1	435	C
West of Road 72	1	430	C
West of Monte Vista	1	432	C
East of Monte Vista	1	446	C
West of Alta Avenue	2	522	C
East of Alta Avenue	1	444	C
West of Crawford Ave.	2	424	C
East of Crawford Ave	2	386	C
El Monte Way EB			
West of Road 56	1	346	C
West of Road 62	1	310	C
West of Road 68	1	313	C
West of Road 72	1	374	C
West of Monte Vista	1	360	C
East of Monte Vista	1	456	C
West of Alta Avenue	2	469	C
East of Alta Avenue	1	369	C
West of Crawford Ave.	2	372	C
East of Crawford Ave	2	216	C
Kamm Avenue WB			
West of Alta Avenue	1	84	C
East of Alta Avenue	1	157	C
Kamm Avenue EB			
West of Alta Avenue	1	94	C
East of Alta Avenue	1	99	C

WB – westbound EB - eastbound

Table 7 (Continued)
Road Segment Level of Service (LOS) Summary – Weekday A.M. Peak Hour

Road	**Existing**		
Direction and Segment	Lanes	Volume	LOS
Alta Avenue NB			
North of Nebraska Ave.	1	279	C
North of El Monte Way	2	414	C
South of El Monte Way	1	358	C
North of Kamm Ave	1	514	D
South of Kamm Ave	1	290	C
Alta Avenue SB			
North of Nebraska Ave.	1	273	C
North of El Monte Way	2	514	C
South of El Monte Way	1	429	C
North of Kamm Ave	1	503	D
South of Kamm Ave	1	229	C
Crawford Avenue NB			
North of El Monte Way.	1	366	C
South of El Monte Way	1	307	C
Crawford Avenue SB			
North of El Monte Way.	1	369	C
South of El Monte Way	1	334	C

NB – northbound SB - southbound

Table 8
Road Segment Level of Service (LOS) Summary – Weekday P.M. Peak Hour

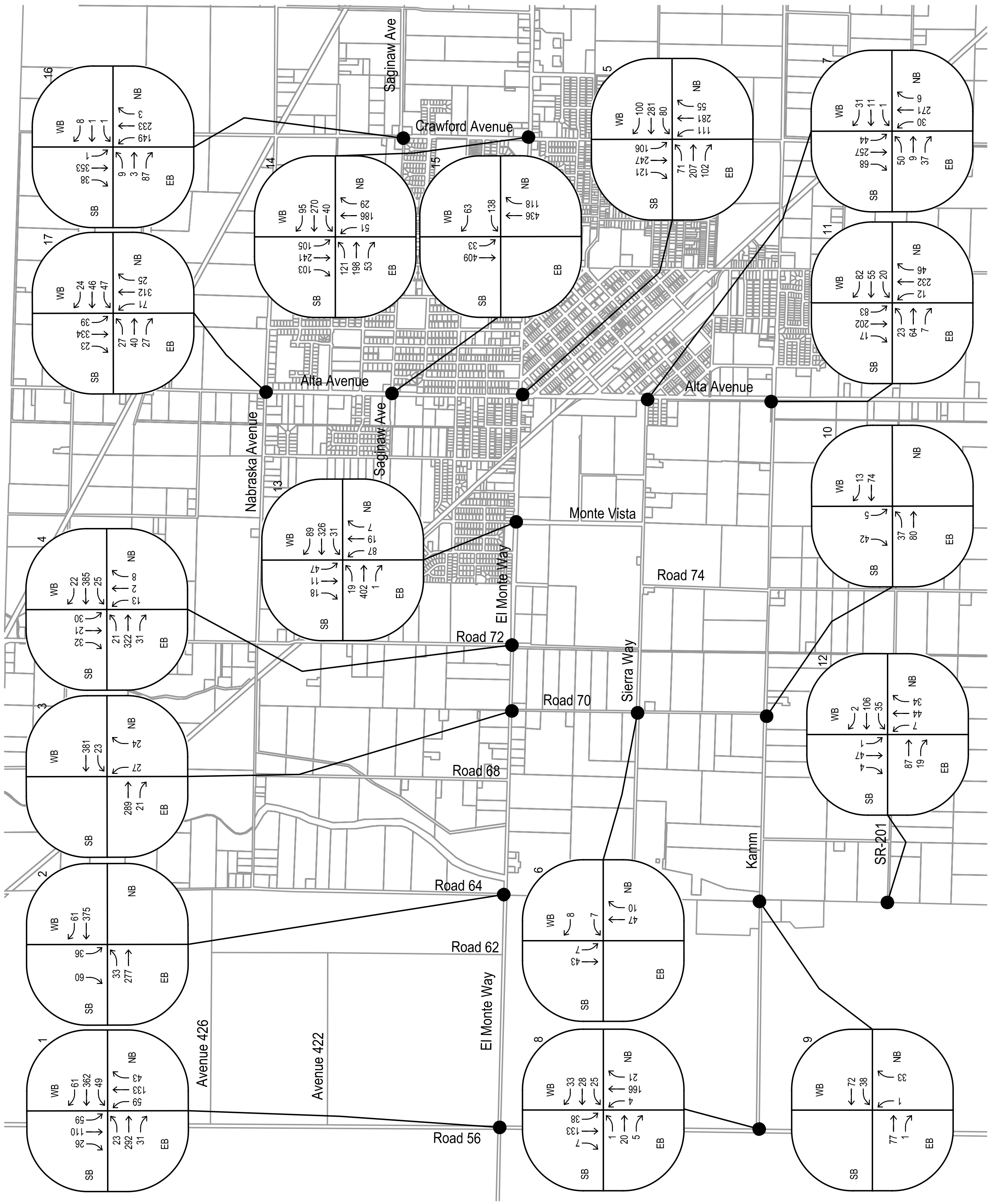
Road	**Existing**		
Direction and Segment	Lanes	Volume	LOS
Nebraska Avenue WB			
West of Alta Avenue	1	134	C
East of Alta Avenue	1	133	C
Nebraska Avenue EB			
West of Alta Avenue	1	158	C
East of Alta Avenue	1	168	C
El Monte Way WB			
West of Road 56	1	414	C
West of Road 62	1	464	C
West of Road 68	1	457	C
West of Road 72	1	494	D
West of Monte Vista	1	505	D
East of Monte Vista	1	472	C
West of Alta Avenue	2	717	C
East of Alta Avenue	1	662	D
West of Crawford Ave.	2	471	C
East of Crawford Ave	2	520	C
El Monte Way EB			
West of Road 56	1	484	D
West of Road 62	1	563	D
West of Road 68	1	638	D
West of Road 72	1	599	D
West of Monte Vista	1	625	D
East of Monte Vista	1	619	D
West of Alta Avenue	2	763	C
East of Alta Avenue	1	636	D
West of Crawford Ave.	2	647	C
East of Crawford Ave	2	348	C
Kamm Avenue WB			
West of Alta Avenue	1	92	C
East of Alta Avenue	1	153	C
Kamm Avenue EB			
West of Alta Avenue	1	127	C
East of Alta Avenue	1	182	C

WB – westbound   EB - eastbound

Table 8 (Continued)
Road Segment Level of Service (LOS) Summary – Weekday P.M. Peak Hour

Road	**Existing**		
Direction and Segment	Lanes	Volume	LOS
Alta Avenue NB			
North of Nebraska Ave.	1	384	C
North of El Monte Way	2	672	C
South of El Monte Way	1	522	D
North of Kamm Ave	1	608	D
South of Kamm Ave	1	596	D
Alta Avenue SB			
North of Nebraska Ave.	1	371	C
North of El Monte Way	2	608	C
South of El Monte Way	1	515	D
North of Kamm Ave	1	676	D
South of Kamm Ave	1	402	C
Crawford Avenue NB			
North of El Monte Way.	1	532	D
South of El Monte Way	1	491	D
Crawford Avenue SB			
North of El Monte Way.	1	636	D
South of El Monte Way	1	262	C

NB – northbound SB - southbound



EXISTING AM PEAK HOUR TRAFFIC VOLUMES

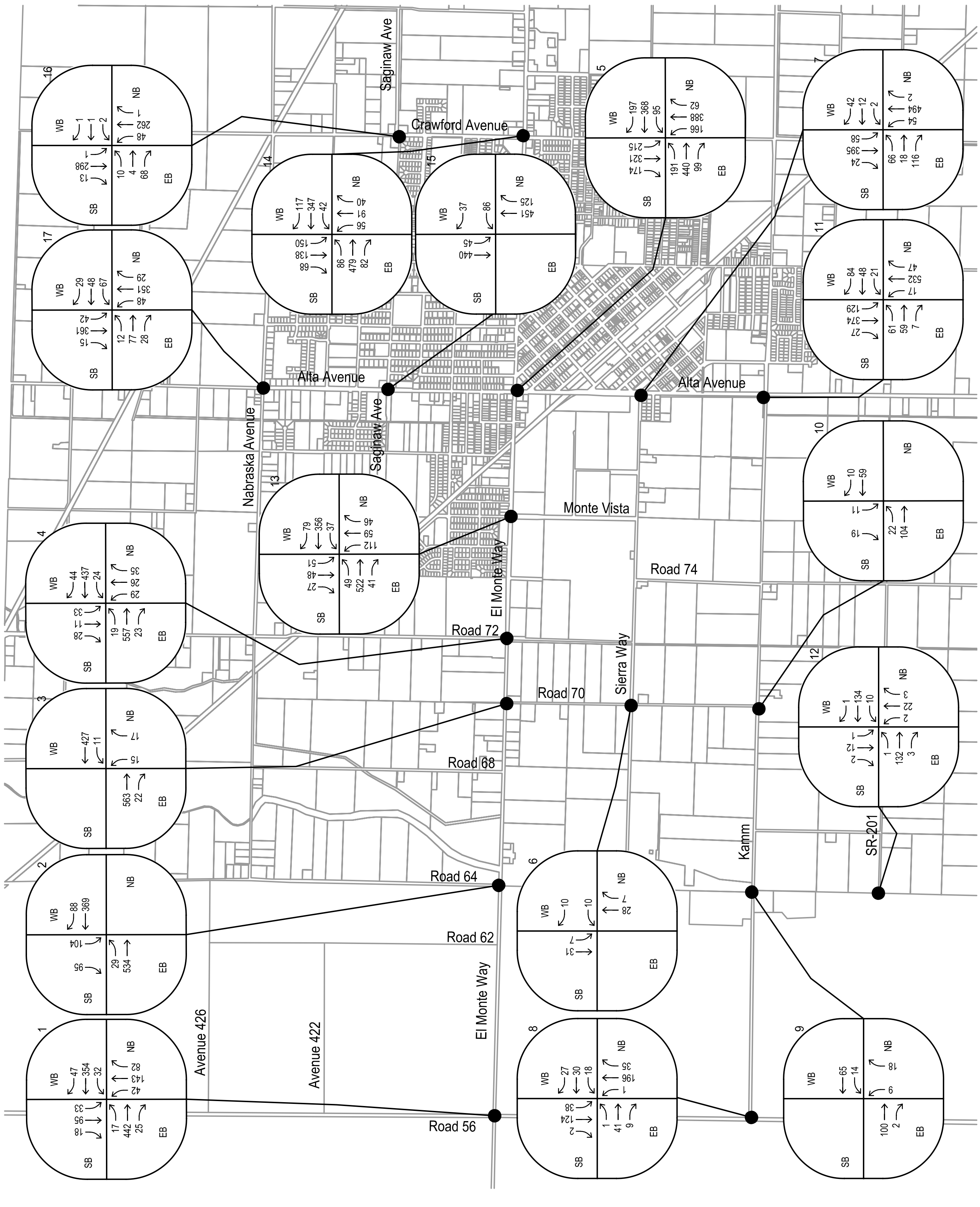
General Plan Update

Dinuba, California

LEGEND

20-AM Peak Hour Volumes

Not to Scale



EXISTING PM PEAK HOUR TRAFFIC VOLUMES

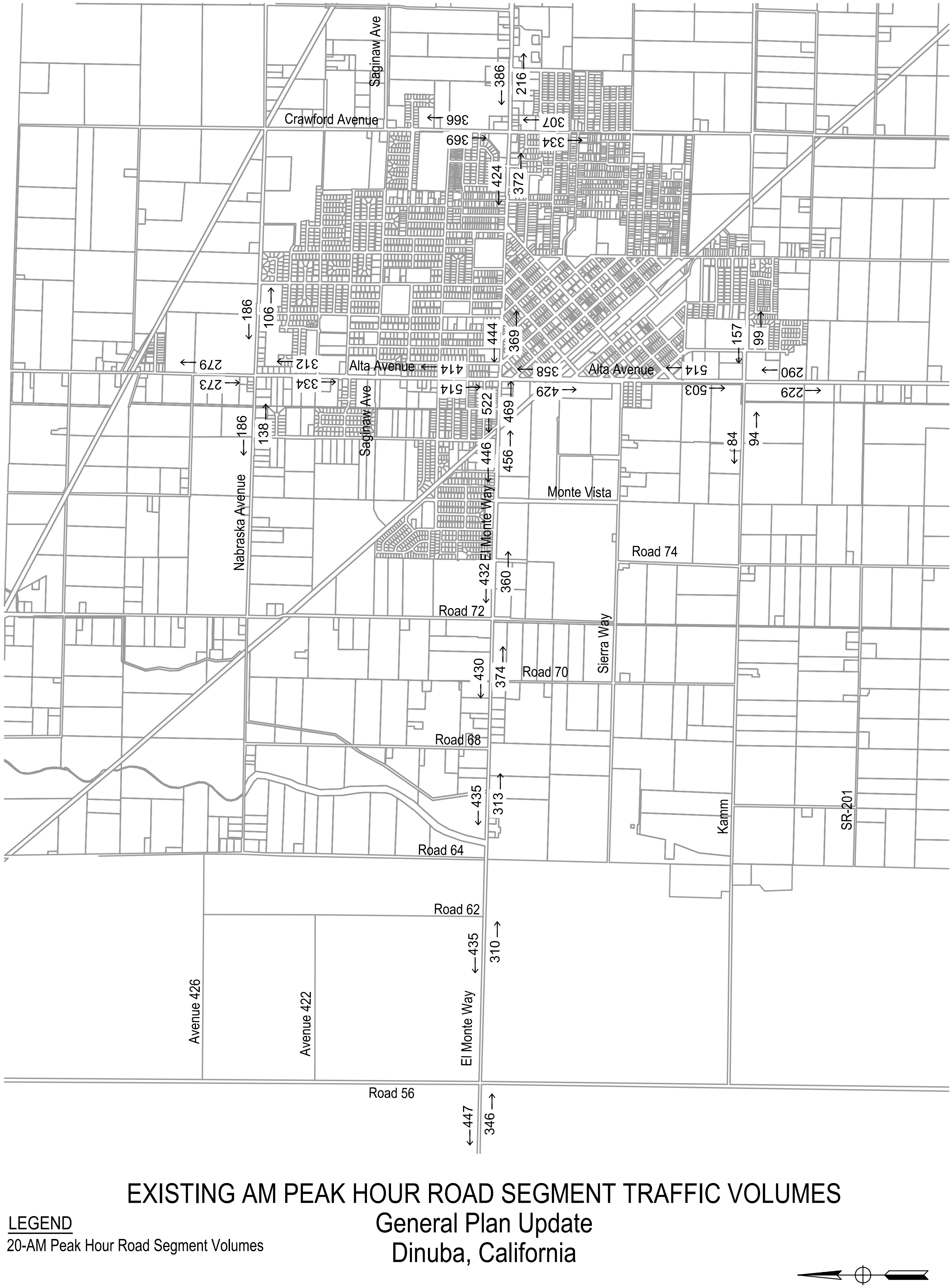
General Plan Update

Dinuba, California

LEGEND

20-PM Peak Hour Volumes

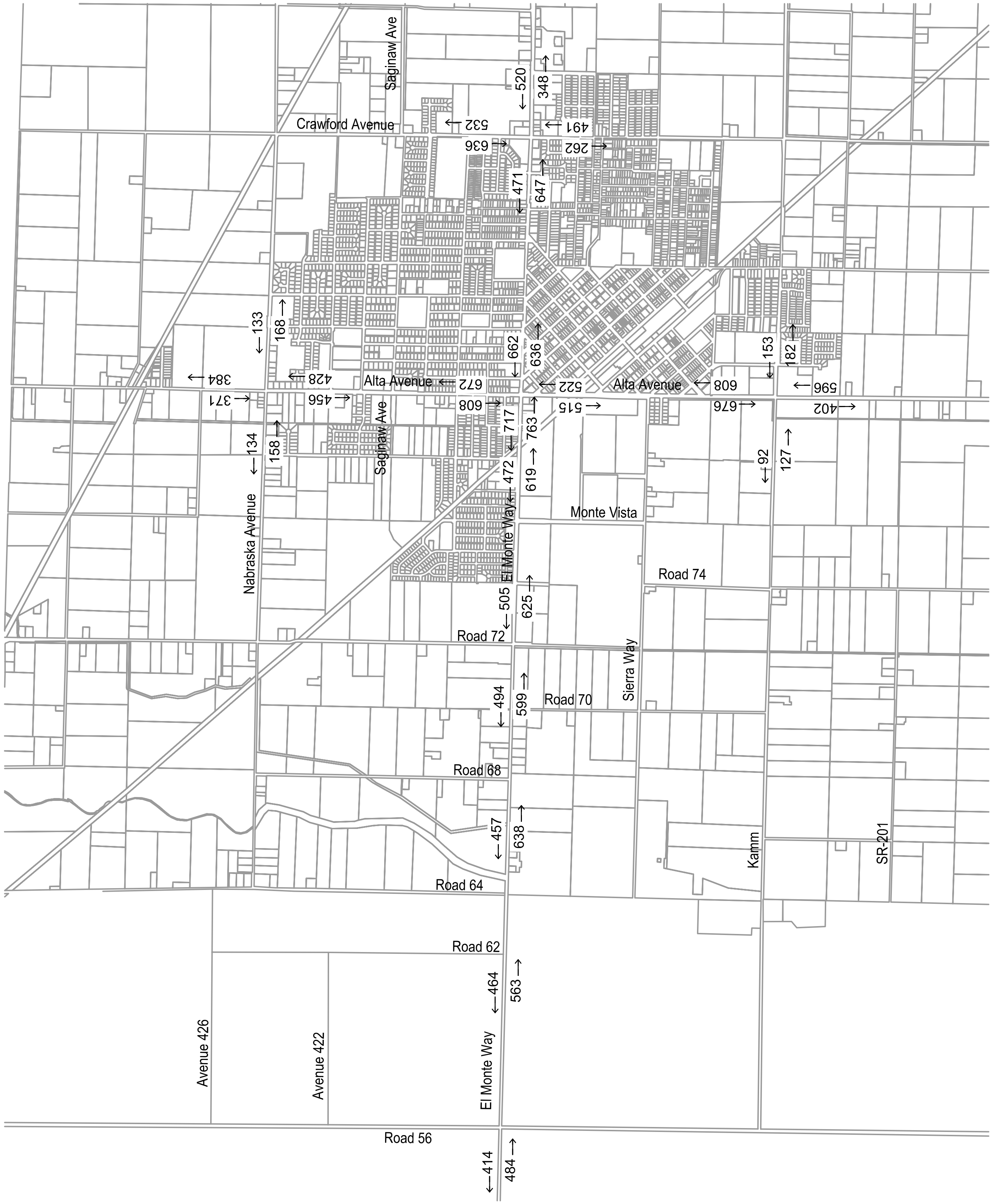
Not to Scale



EXISTING AM PEAK HOUR ROAD SEGMENT TRAFFIC VOLUMES

General Plan Update
Dinuba, California

LEGEND
20-AM Peak Hour Road Segment Volumes



EXISTING PM PEAK HOUR ROAD SEGMENT TRAFFIC VOLUMES

General Plan Update
Dinuba, California

LEGEND
20-PM Peak Hour Road Segment Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	23	292	31	49	362	61	59	133	43	59	110	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	317	34	53	393	66	64	145	47	64	120	28

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	376	513	255	212
Volume Left (vph)	25	53	64	64
Volume Right (vph)	34	66	47	28
Hadj (s)	-0.01	-0.02	-0.03	0.01
Departure Headway (s)	7.1	6.8	7.7	8.0
Degree Utilization, x	0.75	0.97	0.55	0.47
Capacity (veh/h)	490	524	440	414
Control Delay (s)	28.2	57.2	19.8	17.8
Approach Delay (s)	28.2	57.2	19.8	17.8
Approach LOS	D	F	C	C

Intersection Summary			
Delay	36.0		
HCM Level of Service	E		
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	33	277	375	61	36	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	301	408	66	39	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	474				814	441
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	474				814	441
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				88	89
cM capacity (veh/h)	1088				336	616

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	337	474	104
Volume Left	36	0	39
Volume Right	0	66	65
cSH	1088	1700	470
Volume to Capacity	0.03	0.28	0.22
Queue Length 95th (ft)	3	0	21
Control Delay (s)	1.2	0.0	14.8
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	14.8
Approach LOS			B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	289	21	23	381	27	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	314	23	25	414	29	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked					0.95	
vC, conflicting volume			337		790	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			337		780	326
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		91	96
cM capacity (veh/h)			1222		340	716

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	337	439	55
Volume Left	0	25	29
Volume Right	23	0	26
cSH	1700	1222	452
Volume to Capacity	0.20	0.02	0.12
Queue Length 95th (ft)	0	2	10
Control Delay (s)	0.0	0.7	14.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	14.1
Approach LOS			B

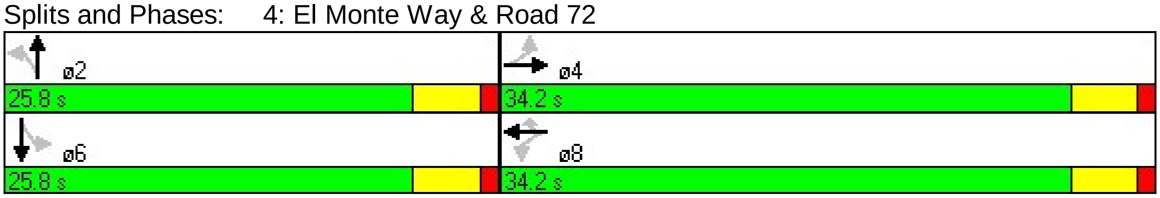
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989				0.850		0.951			0.948	
Flt Protected		0.997			0.997			0.973			0.982	
Satd. Flow (prot)	0	1837	0	0	1857	1583	0	1724	0	0	1734	0
Flt Permitted		0.968			0.966			0.890			0.916	
Satd. Flow (perm)	0	1783	0	0	1799	1583	0	1577	0	0	1618	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				24		9			35	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		510			1020			426			584	
Travel Time (s)		8.7			17.4			9.7			13.3	
Volume (vph)	21	322	31	25	385	22	13	2	8	30	21	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	350	34	27	418	24	14	2	9	33	23	35
Lane Group Flow (vph)	0	407	0	0	445	24	0	25	0	0	91	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phases	4	4		8	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	34.2	34.2	0.0	34.2	34.2	34.2	25.8	25.8	0.0	25.8	25.8	0.0
Total Split (%)	57.0%	57.0%	0.0%	57.0%	57.0%	57.0%	43.0%	43.0%	0.0%	43.0%	43.0%	0.0%
Maximum Green (s)	29.7	29.7		29.7	29.7	29.7	21.3	21.3		21.3	21.3	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)		12.6			12.6	12.6		7.3			7.3	
Actuated g/C Ratio		0.45			0.45	0.45		0.26			0.26	
v/c Ratio		0.51			0.55	0.03		0.06			0.20	
Control Delay		7.8			8.6	2.4		8.5			8.2	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		7.8			8.6	2.4		8.5			8.2	
LOS		A			A	A		A			A	
Approach Delay		7.8			8.3			8.5			8.2	
Approach LOS		A			A			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		31			36	0		2			6	
Queue Length 95th (ft)		82			94	6		14			32	
Internal Link Dist (ft)		430			940			346			504	
Turn Bay Length (ft)												
Base Capacity (vph)		1188			1195	1060		817			851	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.34			0.37	0.02		0.03			0.11	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 28.2	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 48.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: El Monte Way & Road 72



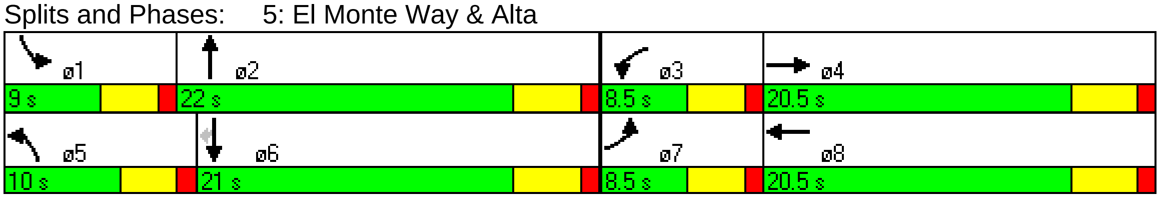
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.950			0.961			0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3362	0	1770	3401	0	1770	3451	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3362	0	1770	3401	0	1770	3451	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		111			83			39				132
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2072			1004			1101			607	
Travel Time (s)		47.1			22.8			25.0			13.8	
Volume (vph)	71	207	102	80	281	100	111	281	55	106	247	121
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	225	111	87	305	109	121	305	60	115	268	132
Lane Group Flow (vph)	77	336	0	87	414	0	121	365	0	115	268	132
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Detector Phases	7	4		3	8		5	2		1	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5		8.5	20.5		8.5	20.5	20.5
Total Split (s)	8.5	20.5	0.0	8.5	20.5	0.0	10.0	22.0	0.0	9.0	21.0	21.0
Total Split (%)	14.2%	34.2%	0.0%	14.2%	34.2%	0.0%	16.7%	36.7%	0.0%	15.0%	35.0%	35.0%
Maximum Green (s)	4.5	16.0		4.5	16.0		6.0	17.5		5.0	16.5	16.5
Yellow Time (s)	3.0	3.5		3.0	3.5		3.0	3.5		3.0	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Walk Time (s)		5.0			5.0			5.0			5.0	5.0
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	4.8	10.9		4.8	12.6		6.3	13.2		5.3	12.5	12.5
Actuated g/C Ratio	0.10	0.24		0.10	0.28		0.13	0.29		0.11	0.27	0.27
v/c Ratio	0.45	0.38		0.49	0.41		0.52	0.36		0.58	0.53	0.25
Control Delay	35.6	12.7		37.2	14.2		34.4	14.1		40.6	20.6	5.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.6	12.7		37.2	14.2		34.4	14.1		40.6	20.6	5.2
LOS	D	B		D	B		C	B		D	C	A
Approach Delay		17.0			18.2			19.1			21.1	
Approach LOS		B			B			B			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	22	29		25	44		34	39		33	68	0
Queue Length 95th (ft)	#79	62		#91	85		#113	77		#117	141	32
Internal Link Dist (ft)		1992			924			1021			527	
Turn Bay Length (ft)												
Base Capacity (vph)	172	1213		178	1247		234	1312		197	663	648
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.45	0.28		0.49	0.33		0.52	0.28		0.58	0.40	0.20

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 45.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 19.0 Intersection LOS: B
Intersection Capacity Utilization 47.4% ICU Level of Service A
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: El Monte Way & Alta



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	7	8	47	10	7	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	9	51	11	8	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	118	57			62	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	118	57			62	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	873	1010			1541	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	62	54
Volume Left	8	0	8
Volume Right	9	11	0
cSH	941	1700	1541
Volume to Capacity	0.02	0.04	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.9	0.0	1.1
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	1.1
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.902			0.997				0.850
Flt Protected	0.950				0.999		0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	0	1679	0	1770	1857	0	1770	1863	1583
Flt Permitted	0.726				0.998		0.535			0.509		
Satd. Flow (perm)	1352	1863	1583	0	1677	0	997	1857	0	948	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			40		34			2				74
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		862			220			1064			1101	
Travel Time (s)		19.6			5.0			24.2			25.0	
Volume (vph)	50	9	37	1	11	31	30	271	6	44	257	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	10	40	1	12	34	33	295	7	48	279	74
Lane Group Flow (vph)	54	10	40	0	47	0	33	302	0	48	279	74
Turn Type	Perm		Perm	Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phases	4	4	4	8	8		2	2		6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		20.5	20.5		20.5	20.5	20.5
Total Split (s)	30.5	30.5	30.5	30.5	30.5	0.0	29.5	29.5	0.0	29.5	29.5	29.5
Total Split (%)	50.8%	50.8%	50.8%	50.8%	50.8%	0.0%	49.2%	49.2%	0.0%	49.2%	49.2%	49.2%
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)	10.7	10.7	10.7		10.6		35.7	35.7		35.7	35.7	35.7
Actuated g/C Ratio	0.19	0.19	0.19		0.19		0.68	0.68		0.68	0.68	0.68
v/c Ratio	0.21	0.03	0.12		0.14		0.05	0.24		0.07	0.22	0.07
Control Delay	9.6	7.8	4.3		5.3		4.7	4.6		4.8	4.5	1.8
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	9.6	7.8	4.3		5.3		4.7	4.6		4.8	4.5	1.8
LOS	A	A	A		A		A	A		A	A	A
Approach Delay		7.4			5.3			4.6			4.1	
Approach LOS		A			A			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	7	1	0		2		2	23		3	21	0
Queue Length 95th (ft)	20	6	10		13		10	54		13	50	9
Internal Link Dist (ft)		782			140			984			1021	
Turn Bay Length (ft)												
Base Capacity (vph)	578	797	700		737		768	1430		730	1435	1236
Starvation Cap Reductn	0	0	0		0		0	0		0	0	0
Spillback Cap Reductn	0	0	0		0		0	0		0	0	0
Storage Cap Reductn	0	0	0		0		0	0		0	0	0
Reduced v/c Ratio	0.09	0.01	0.06		0.06		0.04	0.21		0.07	0.19	0.06

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 52.5

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

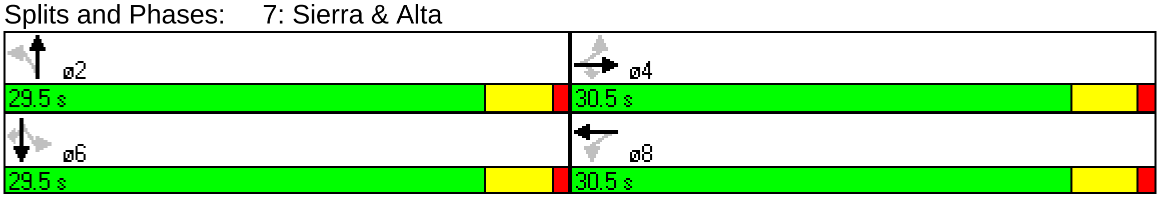
Maximum v/c Ratio: 0.24

Intersection Signal Delay: 4.7 Intersection LOS: A

Intersection Capacity Utilization 37.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Sierra & Alta



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	20	5	25	28	33	4	166	21	38	133	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	22	5	27	30	36	4	180	23	41	145	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	483	443	148	448	435	192	152			203		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	483	443	148	448	435	192	152			203		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	96	99	94	94	96	100			97		
cM capacity (veh/h)	440	492	898	488	497	850	1429			1368		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	93	208	193
Volume Left	1	27	4	41
Volume Right	5	36	23	8
cSH	536	587	1429	1368
Volume to Capacity	0.05	0.16	0.00	0.03
Queue Length 95th (ft)	4	14	0	2
Control Delay (s)	12.1	12.3	0.2	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	12.1	12.3	0.2	1.8
Approach LOS	B	B		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	77	1	38	72	1	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	1	41	78	1	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			85		245	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		245	84
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	96
cM capacity (veh/h)			1512		723	975

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	85	120	37
Volume Left	0	41	1
Volume Right	1	0	36
cSH	1700	1512	965
Volume to Capacity	0.05	0.03	0.04
Queue Length 95th (ft)	0	2	3
Control Delay (s)	0.0	2.7	8.9
Lane LOS		A	A
Approach Delay (s)	0.0	2.7	8.9
Approach LOS			A

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	37	80	74	13	5	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	87	80	14	5	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	95				255	88
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	95				255	88
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				99	95
cM capacity (veh/h)	1499				714	971

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	127	95	51
Volume Left	40	0	5
Volume Right	0	14	46
cSH	1499	1700	935
Volume to Capacity	0.03	0.06	0.05
Queue Length 95th (ft)	2	0	4
Control Delay (s)	2.5	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	2.5	0.0	9.1
Approach LOS			A

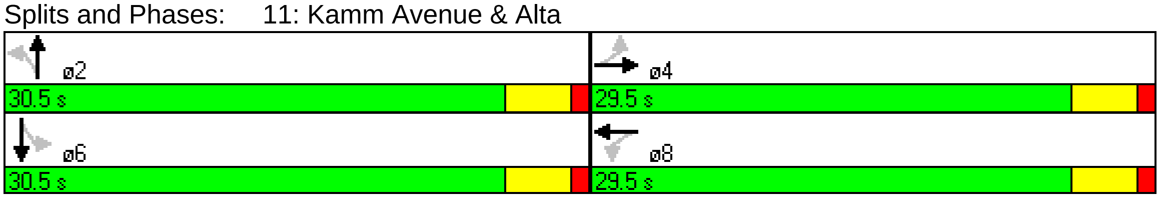
Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.930			0.975			0.989	
Flt Protected		0.988			0.994		0.950			0.950		
Satd. Flow (prot)	0	1822	0	0	1722	0	1770	1816	0	1770	1842	0
Flt Permitted		0.924			0.965		0.585			0.516		
Satd. Flow (perm)	0	1704	0	0	1672	0	1090	1816	0	961	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			89			21			9	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2598			1029			672			1064	
Travel Time (s)		59.0			23.4			15.3			24.2	
Volume (vph)	23	64	7	20	55	82	12	232	46	83	202	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	70	8	22	60	89	13	252	50	90	220	18
Lane Group Flow (vph)	0	103	0	0	171	0	13	302	0	90	238	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5		20.5	20.5	
Total Split (s)	29.5	29.5	0.0	29.5	29.5	0.0	30.5	30.5	0.0	30.5	30.5	0.0
Total Split (%)	49.2%	49.2%	0.0%	49.2%	49.2%	0.0%	50.8%	50.8%	0.0%	50.8%	50.8%	0.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		9.2			9.2		19.4	19.4		19.4	19.4	
Actuated g/C Ratio		0.24			0.24		0.54	0.54		0.54	0.54	
v/c Ratio		0.24			0.36		0.02	0.30		0.17	0.24	
Control Delay		8.4			6.4		5.2	6.0		6.5	5.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.4			6.4		5.2	6.0		6.5	5.8	
LOS		A			A		A	A		A	A	
Approach Delay		8.4			6.4			6.0			6.0	
Approach LOS		A			A			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		8			7		1	21		6	17	
Queue Length 95th (ft)		30			33		6	59		24	48	
Internal Link Dist (ft)		2518			949			592			984	
Turn Bay Length (ft)												
Base Capacity (vph)		858			882		761	1274		671	1288	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.12			0.19		0.02	0.24		0.13	0.18	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 35.7	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 6.3	Intersection LOS: A
Intersection Capacity Utilization 39.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 11: Kamm Avenue & Alta



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	87	19	35	106	2	7	44	34	1	47	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	95	21	38	115	2	8	48	37	1	51	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	117			115			327	298	105	358	308	116
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	117			115			327	298	105	358	308	116
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			99	92	96	100	91	100
cM capacity (veh/h)	1471			1474			571	598	950	528	591	936

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	115	155	92	57
Volume Left	0	38	8	1
Volume Right	21	2	37	4
cSH	1471	1474	699	607
Volume to Capacity	0.00	0.03	0.13	0.09
Queue Length 95th (ft)	0	2	11	8
Control Delay (s)	0.0	2.0	10.9	11.5
Lane LOS		A	B	B
Approach Delay (s)	0.0	2.0	10.9	11.5
Approach LOS			B	B

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.968				0.850		0.967	
Flt Protected	0.950			0.950			0.950				0.970	
Satd. Flow (prot)	1770	1863	0	1770	1803	0	1770	1863	1583	0	1747	0
Flt Permitted	0.401			0.413			0.703				0.854	
Satd. Flow (perm)	747	1863	0	769	1803	0	1310	1863	1583	0	1538	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					33				8		20	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1020			1052			1096			626	
Travel Time (s)		17.4			17.9			24.9			14.2	
Volume (vph)	19	402	1	31	326	89	87	19	7	47	11	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	437	1	34	354	97	95	21	8	51	12	20
Lane Group Flow (vph)	21	438	0	34	451	0	95	21	8	0	83	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5	20.5	20.5	20.5	
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	26.0	26.0	26.0	26.0	26.0	0.0
Total Split (%)	56.7%	56.7%	0.0%	56.7%	56.7%	0.0%	43.3%	43.3%	43.3%	43.3%	43.3%	0.0%
Maximum Green (s)	29.5	29.5		29.5	29.5		21.5	21.5	21.5	21.5	21.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	12.8	12.8		12.8	12.8		8.3	8.3	8.3		8.3	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.28	0.28	0.28		0.28	
v/c Ratio	0.07	0.54		0.10	0.56		0.26	0.04	0.02		0.19	
Control Delay	5.5	9.1		5.9	8.9		11.7	9.6	6.7		8.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	5.5	9.1		5.9	8.9		11.7	9.6	6.7		8.9	
LOS	A	A		A	A		B	A	A		A	
Approach Delay		8.9			8.7			11.0			8.9	
Approach LOS		A			A			B			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	2	39		2	37		10	2	0		6	
Queue Length 95th (ft)	9	106		13	104		43	14	6		33	
Internal Link Dist (ft)		940			972			1016			546	
Turn Bay Length (ft)												
Base Capacity (vph)	484	1208		499	1181		676	961	821		803	
Starvation Cap Reductn	0	0		0	0		0	0	0		0	
Spillback Cap Reductn	0	0		0	0		0	0	0		0	
Storage Cap Reductn	0	0		0	0		0	0	0		0	
Reduced v/c Ratio	0.04	0.36		0.07	0.38		0.14	0.02	0.01		0.10	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 29.5

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

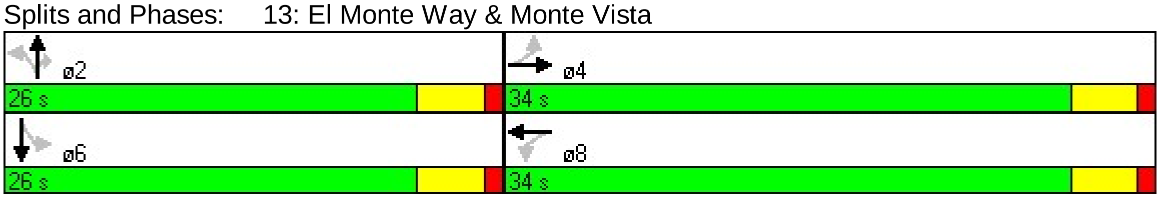
Maximum v/c Ratio: 0.56

Intersection Signal Delay: 9.1 Intersection LOS: A

Intersection Capacity Utilization 43.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 13: El Monte Way & Monte Vista

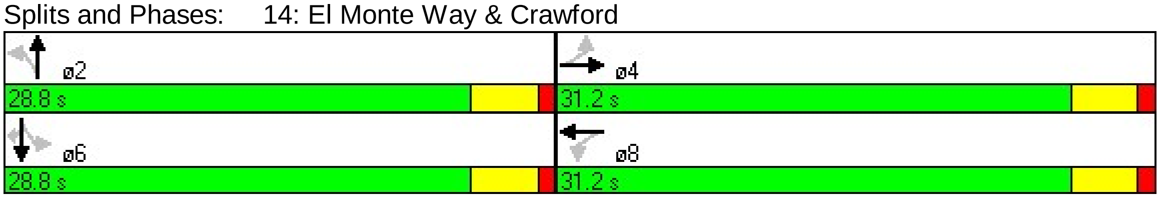


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.961			0.980				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3426	0	1770	3401	0	1770	1825	0	1770	1863	1583
Flt Permitted	0.488			0.572			0.524			0.560		
Satd. Flow (perm)	909	3426	0	1065	3401	0	976	1825	0	1043	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			108			16				121
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1138			1059			1385			2178	
Travel Time (s)		19.4			18.1			23.6			37.1	
Volume (vph)	121	198	53	40	270	95	51	186	29	105	241	103
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	142	233	62	47	318	112	60	219	34	124	284	121
Lane Group Flow (vph)	142	295	0	47	430	0	60	253	0	124	284	121
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phases	4	4		8	8		2	2		6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5		20.5	20.5	20.5
Total Split (s)	31.2	31.2	0.0	31.2	31.2	0.0	28.8	28.8	0.0	28.8	28.8	28.8
Total Split (%)	52.0%	52.0%	0.0%	52.0%	52.0%	0.0%	48.0%	48.0%	0.0%	48.0%	48.0%	48.0%
Maximum Green (s)	26.7	26.7		26.7	26.7		24.3	24.3		24.3	24.3	24.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	11.0
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.36	0.36		0.36	0.36	0.36
v/c Ratio	0.44	0.23		0.12	0.33		0.17	0.38		0.33	0.42	0.19
Control Delay	12.9	6.2		8.2	6.3		9.1	9.4		10.9	10.3	3.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	12.9	6.2		8.2	6.3		9.1	9.4		10.9	10.3	3.1
LOS	B	A		A	A		A	A		B	B	A
Approach Delay		8.4			6.5			9.3			8.8	
Approach LOS		A			A			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	14	11		4	15		5	22		12	28	0
Queue Length 95th (ft)	54	34		20	45		26	77		48	90	19
Internal Link Dist (ft)		1058			979			1305			2098	
Turn Bay Length (ft)												
Base Capacity (vph)	536	2047		629	2052		554	1043		592	1058	951
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.26	0.14		0.07	0.21		0.11	0.24		0.21	0.27	0.13

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 30.6	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 47.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: El Monte Way & Crawford



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	138	63	436	118	33	409
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	160	73	507	137	38	476

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	234	338	306	197	317
Volume Left (vph)	160	0	0	38	0
Volume Right (vph)	73	0	137	0	0
Hadj (s)	-0.02	0.03	-0.28	0.13	0.03
Departure Headway (s)	6.3	6.1	5.7	6.3	6.2
Degree Utilization, x	0.41	0.57	0.49	0.34	0.55
Capacity (veh/h)	541	572	611	552	566
Control Delay (s)	13.6	15.6	12.9	11.4	15.2
Approach Delay (s)	13.6	14.3		13.7	
Approach LOS	B	B		B	

Intersection Summary			
Delay	14.0		
HCM Level of Service	B		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	3	87	1	1	8	149	233	3	1	353	38
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	11	4	109	1	1	10	186	291	4	1	441	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1142	1135	465	1244	1157	293	489			295		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1142	1135	465	1244	1157	293	489			295		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	98	82	99	99	99	83			100		
cM capacity (veh/h)	151	167	597	105	162	746	1074			1266		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	124	12	186	295	490
Volume Left	11	1	186	0	1
Volume Right	109	10	0	4	48
cSH	443	379	1074	1700	1266
Volume to Capacity	0.28	0.03	0.17	0.17	0.00
Queue Length 95th (ft)	28	3	16	0	0
Control Delay (s)	16.2	14.8	9.1	0.0	0.0
Lane LOS	C	B	A		A
Approach Delay (s)	16.2	14.8	3.5		0.0
Approach LOS	C	B			

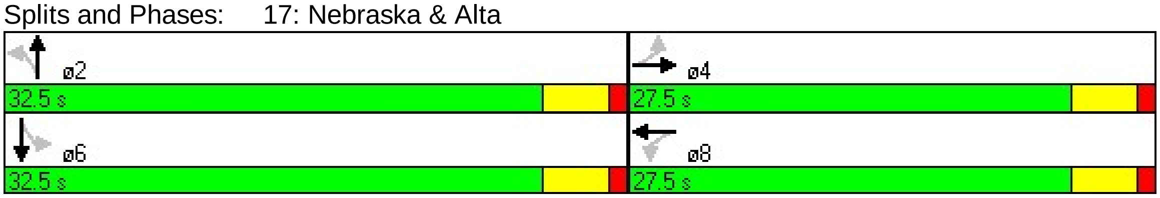
Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.972			0.989			0.990	
Flt Protected		0.986			0.980		0.950			0.950		
Satd. Flow (prot)	0	1765	0	0	1774	0	1770	1842	0	1770	1844	0
Flt Permitted		0.910			0.867		0.416			0.438		
Satd. Flow (perm)	0	1629	0	0	1570	0	775	1842	0	816	1844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			25			9			8	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		510			534			524			327	
Travel Time (s)		11.6			12.1			11.9			7.4	
Volume (vph)	27	40	27	47	46	24	71	312	25	39	334	23
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	32	47	32	55	54	28	84	367	29	46	393	27
Lane Group Flow (vph)	0	111	0	0	137	0	84	396	0	46	420	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5		20.5	20.5	
Total Split (s)	27.5	27.5	0.0	27.5	27.5	0.0	32.5	32.5	0.0	32.5	32.5	0.0
Total Split (%)	45.8%	45.8%	0.0%	45.8%	45.8%	0.0%	54.2%	54.2%	0.0%	54.2%	54.2%	0.0%
Maximum Green (s)	23.0	23.0		23.0	23.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.8			10.9		30.6	30.6		30.6	30.6	
Actuated g/C Ratio		0.22			0.22		0.68	0.68		0.68	0.68	
v/c Ratio		0.29			0.37		0.16	0.32		0.08	0.34	
Control Delay		8.9			10.8		5.9	5.5		5.5	5.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.9			10.8		5.9	5.5		5.5	5.7	
LOS		A			B		A	A		A	A	
Approach Delay		8.9			10.8			5.6			5.6	
Approach LOS		A			B			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		8			12		6	34		3	36	
Queue Length 95th (ft)		36			45		25	85		15	91	
Internal Link Dist (ft)		430			454			444			247	
Turn Bay Length (ft)												
Base Capacity (vph)		716			687		598	1423		629	1424	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.20		0.14	0.28		0.07	0.29	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 45.1	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.37	
Intersection Signal Delay: 6.5	Intersection LOS: A
Intersection Capacity Utilization 42.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: Nebraska & Alta



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	442	25	32	354	47	42	143	82	33	95	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	480	27	35	385	51	46	155	89	36	103	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	526	471	290	159
Volume Left (vph)	18	35	46	36
Volume Right (vph)	27	51	89	20
Hadj (s)	0.01	-0.02	-0.12	0.01
Departure Headway (s)	7.0	7.0	7.7	8.4
Degree Utilization, x	1.03	0.92	0.62	0.37
Capacity (veh/h)	501	506	446	399
Control Delay (s)	74.3	48.6	22.4	16.3
Approach Delay (s)	74.3	48.6	22.4	16.3
Approach LOS	F	E	C	C

Intersection Summary			
Delay	49.1		
HCM Level of Service	E		
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	29	534	369	88	104	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	580	401	96	113	103
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	497				1092	449
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	497				1092	449
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				51	83
cM capacity (veh/h)	1067				230	610

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	612	497	216
Volume Left	32	0	113
Volume Right	0	96	103
cSH	1067	1700	328
Volume to Capacity	0.03	0.29	0.66
Queue Length 95th (ft)	2	0	111
Control Delay (s)	0.8	0.0	35.0
Lane LOS	A		D
Approach Delay (s)	0.8	0.0	35.0
Approach LOS			D

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	563	22	11	427	15	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	612	24	12	464	16	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				510		
pX, platoon unblocked					0.92	
vC, conflicting volume			636		1112	624
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			636		1121	624
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		92	96
cM capacity (veh/h)			948		208	485

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	636	476	35
Volume Left	0	12	16
Volume Right	24	0	18
cSH	1700	948	299
Volume to Capacity	0.37	0.01	0.12
Queue Length 95th (ft)	0	1	10
Control Delay (s)	0.0	0.4	18.6
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	18.6
Approach LOS			C

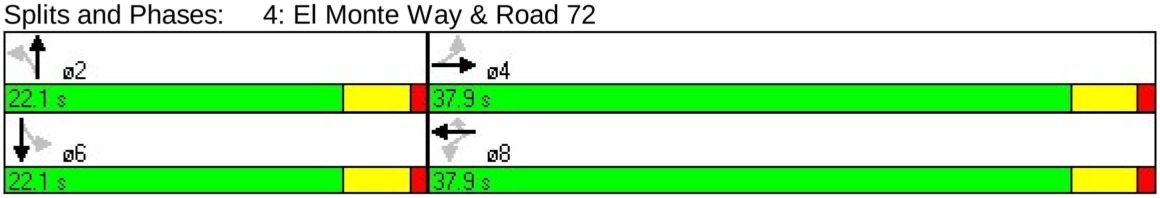
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850		0.948			0.948	
Flt Protected		0.998			0.997			0.984			0.977	
Satd. Flow (prot)	0	1850	0	0	1857	1583	0	1738	0	0	1725	0
Flt Permitted		0.980			0.958			0.906			0.863	
Satd. Flow (perm)	0	1816	0	0	1785	1583	0	1600	0	0	1524	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				48		38			30	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		510			1020			426			584	
Travel Time (s)		8.7			17.4			9.7			13.3	
Volume (vph)	19	557	23	24	437	44	29	26	35	33	11	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	605	25	26	475	48	32	28	38	36	12	30
Lane Group Flow (vph)	0	651	0	0	501	48	0	98	0	0	78	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phases	4	4		8	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	37.9	37.9	0.0	37.9	37.9	37.9	22.1	22.1	0.0	22.1	22.1	0.0
Total Split (%)	63.2%	63.2%	0.0%	63.2%	63.2%	63.2%	36.8%	36.8%	0.0%	36.8%	36.8%	0.0%
Maximum Green (s)	33.4	33.4		33.4	33.4	33.4	17.6	17.6		17.6	17.6	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)		17.9			17.9	17.9		7.8			7.8	
Actuated g/C Ratio		0.52			0.52	0.52		0.23			0.23	
v/c Ratio		0.68			0.54	0.06		0.25			0.21	
Control Delay		10.0			7.6	1.6		11.4			11.3	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		10.0			7.6	1.6		11.4			11.3	
LOS		A			A	A		B			B	
Approach Delay		10.0			7.0			11.4			11.3	
Approach LOS		A			A			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		63			44	0		8			7	
Queue Length 95th (ft)		161			112	8		45			39	
Internal Link Dist (ft)		430			940			346			504	
Turn Bay Length (ft)												
Base Capacity (vph)		1245			1222	1099		689			652	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.52			0.41	0.04		0.14			0.12	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 34.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 9.0	Intersection LOS: A
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: El Monte Way & Road 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.972			0.948			0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3440	0	1770	3355	0	1770	3465	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3440	0	1770	3355	0	1770	3465	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			132			24				189
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2072			1004			1101			607	
Travel Time (s)		47.1			22.8			25.0			13.8	
Volume (vph)	191	440	99	95	368	197	166	388	62	215	321	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	478	108	103	400	214	180	422	67	234	349	189
Lane Group Flow (vph)	208	586	0	103	614	0	180	489	0	234	349	189
Turn Type	Prot			Prot			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												6
Detector Phases	7	4		3	8		5	2		1	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5		8.5	20.5		8.5	20.5	20.5
Total Split (s)	13.2	22.9	0.0	10.8	20.5	0.0	12.1	21.3	0.0	15.0	24.2	24.2
Total Split (%)	18.9%	32.7%	0.0%	15.4%	29.3%	0.0%	17.3%	30.4%	0.0%	21.4%	34.6%	34.6%
Maximum Green (s)	9.2	18.4		6.8	16.0		8.1	16.8		11.0	19.7	19.7
Yellow Time (s)	3.0	3.5		3.0	3.5		3.0	3.5		3.0	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Walk Time (s)		5.0			5.0			5.0			5.0	5.0
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0			0			0			0	0
Act Effct Green (s)	9.3	19.3		6.6	14.2		8.2	14.2		10.6	16.6	16.6
Actuated g/C Ratio	0.14	0.30		0.10	0.22		0.13	0.22		0.16	0.26	0.26
v/c Ratio	0.81	0.56		0.59	0.73		0.80	0.63		0.80	0.73	0.34
Control Delay	56.4	21.7		45.0	24.1		58.4	25.8		50.6	31.8	5.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	56.4	21.7		45.0	24.1		58.4	25.8		50.6	31.8	5.4
LOS	E	C		D	C		E	C		D	C	A
Approach Delay		30.8			27.1			34.6			31.0	
Approach LOS		C			C			C			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	86	103		42	94		75	91		95	131	0
Queue Length 95th (ft)	#205	158		#106	152		#185	137		#215	215	42
Internal Link Dist (ft)		1992			924			1021			527	
Turn Bay Length (ft)												
Base Capacity (vph)	256	1083		181	933		225	909		303	556	605
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.81	0.54		0.57	0.66		0.80	0.54		0.77	0.63	0.31

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 64.5

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 30.8 Intersection LOS: C

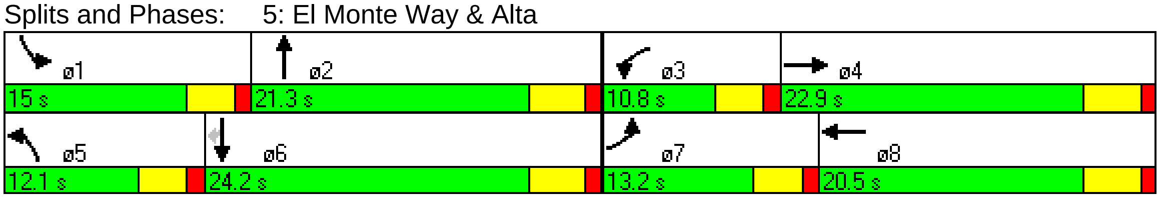
Intersection Capacity Utilization 66.5% ICU Level of Service C

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: El Monte Way & Alta



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	10	10	28	7	7	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	11	30	8	8	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	83	34			38	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	83	34			38	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	914	1039			1572	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	22	38	41
Volume Left	11	0	8
Volume Right	11	8	0
cSH	973	1700	1572
Volume to Capacity	0.02	0.02	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	1.4
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	1.4
Approach LOS	A		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

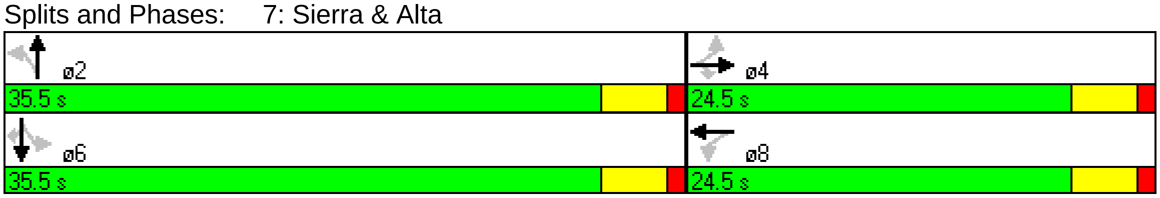
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50		50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.898			0.999				0.850
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	0	1669	0	1770	1861	0	1770	1863	1583
Flt Permitted	0.717				0.996		0.433			0.343		
Satd. Flow (perm)	1336	1863	1583	0	1666	0	807	1861	0	639	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126		46							26
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		862			220			1064			1101	
Travel Time (s)		19.6			5.0			24.2			25.0	
Volume (vph)	66	18	116	2	12	42	54	494	2	58	395	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	20	126	2	13	46	59	537	2	63	429	26
Lane Group Flow (vph)	72	20	126	0	61	0	59	539	0	63	429	26
Turn Type	Perm		Perm	Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phases	4	4	4	8	8		2	2		6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		20.5	20.5		20.5	20.5	20.5
Total Split (s)	24.5	24.5	24.5	24.5	24.5	0.0	35.5	35.5	0.0	35.5	35.5	35.5
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	0.0%	59.2%	59.2%	0.0%	59.2%	59.2%	59.2%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	Min
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)	10.9	10.9	10.9		10.9		33.3	33.3		33.3	33.3	33.3
Actuated g/C Ratio	0.20	0.20	0.20		0.20		0.63	0.63		0.63	0.63	0.63
v/c Ratio	0.27	0.05	0.30		0.17		0.12	0.46		0.16	0.37	0.03
Control Delay	13.9	11.6	5.3		7.0		5.1	6.5		5.7	5.7	2.2
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	13.9	11.6	5.3		7.0		5.1	6.5		5.7	5.7	2.2
LOS	B	B	A		A		A	A		A	A	A
Approach Delay		8.7			7.0			6.4			5.5	
Approach LOS		A			A			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	8	2	0		2		4	50		5	37	0
Queue Length 95th (ft)	39	15	29		23		18	128		20	94	6
Internal Link Dist (ft)		782			140			984			1021	
Turn Bay Length (ft)												
Base Capacity (vph)	497	693	668		649		585	1350		464	1352	1156
Starvation Cap Reductn	0	0	0		0		0	0		0	0	0
Spillback Cap Reductn	0	0	0		0		0	0		0	0	0
Storage Cap Reductn	0	0	0		0		0	0		0	0	0
Reduced v/c Ratio	0.14	0.03	0.19		0.09		0.10	0.40		0.14	0.32	0.02

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 52.9
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 6.5 Intersection LOS: A
Intersection Capacity Utilization 49.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Sierra & Alta



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	41	9	18	30	27	1	196	35	38	124	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	45	10	20	33	29	1	213	38	41	135	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	498	472	136	485	454	232	137			251		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	498	472	136	485	454	232	137			251		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	91	99	96	93	96	100			97		
cM capacity (veh/h)	430	475	913	441	486	807	1447			1314		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	55	82	252	178
Volume Left	1	20	1	41
Volume Right	10	29	38	2
cSH	517	552	1447	1314
Volume to Capacity	0.11	0.15	0.00	0.03
Queue Length 95th (ft)	9	13	0	2
Control Delay (s)	12.8	12.7	0.0	2.0
Lane LOS	B	B	A	A
Approach Delay (s)	12.8	12.7	0.0	2.0
Approach LOS	B	B		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	100	2	14	65	9	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	2	15	71	10	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			111		211	110
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			111		211	110
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	98
cM capacity (veh/h)			1479		769	944

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	111	86	29
Volume Left	0	15	10
Volume Right	2	0	20
cSH	1700	1479	877
Volume to Capacity	0.07	0.01	0.03
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	1.4	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	1.4	9.2
Approach LOS			A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	22	104	59	10	11	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	113	64	11	12	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	75				230	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				230	70
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	98
cM capacity (veh/h)	1524				746	993

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	137	75	33
Volume Left	24	0	12
Volume Right	0	11	21
cSH	1524	1700	886
Volume to Capacity	0.02	0.04	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	1.4	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	1.4	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.926			0.988			0.990	
Flt Protected		0.977			0.993		0.950			0.950		
Satd. Flow (prot)	0	1805	0	0	1713	0	1770	1840	0	1770	1844	0
Flt Permitted		0.809			0.955		0.434			0.285		
Satd. Flow (perm)	0	1495	0	0	1647	0	808	1840	0	531	1844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			91			12			9	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2598			1029			672			1064	
Travel Time (s)		59.0			23.4			15.3			24.2	
Volume (vph)	61	59	7	21	48	84	17	532	47	129	374	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	64	8	23	52	91	18	578	51	140	407	29
Lane Group Flow (vph)	0	138	0	0	166	0	18	629	0	140	436	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5		20.5	20.5	
Total Split (s)	23.5	23.5	0.0	23.5	23.5	0.0	36.5	36.5	0.0	36.5	36.5	0.0
Total Split (%)	39.2%	39.2%	0.0%	39.2%	39.2%	0.0%	60.8%	60.8%	0.0%	60.8%	60.8%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.3			10.2		27.9	27.9		27.9	27.9	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
v/c Ratio		0.41			0.38		0.04	0.54		0.42	0.37	
Control Delay		16.6			9.7		4.9	8.0		10.8	6.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		16.6			9.7		4.9	8.0		10.8	6.2	
LOS		B			A		A	A		B	A	
Approach Delay		16.6			9.7			7.9			7.3	
Approach LOS		B			A			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		19			11		1	70		14	42	
Queue Length 95th (ft)		75			58		9	188		63	113	
Internal Link Dist (ft)		2518			949			592			984	
Turn Bay Length (ft)												
Base Capacity (vph)		550			661		575	1313		378	1315	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.25		0.03	0.48		0.37	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 44.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 8.7 Intersection LOS: A
Intersection Capacity Utilization 66.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 11: Kamm Avenue & Alta

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	132	3	10	134	1	2	22	3	1	12	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	143	3	11	146	1	2	24	3	1	13	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	147			147			324	316	145	330	317	146
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	147			147			324	316	145	330	317	146
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	96	100	100	98	100
cM capacity (veh/h)	1435			1435			613	595	902	598	594	901

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	148	158	29	16
Volume Left	1	11	2	1
Volume Right	3	1	3	2
cSH	1435	1435	620	623
Volume to Capacity	0.00	0.01	0.05	0.03
Queue Length 95th (ft)	0	1	4	2
Control Delay (s)	0.1	0.6	11.1	10.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.6	11.1	10.9
Approach LOS			B	B

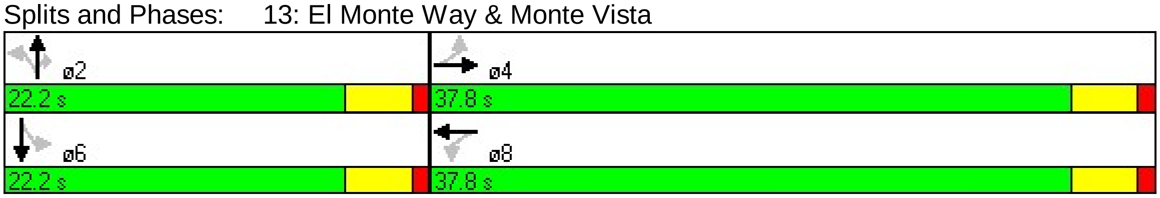
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.973				0.850		0.971	
Flt Protected	0.950			0.950			0.950				0.980	
Satd. Flow (prot)	1770	1842	0	1770	1812	0	1770	1863	1583	0	1773	0
Flt Permitted	0.415			0.311			0.700				0.873	
Satd. Flow (perm)	773	1842	0	579	1812	0	1304	1863	1583	0	1579	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			31				50		23	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1020			1052			1096			626	
Travel Time (s)		17.4			17.9			24.9			14.2	
Volume (vph)	49	522	41	37	356	79	112	59	46	51	48	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	567	45	40	387	86	122	64	50	55	52	29
Lane Group Flow (vph)	53	612	0	40	473	0	122	64	50	0	136	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5	20.5	20.5	20.5	
Total Split (s)	37.8	37.8	0.0	37.8	37.8	0.0	22.2	22.2	22.2	22.2	22.2	0.0
Total Split (%)	63.0%	63.0%	0.0%	63.0%	63.0%	0.0%	37.0%	37.0%	37.0%	37.0%	37.0%	0.0%
Maximum Green (s)	33.3	33.3		33.3	33.3		17.7	17.7	17.7	17.7	17.7	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	17.7	17.7		17.7	17.7		9.6	9.6	9.6		9.6	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.27	0.27	0.27		0.27	
v/c Ratio	0.14	0.67		0.14	0.52		0.35	0.13	0.11		0.31	
Control Delay	6.1	11.0		6.5	8.1		16.2	13.0	5.9		13.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	6.1	11.0		6.5	8.1		16.2	13.0	5.9		13.1	
LOS	A	B		A	A		B	B	A		B	
Approach Delay		10.6			8.0			13.1			13.1	
Approach LOS		B			A			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	4	68		3	44		18	9	0		16	
Queue Length 95th (ft)	20	186		17	125		69	39	20		66	
Internal Link Dist (ft)		940			972			1016			546	
Turn Bay Length (ft)												
Base Capacity (vph)	509	1218		381	1204		548	783	694		677	
Starvation Cap Reductn	0	0		0	0		0	0	0		0	
Spillback Cap Reductn	0	0		0	0		0	0	0		0	
Storage Cap Reductn	0	0		0	0		0	0	0		0	
Reduced v/c Ratio	0.10	0.50		0.10	0.39		0.22	0.08	0.07		0.20	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 36	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: El Monte Way & Monte Vista



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.962			0.955				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3461	0	1770	3405	0	1770	1779	0	1770	1863	1583
Flt Permitted	0.436			0.370			0.662			0.666		
Satd. Flow (perm)	812	3461	0	689	3405	0	1233	1779	0	1241	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			99			43				74
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1138			1059			1385			2178	
Travel Time (s)		19.4			18.1			23.6			37.1	
Volume (vph)	86	479	82	42	347	117	56	91	40	150	138	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	521	89	46	377	127	61	99	43	163	150	74
Lane Group Flow (vph)	93	610	0	46	504	0	61	142	0	163	150	74
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phases	4	4		8	8		2	2		6	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5		20.5	20.5	20.5
Total Split (s)	30.7	30.7	0.0	30.7	30.7	0.0	29.3	29.3	0.0	29.3	29.3	29.3
Total Split (%)	51.2%	51.2%	0.0%	51.2%	51.2%	0.0%	48.8%	48.8%	0.0%	48.8%	48.8%	48.8%
Maximum Green (s)	26.2	26.2		26.2	26.2		24.8	24.8		24.8	24.8	24.8
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	11.5	11.5		11.5	11.5		10.0	10.0		10.0	10.0	10.0
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.33	0.33		0.33	0.33	0.33
v/c Ratio	0.30	0.45		0.17	0.37		0.15	0.23		0.39	0.24	0.13
Control Delay	10.2	7.9		8.8	6.4		8.7	6.9		11.5	8.9	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	10.2	7.9		8.8	6.4		8.7	6.9		11.5	8.9	3.4
LOS	B	A		A	A		A	A		B	A	A
Approach Delay		8.2			6.6			7.4			9.0	
Approach LOS		A			A			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	8	28		4	18		6	10		17	15	0
Queue Length 95th (ft)	38	76		22	56		26	40		61	51	17
Internal Link Dist (ft)		1058			979			1305			2098	
Turn Bay Length (ft)												
Base Capacity (vph)	485	2084		412	2074		698	1026		702	1055	928
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.19	0.29		0.11	0.24		0.09	0.14		0.23	0.14	0.08

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 30

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

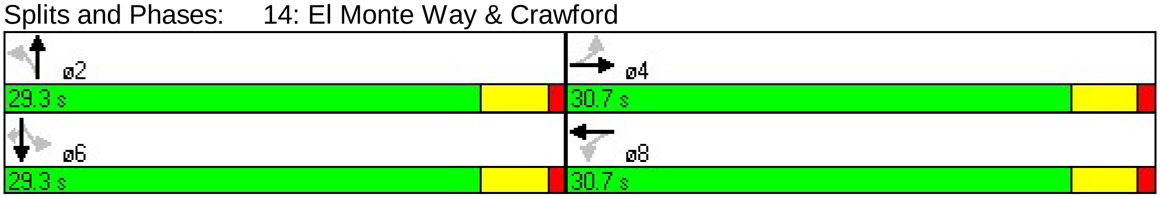
Maximum v/c Ratio: 0.45

Intersection Signal Delay: 7.8 Intersection LOS: A

Intersection Capacity Utilization 48.1% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 14: El Monte Way & Crawford



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	86	37	451	125	45	440
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	100	43	524	145	52	512

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	143	350	320	223	341
Volume Left (vph)	100	0	0	52	0
Volume Right (vph)	43	0	145	0	0
Hadj (s)	-0.01	0.03	-0.28	0.15	0.03
Departure Headway (s)	6.3	5.7	5.4	5.9	5.8
Degree Utilization, x	0.25	0.56	0.48	0.37	0.55
Capacity (veh/h)	531	617	651	588	605
Control Delay (s)	11.4	14.4	12.1	11.1	14.5
Approach Delay (s)	11.4	13.3		13.2	
Approach LOS	B	B		B	

Intersection Summary			
Delay	13.1		
HCM Level of Service	B		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	4	68	2	1	0	48	262	1	0	298	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	4	74	2	1	0	52	285	1	0	324	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	721	721	331	797	728	285	338			286		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	721	721	331	797	728	285	338			286		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	90	99	100	100	96			100		
cM capacity (veh/h)	331	338	711	261	335	754	1221			1276		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	89	3	52	286	338
Volume Left	11	2	52	0	0
Volume Right	74	0	0	1	14
cSH	595	282	1221	1700	1276
Volume to Capacity	0.15	0.01	0.04	0.17	0.00
Queue Length 95th (ft)	13	1	3	0	0
Control Delay (s)	12.1	17.9	8.1	0.0	0.0
Lane LOS	B	C	A		
Approach Delay (s)	12.1	17.9	1.2		0.0
Approach LOS	B	C			

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.972			0.988			0.994	
Flt Protected		0.995			0.977		0.950			0.950		
Satd. Flow (prot)	0	1794	0	0	1769	0	1770	1840	0	1770	1852	0
Flt Permitted		0.972			0.831		0.427			0.421		
Satd. Flow (perm)	0	1753	0	0	1505	0	795	1840	0	784	1852	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			25			10			5	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		510			534			524			327	
Travel Time (s)		11.6			12.1			11.9			7.4	
Volume (vph)	12	77	28	67	48	29	48	351	29	42	361	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	84	30	73	52	32	52	382	32	46	392	16
Lane Group Flow (vph)	0	127	0	0	157	0	52	414	0	46	408	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.5	20.5		20.5	20.5		20.5	20.5		20.5	20.5	
Total Split (s)	27.5	27.5	0.0	27.5	27.5	0.0	32.5	32.5	0.0	32.5	32.5	0.0
Total Split (%)	45.8%	45.8%	0.0%	45.8%	45.8%	0.0%	54.2%	54.2%	0.0%	54.2%	54.2%	0.0%
Maximum Green (s)	23.0	23.0		23.0	23.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		9.9			10.0		24.6	24.6		24.6	24.6	
Actuated g/C Ratio		0.24			0.24		0.67	0.67		0.67	0.67	
v/c Ratio		0.28			0.41		0.10	0.34		0.09	0.33	
Control Delay		8.8			11.2		6.0	6.1		6.0	6.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.8			11.2		6.0	6.1		6.0	6.1	
LOS		A			B		A	A		A	A	
Approach Delay		8.8			11.2			6.1			6.1	
Approach LOS		A			B			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		10			14		4	37		3	37	
Queue Length 95th (ft)		43			56		19	105		17	104	
Internal Link Dist (ft)		430			454			444			247	
Turn Bay Length (ft)												
Base Capacity (vph)		810			695		608	1410		600	1418	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.23		0.09	0.29		0.08	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 36.7
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 7.0 Intersection LOS: A
Intersection Capacity Utilization 48.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 17: Nebraska & Alta

APPENDIX C

WASTEWATER TREATMENT FACILITY REPORTS

2005

Month	Average Total Flow	Limits		Average BOD Loading	Average TSS Loading
January	2.1		3.14	155	210
February	1.9		3.14	300	225
March	2.1		3.14	240	255
April	2.0		3.14	170	185
May	2.1		3.14	285	330
June	2.1		3.14	160	270
July	2.1		3.14	145	175
August	2.1		3.14	210	150
September	2.1		3.14	255	290
October	2.0		3.14	330	190
November	2.0		3.14	285	225
December	2.0		3.14	360	305
for Year	2.0			241.3	234.2
2005 Pop	19,297				
Per Person	106.0				

City of Dinuba Self Monitoring

INFLUENT EFFLUENT JANUARY 2005

Jan 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date	MGD	MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	1.7	2.6												
2	2.3	3.0												
3	2.7	4.0												
4	2.1	3.8	7.0	180	170	38	7.9	ND	ND	ND	ND	38	700	ND
5	2.2	3.0												
6	2.2	2.7												
7	2.3	3.1												
8	2.6	4.2												
9	2.3	4.3												
10	2.4	3.2												
11	2.4	3.7												
12	2.2	2.8	6.2	240	140	36	7.9		ND	ND				
13	2.2	2.9												
14	2.0	2.6												
15	2.0	2.8												
16	1.9	2.6												
17	2.1	2.9												
18	2.4	2.7	5.3				7.9			ND				
19	2.0	2.7												
20	2.2	2.8												
21	1.9	2.5												
22	1.8	2.7												
23	1.8	2.6												
24	2.0	2.5												
25	2.0	2.6												
26	2.3	4.2												
27	2.0	2.5	5.3				7.9			ND				
28	2.2	3.8												
29	2.0	2.9												
30	1.8	2.9												
31	2.0	2.5												
Max	2.7	4.3	7.0	240	170	38	7.9	ND	ND	ND	ND	38.0	700	ND
Ave	2.1	3.0	6.0	210	155	37	7.9	ND	ND	ND	ND	38.0	700	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT | EFFLUENT | FEBRUARY 2005

Feb 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date	MGD	MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	1.9	2.6												
2	2.0	2.5												
3	1.9	2.5	7.4	210	280	28	7.9	ND	ND	ND	1.1	10	1000	ND
4	1.9	2.7												
5	1.6	2.6												
6	1.8	2.8												
7	1.9	2.8												
8	2.0	2.5	7.6	240	320	93	8.4		ND	ND				
9	1.9	2.4												
10	2.1	2.6												
11	2.0	3.0												
12	1.9	2.9												
13	1.7	2.8												
14	2.0	2.6												
15	2.2	3.4												
16	1.9	2.6	23.0				7.9			ND				
17	2.2	2.5												
18	2.1	4.8												
19	1.8	3.3												
20	1.9	2.7												
21	1.9	3.0												
22	1.9	2.6												
23	1.9	2.5												
24	1.8	2.6	6.5				7.9			ND				
25	2.1	2.4												
26	1.7	2.7												
27	1.8	2.6												
28	1.8	2.5												
Max	2.2	4.8	23.0	240	320	93	8.4	ND	ND	ND	1.1	10	1000	ND
Ave	1.9	2.8	11.1	225	300	61	8.0	ND	ND	ND	1.1	10	1000	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT EFFLUENT MARCH 2005

Mar 05 Date	Total Flow MGD	Max Daily Flow MGD	Settle. Solids mg/L	Susp. Solids mg/l	BOD 5day mg/L	Oil Grease mg/L	pH	Settle Solids mg/L	Susp. Solids mg/L	BOD 5 day mg/L	KJ Nitro mg/L	Nit. mg/L	EC mg/L
1	1.9	2.5											
2	1.9	2.6											
3	2.1	2.7	14.0	280	260	35	7.9	ND	6.0	ND	1.4	2.0	890
4	2.3	4.3											
5	2.0	3.9											
6	1.9	2.7											
7	2.0	2.8											
8	2.2	3.3											
9	2.2	3.2											
10	2.2	3.3	5.3	230	220	30	8.1		ND	ND			
11	2.1	2.7											
12	2.1	2.8											
13	2.0	2.8											
14	1.8	2.8											
15	2.0	2.6											
16	2.0	2.8	7.6				8.0			ND			
17	2.0	2.7											
18	2.2	2.6											
19	2.6	4.3											
20	2.0	4.3											
21	2.3	2.9											
22	2.4	4.0	13.0				7.9			ND			
23	2.2	3.2											
24	2.0	2.7											
25	2.1	2.9											
26	1.8	2.8											
27	1.7	2.7											
28	2.1	2.8											
29	2.1	2.7											
30	2.1	2.8	4.3				7.8			ND			
31	2.1	2.7											
Max	2.6	4.3	14.0	280	260	35	8.1	ND	6.0	ND	1.4	2.0	890
Ave	2.1	3.0	8.8	255	240	33	7.9	ND	6.0	ND	1.4	2.0	890
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**

City of Dinuba Self Monitoring

INFLUENT EFFLUENT MARCH 2005

Oil
Grease
mg/L
ND
ND
ND

City of Dinuba Self Monitoring

INFLUENT EFFLUENT APRIL 2005

April 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date	MGD	MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	2.0	2.7												
2	1.9	2.6												
3	2.0	2.7												
4	2.0	2.8												
5	2.0	2.8	6.3	140	170	29	7.9	ND	6.0	ND	2.2	1.0	870	ND
6	2.0	2.7												
7	2.0	2.7												
8	2.0	2.8												
9	1.9	2.8												
10	2.0	2.9												
11	2.1	2.9												
12	2.0	2.5												
13	2.0	2.8	8.9	230	170	28	7.9		ND	ND				
14	2.1	2.7												
15	2.0	2.5												
16	2.0	2.7												
17	1.8	2.6												
18	2.0	2.8												
19	2.0	2.7												
20	1.9	2.7												
21	2.0	2.9	5.1				8.0			ND				
22	2.0	2.5												
23	2.1	2.7												
24	1.9	2.8												
25	2.3	3.0												
26	2.1	2.8	10.0				8.0			ND				
27	2.1	2.8												
28	2.2	2.8												
29	2.1	3.3												
30	1.8	2.5												
Max	2.3	3.3	10.0	230	170	29	8.0	ND	6.0	ND	2.2	1.0	870	ND
Ave	2.0	2.8	7.6	185	170	29	8.0	ND	6.0	ND	2.2	1.0	870	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT | EFFLUENT | MAY 2005

May 05 Date	Total Flow MGD	Max Daily Flow MGD	Settle. Solids mg/L	Susp. Solids mg/l	BOD 5day mg/L	Oil Grease mg/L	pH	Settle Solids mg/L	Susp. Solids mg/L	BOD 5 day mg/L	KJ Nitro mg/L	Nit. mg/L	EC mg/L	Oil Grease mg/L
1	2.1	2.9												
2	2.1	2.7												
3	1.9	2.7												
4	2.0	2.6												
5	3.1	5.0	24.0	470	380	71	8.1	ND	ND	ND	5.3	ND	960	ND
6	2.4	3.5												
7	2.1	3.0												
8	2.6	3.0												
9	2.2	4.2												
10	2.1	2.9												
11	2.2	2.9	7.3	190	190	83	8.0		5.0	ND				
12	2.1	2.8												
13	2.1	2.6												
14	2.1	2.9												
15	1.9	1.9												
16	2.3	3.7												
17	2.0	2.7												
18	2.1	2.8												
19	2.1	2.6	7.2				8.0			ND				
20	2.0	2.7												
21	1.9	2.7												
22	2.1	2.8												
23	2.1	2.7												
24	2.0	2.8	ND				8.0			ND				
25	2.0	2.8												
26	2.1	2.8												
27	2.1	2.6												
28	2.0	2.7												
29	1.7	2.6												
30	1.7	2.5												
31	2.0	2.6												
Max	3.1	5.0	24.0	470	380	83	8.1	ND	5.0	ND	5.3	ND	960	ND
Ave	2.1	2.9	12.8	330	285	77	8.0	ND	5.0	ND	5.3	ND	960	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT | EFFLUENT | JUNE 2005

June 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date	MGD	MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	2.1	2.6												
2	2.1	2.6	13.0	280	190	27	7.9	ND	ND	ND	4.9	ND	970	ND
3	2.2	2.7												
4	2.0	2.6												
5	1.9	2.7												
6	2.1	2.6												
7	2.1	2.7	7.2	260	130	62	8.6		5.0	ND				
8	2.1	2.7												
9	2.1	2.6												
10	1.9	2.6												
11	2.0	2.7												
12	1.9	2.7												
13	2.1	2.7												
14	2.1	2.6												
15	2.1	2.6	6.1				8.0			ND				
16	2.2	2.7												
17	2.1	2.6												
18	1.9	2.6												
19	1.9	2.4												
20	2.0	2.5												
21	2.1	2.6	6.4				7.9			ND				
22	2.0	2.7												
23	2.1	2.6												
24	2.1	2.5												
25	2.1	2.6												
26	1.9	2.6												
27	2.2	2.7												
28	2.2	2.6												
29	2.1	2.6	7.4				8.1			ND				
30	2.1	2.5												
Max	2.2	2.7	13.0	280	190	62	8.6	ND	5.0	ND	4.9	ND	970	ND
Ave	2.1	2.6	8.0	270	160	45	8.1	ND	5.0	ND	4.9	ND	970	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT EFFLUENT JULY 2005

July 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date	MGD	MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	2.2	2.5												
2	1.8	2.4												
3	1.7	2.5												
4	1.8	2.6												
5	1.9	2.7												
6	2.1	2.7												
7	2.1	2.6	7.0	210	120	27	8.1	0.1	9.0	ND	11	ND	970	ND
8	2.1	2.7												
9	2.1	2.6												
10	2.0	2.7												
11	2.2	2.7												
12	2.2	2.6	4.4	140	170	28	8.1		11.0	ND				
13	2.2	2.7												
14	2.3	2.8												
15	2.2	2.8												
16	2.0	2.7												
17	2.1	2.7												
18	2.2	2.7												
19	2.3	2.7												
20	2.3	2.8												
21	2.1	2.7	4.1				8.0			ND				
22	2.1	2.6												
23	2.1	2.6												
24	2.1	2.8												
25	2.1	2.7												
26	2.2	2.5	5.0				8.0			ND				
27	2.1	2.6												
28	2.1	2.5												
29	2.1	2.5												
30	2.0	2.7												
31	2.0	2.6												
Max	2.3	2.8	7.0	210	170	28	8.1	0.1	11.0	ND	11.0	ND	970	ND
Ave	2.1	2.6	5.1	175	145	28	8.1	0.1	10.0	ND	11.0	ND	970	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT | EFFLUENT | AUGUST 2005

August 05														
Date	Total Flow MGD	Max Daily Flow MGD	Settle. Solids mg/L	Susp. Solids mg/l	BOD 5day mg/L	Oil Grease mg/L	pH	Settle Solids mg/L	Susp. Solids mg/L	BOD 5 day mg/L	KJ Nitro mg/L	Nit. mg/L	EC mg/L	Oil Grease mg/L
1	2.1	2.6												
2	2.1	2.6												
3	2.3	2.6	4.4	140	170	16	8.1	ND	16.0	ND	20	ND	1000	ND
4	1.8	2.7												
5	2.3	2.6												
6	2.0	2.7												
7	1.9	2.7												
8	2.1	2.6												
9	2.0	2.6												
10	2.1	2.9												
11	2.1	2.7	4.5	160	250	1.6	8.0		10.0	ND				
12	1.9	2.7												
13	2.0	2.7												
14	2.2	2.9												
15	2.9	3.0												
16	2.2	2.9												
17	2.1	3.0	7.6				8.0			ND				
18	2.2	2.9												
19	2.2	3.0												
20	2.2	2.9												
21	2.0	2.9												
22	2.2	3.0												
23	2.2	3.0												
24	2.1	2.9	6.0				8.1			ND				
25	2.2	2.9												
26	2.3	3.0												
27	2.1	2.8												
28	2.0	2.7												
29	2.2	2.7												
30	2.1	2.9	5.4				8.2			ND				
31	2.2	2.9												
Max	2.9	3.0	7.6	160	250	16	8.2	ND	16.0	ND	20.0	ND	1000	ND
Ave	2.1	2.8	5.6	150	210	9	8.1	ND	13.0	ND	20.0	ND	1000	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT EFFLUENT SEPTEMBER 2005

September 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date		MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	2.0	3.0												
2	2.0	3.3												
3	2.0	3.4												
4	1.6	2.4												
5	2.1	2.9												
6	2.1	2.9												
7	2.1	2.9												
8	2.2	2.9	8.8	260	260	41	8.0	ND	8.0	ND	17	ND	1000	ND
9	2.1	3.3												
10	2.1	3.0												
11	2.1	2.8												
12	2.1	2.8												
13	2.2	2.8												
14	2.1	2.8	4.2	320	250	100	8.2		5.0	ND				
15	2.1	2.9												
16	2.2	2.9												
17	1.9	2.8												
18	2.1	2.8												
19	2.1	2.9												
20	2.1	2.9	3.7				8.2			ND				
21	2.2	2.9												
22	2.1	2.9												
23	2.1	2.9												
24	1.9	3.1												
25	2.1	2.8												
26	2.1	2.9												
27	2.2	3.1												
28	2.1	2.9												
29	2.1	3.0	2.2				7.9			ND				
30	2.0	2.6												
Max	2.2	3.4	8.8	320	260	100	8.2	ND	8.0	ND	17.0	ND	1000	ND
Ave	2.1	2.9	4.7	290	255	71	8.1	ND	6.5	ND	17.0	ND	1000	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT EFFLUENT OCTOBER 2005

October 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date		MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	2.0	2.6												
2	1.7	2.6												
3	2.1	2.8												
4	2.2	2.9												
5	2.1	2.9												
6	2.0	2.6	2.2	180	370	100	7.9	ND	8.0	ND	12	ND	960	ND
7	2.2	2.7												
8	2.0	2.8												
9	2.0	2.9												
10	2.2	2.9												
11	2.0	2.8												
12	2.0	2.6	4.4	200	290	68	8.0		7.0	44.0				
13	2.0	2.6												
14	2.1	2.6												
15	1.9	2.8												
16	1.9	2.7												
17	2.0	2.9												
18	2.0	2.8												
19	2.1	2.8	9.7				8.0			ND				
20	2.0	2.7												
21	2.1	2.6												
22	2.0	2.8												
23	1.9	2.9												
24	2.0	2.8												
25	2.1	2.9	6.7				8.0			ND				
26	2.1	2.9												
27	2.1	2.7												
28	2.1	2.8												
29	1.8	2.7												
30	1.9	3.1												
31	2.0	2.8												
Max	2.2	3.1	9.7	200	370	100	8.0	ND	8.0	44	12	ND	960	ND
Ave	2.0	2.8	5.8	190	330	84	8.0	ND	7.5	11	12	ND	960	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

INFLUENT EFFLUENT NOVEMBER 2005

November 05														
		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date		MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	2.0	3.0												
2	2.0	2.8												
3	2.1	2.7	3.4	180	220	51	7.7	ND	5.0	ND	7.2	ND	1000	ND
4	2.0	2.7												
5	1.8	2.8												
6	2.1	2.7												
7	2.0	2.6												
8	2.0	2.6												
9	2.0	2.6	3.2	270	350	76	8.1		7.0	ND				
10	2.0	2.8												
11	2.0	2.7												
12	2.0	2.9												
13	1.8	2.9												
14	2.0	2.7												
15	2.1	2.7	3.8				7.9			ND				
16	1.9	2.5												
17	1.9	2.5												
18	1.9	2.8												
19	2.0	3.2												
20	1.9	3.1												
21	1.9	2.7												
22	2.0	2.7												
23	2.1	2.7	9.4				8.1			ND				
24	1.9	3.1												
25	1.6	2.4												
26	1.9	2.7												
27	1.7	2.6												
28	2.1	2.7												
29	1.9	2.7	3.7				7.9			ND				
30	2.0	3.3												
Max	2.1	3.3	9.4	270	350	76	8.1	ND	7	ND	7	ND	1000	ND
Ave	2.0	2.8	4.7	225	285	64	7.9	ND	6	ND	7	ND	1000	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

City of Dinuba Self Monitoring

INFLUENT EFFLUENT DECEMBER 2005

December 05		Max												
	Total	Daily	Settle.	Susp.	BOD	Oil		Settle	Susp.	BOD	KJ			Oil
	Flow	Flow	Solids	Solids	5day	Grease		Solids	Solids	5 day	Nitro	Nit.	EC	Grease
Date		MGD	mg/L	mg/l	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	2.3	2.9												
2	1.8	2.6												
3	1.9	2.9												
4	1.9	2.8												
5	1.9	2.6												
6	1.9	2.5	10.0	340	280	45	8.3	ND	8.0	ND	4.3	ND	1000	ND
7	2.0	2.6												
8	1.8	2.5												
9	2.0	2.5												
10	1.9	3.2												
11	1.8	2.7												
12	1.9	2.5												
13	1.9	2.8												
14	1.9	2.6	6.7	270	440	150	7.9		10.0	ND				
15	2.0	2.7												
16	2.0	2.6												
17	2.2	2.7												
18	2.0	2.6												
19	2.0	2.8												
20	2.0	2.7												
21	2.0	2.7												
22	2.0	2.8	4.1				7.9			ND				
23	1.9	2.9												
24	1.8	3.2												
25	1.6	2.4												
26	2.0	2.9												
27	1.8	2.5												
28	2.1	3.1	5.4				8.1			ND				
29	2.1	2.7												
30	2.1	2.6												
31	2.1	5.0												
Max	2.3	5.0	10.0	340	440	150	8.3	ND	10.0	ND	4.3	ND	1000	ND
Ave	2.0	2.8	6.6	305	360	98	8.1	ND	9.0	ND	4.3	ND	1000	ND
Limits	**3.14**						**8.5**	**0.5**		**40/80**			**963**	

APPENDIX D

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