Merced County Regional Bicycle Transportation Plan

MCAG
MERCED COUNTY ASSOCIATION OF GOVERNMENTS
Partnering For Regional Solutions

Prepared by the Merced County Association of Governments
www.mcagov.org

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INTRODUCTION

PURPOSE

The purpose of the Merced County Regional Bicycle Transportation Plan is to provide a comprehensive long-range view for the development of an extensive regional bikeway network that connects cities and unincorporated areas countywide. This plan is an update to the 2003 Merced County Regional Commuter Bicycle Plan and meets the requirements of the California Bicycle Transportation Act as set forth in Section 891.2 (items a – k) of the California Streets and Highways Code. With an approved Bicycle Transportation Plan, Merced County and local municipalities are eligible for bicycle project funding through the State Bicycle Transportation Account (BTA). The Merced County Regional Bicycle Transportation Plan is intended to:

- Incorporate citizen input;
- Meet State of California requirements for bicycle planning;
- Reflect current bicycle planning in Merced County;
- Coordinate the Regional Bikeway System with existing local bikeway plans;
- Develop a bicycle plan that ties into a comprehensive bikeway system;
- Identify regional goals and objectives, along with policy to guide the Merced County Regional Bicycle Plan;
- Coordinate the Merced County Regional bikeway system with adjoining counties;
- Offer Merced County citizens an opportunity to significantly increase bicycle ridership through awareness and participation;
- Increase the percentage of community members who choose to commute to work and school on a bicycle instead of in their motor vehicle;
- Serve as the basis for the non-motorized element of the Regional Transportation Plan;
- Coordinate bicycle route planning in conjunction with transportation planning on streets, roads, highways, and public transit;
- Identify barriers that inhibit safe and convenient bicycle travel, and develop a list of corrective measures to remove the barrier;
- Complement existing local bicycle plans in member jurisdictions and reflect land use and circulation elements identified.

The Merced County Regional Bicycle Transportation Plan is designed to reduce single-occupant vehicle travel. It is anticipated that development of bikeways in accordance with this plan will significantly increase bicycle commuting, thereby, reducing citizen's reliance on motor vehicles. The 2000 Census identified 605 bicycle commuters in the plan area, or 1% of the work force (these figures do not include students commuting to school). The implementation of this plan is anticipated to increase the percentage of bicycle commuters.

While the streets and roads in Merced County Regional Bicycle Transportation Plan are used frequently by bicyclists, they do not provide the safety and convenience needed to encourage widespread commuter usage. The implementation of this plan will result in a comprehensive, continuous, and well-maintained bikeway network, maximizing bicycling commuter benefits to the local communities.

INITIAL PLAN DEVELOPMENT

When the plan was originally developed, the process below was followed:

> The Merced County Regional Bicycle Transportation Plan has been created as an extension of local city bicycle plans and the Regional Transportation Plan (RTP). The Merced County Regional Bicycle Transportation Plan uses the policies and programs, as well as the goals and objectives of each of the individual city bicycle plans to expand the countywide network of bicycle facilities in the plan area. Dos Palos is the only city municipality that currently does not have a local bicycle plan. Bicycle plans have been developed and adopted in the following incorporated cities: City of Atwater/Merced, City of Gustine, City of Livingston, and the City of Los Banos

> The Merced County Regional Bicycle Transportation Plan was developed under the direction of the Bicycle Technical Advisory Committee (BTAC) facilitated by Merced County Association of Governments (MCAG) along with local Planning and Public Works staff. Community Bicycle Planning Workshops were held in three county locations (City of Atwater, City of Merced, City of Los Banos) to gather input and ideas from local community members on how to promote and support bicycle commuting in Merced County. Municipal Advisory Councils (MACs) from unincorporated communities were consulted and given the opportunity to recommend bicycle facilities projects.

All versions of the Merced County Regional Bicycle Transportation Plan have been presented to the following MCAG committees: Citizen Advisory Committee (CAC), Technical Planning Committee (TPC), Technical Review Board (TRB), and the Governing Board. The six member jurisdictions of MCAG have been requested to adopt the Regional Bicycle Plan by local resolution.

This update is intended to include County adopted Community Plans, updated City Bicycle Plans, and the Campus Parkway Bicycle Path.

POLICY ELEMENT

It is the goal of Merced County Association of Governments and our seven member jurisdictions to create and maintain an integrated system of bikeways throughout Merced County within the framework of the Merced County Regional Bicycle Transportation Plan. Each of the cities and Merced County recognize the need to encourage bicycle travel for both transportation and recreation. Bicycle use

conserves energy, improves personal health, and improves air quality. This Regional Bicycle Transportation Plan incorporates the General Circulation Objectives, Goals and Policies identified in local City General Plans as well as the Regional Transportation Plan.

The 2007 Regional Transportation Plan identifies the following goal, objectives, policies and actions for non-motorized transportation:

6. Non-motorized

Goal: A regional transportation system for bicyclists and pedestrians.

Objective	***Policy / Action***
6.1. Develop and construct bike and walkway facilities in urban areas and other communities where non-motorized systems do not currently exist.	6.1.1. Construct Class I, II and III bike routes as designated in the Merced County Regional Bikeway Plan.
	6.1.2. Actively pursue bicycle and pedestrian related funding sources to implement local and regional plans.
6.2. Update the Merced County Regional Bikeway Plan every five years.	6.2.1. Use the Bicycle Transportation Advisory Committee for bike planning and project implementation recommendations.
	6.2.2. Implement the Merced Commuter Bikeway Program.
	6.2.3. Implement the Bicycle Safety Program.

GOALS: SAFETY, EDUCATION, CONNECTIVITY AND ACCESSBILITY

In addition to the goals and policies established in the General Plans of Merced County member cities and county, the following are the goals and objectives in the Merced County Regional Bicycle Transportation Plan:

Goal One – Bicycle Safety

- Provide a safe bikeway system as an alternative to vehicular travel.
- Establish and maintain routes that are designed to ensure safety.
- Establish a system that is secure for riders.

Objectives

- Build and maintain street surfaces to avoid pavement conditions unsafe to bicyclists.
- As collision events and bicycle injuries/accidents are recorded, identify possible remedial improvements.

Goal Two – Bicycle Education

- Encourage bicycling through education.
- Provide literature and up-to-date bikeway maps for the public promoting safe bicycle use.

Objectives

- Promote safe bicycle use to riders as well as car drivers.
- Cooperate with other agencies and groups to promote and educate the public on bicycle facilities in the plan area.
- Establish helmet programs that educate and encourage safe bicycle use.
- Support bicycle safety awareness through public information and education programs.

Goal Three - Bicycle Connectivity and Accessibility

- Accommodate bicycling as part of Merced County's multi-modal transportation system.
- Establish and maintain an integrated network of bicycle facilities to support bicycle commuting
- Establish and maintain an integrated network of bicycle facilities to support recreational bicycling
- Establish and maintain an integrated bikeway network that connects to other counties.

Objectives

- Establish right-of-way requirements that accommodate the complete bikeway system including multi-use paths throughout Merced County.
- Maintain a bicycle planning committee to oversee bicycle transportation planning and implementation projects for the purposeful movement of people and goods by the most efficient means available.
- Plan in coordination with the development of UC Merced.
- Promote bicycle routes to regional recreational and commuter destinations.
- Link trip origins and destinations with on-street bikeways designed to serve transportation and recreation purposes.

- Integrate bicycling into the transit system with bus mounted bicycle carriers.
- Establish nodes of connectivity to encourage tourism and commuting.
- Include funding for regular facility expansion, maintenance and repair, as well as funding to review development and zoning proposals for impact on bicycle mobility in the annual local operations and maintenance budgets.
- Maintain a local capital improvement plan that provides regular funding for the bicycle program to acquire right-of-way, to construct new facilities, to retrofit inadequate facilities and to refurbish older facilities.

RECOMMENDED STANDARDS RELATED TO FACILITATING BICYCLE USE

Road Standards

Traffic Signals

Where bicyclists and pedestrians must cross roads with traffic levels high enough to warrant signals, provide bicycle-activated signals at such intersections where bikeways are within the roadway, and push button signal activators where they are roadway but are on a separate path or the sidewalk. These improvements should be targeted for all major intersections on the proposed bikeway network and at locations where school children cross a busy street to gain access to school.

Install bicycle sensors at all signalized intersections along the bikeway system as intersections are upgraded. Sensors should be located within the striped bike lane, either along the curb or between the right turn lane and through lane.

Traffic Calming

Serious consideration should be given to creating traffic calmed streets, which will provide safer conditions for bicycle riders. There are a variety of ways to slow and/or discourage traffic on certain residential streets. Traffic circles, chicanes, traffic diverters, speed bumps, and signs are just a few of the options for traffic calming.

Road Surfaces

Establish standard regarding uniform pavement edges and pothole repair, particularly on roadways shared by bikeways.

Initiate a bikeway improvement and maintenance system as an element of existing pavement management systems in local Departments of Public Works where hazardous conditions are recorded and scheduled for repair or replacement. The evaluation of hazardous conditions should include grates in roadways and railroad crossings.

Roadway obstructions and potholes should be repaired as soon as possible after being reported. Provide a phone number or website where community members can report bicycle facilities that need repair or maintenance.

Drainage Grates

Prohibit drainage grates that have openings parallel to the direction of bicycle travel. Require grates with openings perpendicular to the direction of bicycle travel or with "waffle" patterns that do not trap bicycle tires regardless of the direction in which they are installed.

Railroad Crossings

Adopt specific guidelines for all railroad crossings and other potential hazards to bicyclists that meet Caltrans roadway design guidelines. All railroad crossings will be at 90 degrees to the roadway preventing bicycle wheels from becoming lodged between rails.

Trenching and Repair

Maintain bicycle access where maintenance operations, roadway improvement projects or other operations are likely to cause disruptions to bicycle facilities. Require the provision and maintenance of a clear, safe passage to bicycles as would be required for automobile traffic.

Provide safe pavement surfaces where trenching or repair of roadway surfaces occurs in an area designated for bicycle traffic. Require the replacement or repair of roadway surfaces that extend the full width of the bicycle facility in order to minimize joints and grooves.

Sweeping

Establish a regular sweeping schedule for bikeways to ensure that bikeway surfaces are clean and safe for travel. Purchase a specialized bike lane sweeper to minimize the damage that regular maintenance traffic can inflict on paved bike paths. Each bikeway should be scheduled for sweeping at least four times per year. Establish a volunteer maintenance program where the local community organizes bikeway workdays.

NEW DEVELOPMENT STANDARDS

Density

Plan for new residential, commercial and employment development with a mix of density uses that support bicycle, pedestrian and other non-motorized modes of transportation.

Continuous, Uninterrupted Bicycle and Pedestrian Systems

Plan for new development that allows full, continuous and uninterrupted access for bicycle, pedestrian and other non-motorized modes of transportation. Limit dead-end cul-de-sacs as they limit bicycle and pedestrian access and roadway connections. Continuous access systems, such as the traditional grid or modified grid are preferred over cul-de-sacs. Employ a street system with paths and routes clearly marked.

Frequent, Safe Crossings

Plan roads that have frequent, safe crossings. Plan for bicycle activated signals where bicyclists use the roadway.

Integrate Bicycle and Pedestrian Facilities and Systems

Provide for bicycle and pedestrian access adjacent to all new public roads.

BIKEWAY FACILITY STANDARDS

This section is intended to provide basic background information to assist in understanding the bicycle plan. Bikeways and bicycle support facilities are briefly discussed in this section.

Bikeways
A bikeway indicates any facility intended for bicycle travel. Figure 1 shows Bikeway classifications. Caltrans Highway Design Manual categorizes Bikeways as follows:

Class I - Bike PATH

A bike path, or Class I bikeway, is a separate, off-road facility and does not share a road or street right-of-way with motor vehicles. Cross flows by motorists are minimized. Bike paths are intended for the exclusive use of bicyclists, although pedestrians and others sometimes use them.

Class II - Bike LANE

A bike lane, or Class II bikeway, is a bike facility established within the paved area of a road or street and shares the roadway with motor vehicles. Bike lane stripes are intended to promote an orderly flow of traffic, by establishing specific lines of demarcation between areas reserved for bicycles and lanes to be occupied by motor vehicles. Bike lane signs and pavement markings support this effect. Bike lane stripes can increase bicyclists' confidence that motorists will not stray into their path of travel.

Class III - Bike ROUTE

A bike route, or Class III bikeway shares the street with motor vehicles, or shares the sidewalk with pedestrians and others. Signs, but no road markings designate a bike route. California currently has no standard for the width of bike routes or shared roadways, although recent legislation will enable the state to adopt them.

BIKEWAY FACILITY GUIDELINES

Bikeways: "Bikeway" means all facilities that are primarily for bicycle travel. The *Caltrans Highway Design Manual (Chapter 1000)* provides specific design criteria for Class I bike paths.

Class I
Bicycle/Pedestrian Path

Exclusive right-of-way for bicyclist and pedestrians

Pathway completely separated from motor vehicles by space of physical barrier

- Minimal cross-flow by motor vehicles (e.g. at intersection)

Class I Bike Path
A bike path, or Class I bikeway, is a separate, off-road bikeway that runs within its own right-of-way and does not share a road or street right-of-way with motor vehicles. Bike paths are intended for the exclusive use of bicyclists, although, they can also be utilized by pedestrians. They have the following general characteristics:

- The minimum paved area for a two-way bike path is eight feet, with at least two feet of shoulder on

each side, although three feet is recommended. The preferred paved width of bike paths is at least 12 feet, especially where bicycle traffic is expected to be heavy. Widths greater than eight feet are also needed if significant pedestrian traffic is anticipated, although such dual use is undesirable; the preferred solution is to provide separate bicycle and pedestrian facilities.

- Bike paths are physically separated from automobile traffic so that bicycles are not forced to travel in directions opposite the direction of travel of motor vehicles.

- Bike paths have relatively straight alignments that provide bicyclists good visibility and smooth turns.

In some cases, an existing bike path or multi-use trail may not meet Caltrans design standards. For safety reasons and because most federal and state funding is geared towards transportation facilities, this master plan recommends that Caltrans standards be met wherever possible:

- Facilities must meet Americans with Disabilities Act (ADA) requirements of 4.8 percent maximum slope, and 8 feet of vertical clearance.

- If equestrians and/or heavy equipment (including fire trucks) are expected to use the facility, the vertical clearance should be 12 feet minimum.

- Landscaping should be low maintenance and low water types. Use or preservation of native materials, especially along riparian habitats, is recommended. Lighting should be provided along bike paths if open after dusk. Lighting standards may be similar to street standards.

- Barriers (gates) should provide for disabled access (5 feet minimum between bollards). Barriers to prevent motorcycle entry onto bike paths should be constructed; all barriers should be removable by emergency vehicles.

- Provide striping and signing for speed limits, stop, slow warnings and bike path.

- Construct bike path to accommodate maintenance vehicles (Note: Path sweepers may require more than 8 feet of vertical clearance. An evaluation should be performed on proposed under crossings between the cost of providing additional headroom and the impact on sweeping operations).

- Direct pedestrians to unpaved path when opportunity exists.

- Provide adequate fencing (54-inch minimum) to protect privacy of neighbors

- Provide at least 2 feet of unpaved shoulder for pedestrians where feasible.

- Provide trail head facilities (portable restroom, parking, drinking fountain) at appropriate locations.

- Maximum speed will be 15 mph unless otherwise posted.

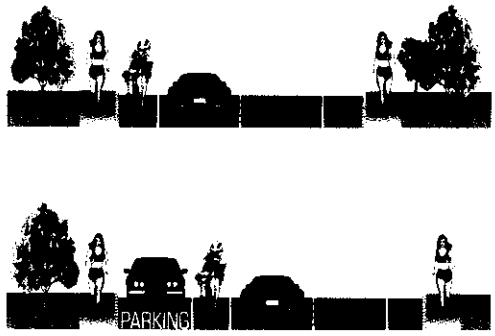
- Minimum 5 feet of separation between bike path and adjacent roadway unless a barrier is provided.

- 2 percent cross slope should be provided for drainage.

- All curve radii, super elevations, stopping sight distances, and lateral clearances on horizontal curves should conform to Caltrans *Highway Design Manual,* Chapter 1000, specifications.

Class II
Bicycle Lane

- Restricted right-of-way designated for the exclusive flow of bicycles
- Travel by motor vehicles or pedestrians prohibited, but vehicle cross-flow allowed for parking
- Signed as bike lane
- Lane designated by solid white striping (dashed striping at intersection approaches, where vehicles may cross to make turns)



Class II Bike Lane

A bike lane, or Class II Bikeway, is a bikeway that lies within the paved area of a road or street and shares the roadway with motor vehicles. Bike lanes are delineated by stripes. Bike lanes provide preferred, but not exclusive use to bicyclists; for example, segments of bike lanes may share the pavement with motor vehicles making right turns. Bike lanes have the following general characteristics:

- Where no curbside parking is allowed, bike lanes should generally be 5 feet wide in each direction, as measured from the curb. Where the paved width is inadequate, bike lanes can be narrowed to 4 feet, but only if absolutely necessary.

- Bike lanes should extend at least 3 feet beyond the edge of the gutter.

- Where curbside parallel parking is allowed, the area delineated as a bike lane should be at least 13 feet wide to accommodate a 7-foot parking lane, a 3-foot buffer zone for opening car doors, and a minimum 3-foot bike lane beyond the door zone. However, if absolutely necessary, a bike lane with parking can be narrowed to eleven feet. Bike lanes are not recommended in areas where perpendicular or angle parking is allowed, due to the poor site lines for motor vehicles backing into the street.

- Bike lanes are delineated by 6-inch-wide, continuous striping

- On arterial streets where parking is allowed and demand is high, a second stripe should delineate the bike lane from the parking lane.

- It is often possible to re-stripe existing multi-lane streets to provide space for bike lanes.

- Bike lane standards are well defined by Caltrans, and are the preferred on-street system for this Commuter Bicycle Plan. Caltrans has specific standards for Class II lanes such as striping (solid 6-inch white stripe), and signing (at the beginning of each bike lane, at the far side of each arterial crossing, and at change in directions). Wherever existing bike lanes do not meet Caltrans design standards, they should be improved. If improvements cannot be done, they should not be identified as an official Class II bike lane.

Bike lanes should conform to Caltrans standards on all existing and proposed roadways. Sub-standard bike lanes should be designated as Class III bikeways, unless they are programmed for upgrading to meet Caltrans Class II standards.

Other design standards include:

- Bike lanes should be located on the right hand side of one-way streets. The ability to install all of these improvements is dependent on the available right-of-way and need, but should also apply

to all new intersections along the proposed route.

- Where possible, four-foot pockets should be provided at intersections between the right turn only lane and the through lane.

- Signal loop detectors should be provided at major signalized intersections unless pre-timed signal coordination is in effect.

Class III
Bicycle Route
Shared right-of-way for motor vehicles and bicycles
Signed as bike route

Class III Bike Route
A bike route, or Class III Bikeway, is a bikeway that shares the street with motor vehicles, or shares the sidewalk with pedestrians and others. A bike route contains signs, but no stripes. California currently has no standard for the width of bike routes or shared roadways, although recent legislation will enable the state to adopt them. Adequate width for a bike route depends on the volume, speed and mix of traffic, the presence or absence of a paved shoulder, surface condition, grade, curves, sight distance, obstacles such as parked cars, and the skill of bicyclists using the road.

The decision to select and sign a bicycle route should be based on the advisability of encouraging bicycle travel in the corridor, based on factors such as traffic volumes and speeds, curb lane width and parking.

Bike routes should provide a higher level of service than other streets and roadways to bicyclists, as defined by:

- Traffic control priority at intersections;

- Removal of parking in areas of restricted width;

- Correction of surface imperfections or irregularities; and

- Maintenance at a higher standard than comparable streets.

Bicycle routes should be provided on the proposed system if any of the requirements described for Class II bicycle lanes cannot be met. Bicycle routes, while lacking striped lanes, should provide the following where practical:

- Detectors at signalized intersections;

- Curb travel lanes at least 14 feet wide (excluding parking), or 21 feet including parking;

- Warning signs to motorists;

- Directional signs to bicyclists; and

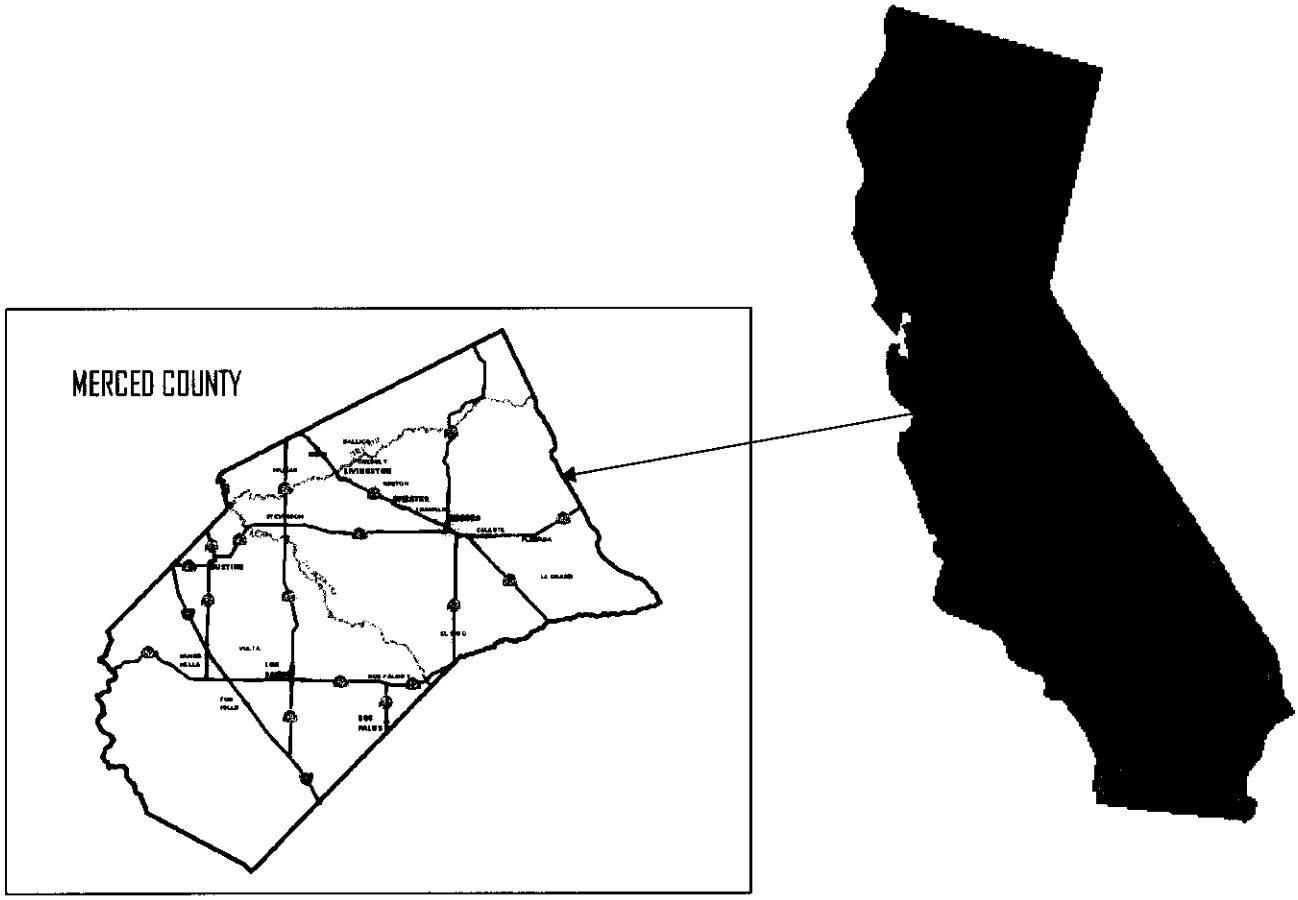
- Adequate pavement conditions and maintenance.

SUPPORT FACILITIES

There are several types of support facilities that can be installed to help encourage bicycle commuting to work, commercial centers, public offices, parks, colleges and schools. These include but are not limited to:

- **Parking**, including secure: racks, lockers, storage rooms and valet service.
- **Showers** to allow bicyclists to refresh themselves before starting work or school.
- **Lockers** for storing a change of clothes.
- **Water Fountains** along paths for refreshment.
- **Lighting** along bikeways to increase safety and security.
- **Repair depots** along bikeways providing air, water, and basic tools for bicycle repair.
- **Transit connections** including bike racks/storage at transit centers and bike racks on buses.

EXISTING CONDITIONS



Land Use

The past two decades have seen the San Joaquin Valley change from an agricultural economy to a more diversified economy in which manufacturing is playing an increasingly important role, along with education facilities, retail trade, and service industries.

The County of Merced lies in the heart of the Central California San Joaquin Valley. Merced County covers 2,008 square miles of rich agricultural land. Merced County is accessible by Interstate 5 to the west and Highway 99 to the east.

Merced County is bordered by Stanislaus County to the north, Fresno and Madera Counties to the south, The Sierra Nevada Mountains to the east, and the California Coastal Mountain range to the west. Within the confines of Merced County are the cities of Merced, Atwater, and Livingston to the east and the cities of Gustine, Los Banos and Dos Palos to the west. The greatest distance across Merced County spans 45 miles from easterly communities to westerly communities. The City of Merced is the county seat and houses the largest population.

The majority of Merced County sits at sea level with a very flat terrain. Rolling foothills are located in the most eastern portion of the county that borders on Mariposa County. The topography throughout Merced County benefits bicycle riders as they are not challenged with significant changes in elevation.

The San Joaquin Valley is projected to experience population increase in the next 20 years. Merced County's population is increasing due to affordable housing costs compared to surrounding valley counties as well as the San Francisco Bay Area. Also, there is an abundance of agricultural land for development.

The eastern side of Merced County, The City of Merced, is expected to grow tremendously with the addition of the University of California at Merced, UC Merced. UC Merced opened to students in the fall of 2005. Many economic factors have set the stage for steady population growth in Merced County. The Regional Bikeway system needs to expand with the population to minimize congestion on local and regional roadways as well as help to improve the San Joaquin Valley air quality. See Appendix - Land Use and Population Maps by jurisdiction.

Area Climate

Merced County boasts moderate climates during most of the year making year-around bicycling possible. The most extreme weather conditions are the summer heat and the winter fog.

Summer Heat

Clear skies and very dry air are typical from April through October with average temperatures around 90 degrees Fahrenheit. Summer months bring uncomfortable heat that can reach 110 degrees Fahrenheit. Abundant shade trees lining creeks along with water fountains can provide relief for bicycle commuters.

Winter Fog

November through March brings rain and fog to the San Joaquin Valley that accounts for 90 percent of Merced County's eleven inches of annual precipitation. Merced County is susceptible to significant amount of fog during the winter months due to cold temperatures and climatic inversion layers. Dense fog creates hazardous conditions for all types of commuters. Highly visible bicycle signs would create a safer environment for cyclists riding in the fog and rain.

Air Quality

Air quality is a major problem in the San Joaquin Valley. It has ranked in the top 10 worst air regions in the nation, and the Valley has one of the highest asthma rates for children in the country.

National standards are set by the Environmental Protection Agency (EPA) to assure inhabitants of healthy air to breathe. Currently, the San Joaquin Valley is designated as nonattainment for ozone pollution and for particulate matter under 10 microns (PM-10) and under 2.5 microns in diameter, which means that pollution levels in the Valley are higher than the national standard. The San Joaquin Valley Air Pollution Control District (SJVAPCD) is a regulatory agency which creates and enforces rules aimed at reducing these pollutants.

The formation of ozone is a series of complex chemical reactions that ultimately forms smog reducing visibility, harming natural resources, and impacting personal health. The San Joaquin Valley is addressing the reduction of ozone pollution in a federally required Ozone Plan (2007).

PM-10 and PM2.5 are fine particulate matter in the air which can interfere with respiratory function and contribute to health conditions such as asthma, lung cancer, and cardiovascular issues. The San Joaquin Valley's designation for PM-10 may soon transition from "nonattainment" (bad) to "maintenance" (fair). The 2007 PM-10 Maintenance Plan was anticipated to be approved by EPA in late June 2008 but has been delayed pending technical issues. For PM2.5, a State Implementation Plan is being developed to address the 1997 PM2.5 standards.

These air quality standards affect transportation planning in that if local regions under the control of local air districts are not successful in meeting the standard then plans must be put in place that will provide measurable results in improving air quality. If adopted plans are not successful with improving air quality then sanctions are imposed. The ultimate sanction is to freeze Highway funds designated to projects reducing traffic congestion and gridlock.

Bicycle commuting as an alternative form of transportation should be heavily promoted throughout Merced County as one means of improving air quality.

BICYCLE USE: ACTUAL AND POTENTIAL

The transportation profession has given little attention to evaluating the effects of a well-established bicycle and pedestrian infrastructure on travel behavior. Consistent methodology for accurately measuring non-motorized transportation modes is not readily available, therefore, determining bicycle use and predicting future use is difficult at best. For the sake of this plan, data from the both the latest 2000 census as well as the 1990 census are used to identify current and potential bicycle commuters.

Table 1 – Merced County Population

Jurisdiction	1990	2000	2007	Population Change 1990-2008	Increased by 1990-2008
City of Atwater	22282	23113	24050	4,663	21%
City of Dos Palos	4080	4581	4660	841	21%
City of Gustine	3931	4698	5078	1,147	29%
City of Livingston	7317	10473	10850	5,857	18%
Los Banos	14519	25869	28150	20,331	140%
City of Merced	56216	63893	66100	20,663	37%
Unincorporated areas	70158	73927	80100	13,509	19%
Merced County totals	178503	206554	218900	67,111	38%

Source: US Census Bureau American FactFinder

Merced County had a total population of 206,554 in the 2000 census. The population is projected to increase to 340,800 by 2020 according to the California Department of Finance. Sixty-three percent of Merced County's population resides within the six incorporated cities. The remaining population is spread throughout the unincorporated county areas in small communities such as: Hilmar, Delhi, Ballico, Cressey, Winton, Franklin, Planada, Le Grand, El Nido, Santa Nella, and Stevinson.

City municipalities are governed by local government, whereas, unincorporated areas have established Municipal Advisory Councils (MACs) supported by Merced County.

Every area of Merced County from the individual cities to the unincorporated areas are experiencing substantial population growth annually. The population for the city of Los Banos, due to its proximity to the Bay Area, more than doubled in the last seventeen years. The availability of affordable housing in Los Banos compared to the Bay Area has been the primary factor driving the population increase. The City of Livingston has nearly doubled. Overall, Merced County's population is expected to grow to 340,800 by the year 2020, an increase of 46%.

The 2000 Census identified 605 residents of Merced County that commute to work using their bicycle. This number represents 1% of total commuters who commuted within their county of residence. Unfortunately this data does not include the number of people who ride bikes for non-work related activities like recreation, shopping, and riding to school. The number of people who walked to work is 2,168, representing 5% of total commute trips to work. Due to the projected population increase and the addition of UC Merced, the bicycle commuting population is projected to significantly increase.

The current bicycle commuting population in Merced County consists of wide and diverse segments of riders with differing skills and abilities ranging from avid touring bicyclists to leisurely riders, to commuters who use bicycles as their only mode of transportation. The type, location and characteristics of bicycle facilities must take into and meet the diverse needs of all bicycle riders. Table 2 is an attempt to classify the bicycle riding population into identifiable categories.

Table 2 – Bicycle Rider Types and Characteristics

Type	Characteristics	Choices	Considerations	Segment Size
Avid bicycle enthusiast	Considers the bicycle as the primary transportation mode for most trips exclusively. Highly attuned to safety issues.	Often chooses to ride in the vehicle travel lane, so the availability of high-speed routes is important.	Continually anticipates and avoids compromising situations while riding.	Relatively small segment
Regular bicycle rider	Uses a bicycle if the destination is reasonably close and a good route exists. Typically the rider is a working adult, college or high school student.	Some riders feel uncomfortable on high-speed routes, even when bike lanes are provided.	Safe and efficient bicycle facilities and routes to maintain momentum; usually attuned to potential hazards such as cars entering the street	Large segment
Young regular bicycle rider	Routinely rides to and from school. Bikes for general transportation to destinations, such as parks, visiting friends and school activities. Typically a child or junior high school age.	May choose routes unsuitable for ability. Sometimes disobeys traffic controls.	Minimal pedaling effort is more important than speed. Uses bike paths and lanes satisfactorily.	Large segment
Beginning bicycle rider	Bikes to and from school as well as the local neighborhood if a route of bike paths or low traffic streets are available.	Physical skills are not fully developed. Bicycle rider sometimes weaves from side to side.	Occasionally loses balance and rides into the street, trees, signs, pedestrians, and other riders.	Small segment

Adapted from The City of Davis Bikeway Plan, May 2001

As bicycle lane, bicycle paths, and other bicycle facility improvements are constructed and maintained, it is anticipated that bicycle commuting and recreational bicycling trips will increase. The anticipated increase in bicycle commuting and overall ridership is especially important for the City of Merced and surrounding areas with the opening of UC Merced in 2004. Existing and future bike paths and bike lanes will accommodate the travel of UC students as well as UC faculty and staff.

Incentive Programs

There are numerous incentive programs that jurisdictions within Merced County can use to promote bicycling commuting. Below is a list of sample incentive programs:

- Formation of a Bicycle Commuters Club
- Employer based classes on bicycle safety and maintenance taught by an individual certified in the *Effective Cycling Trainers Course* or an equivalent
- Employer based "Guaranteed Ride Home Program" which guarantees access to transportation in case of an emergency
- Employer provides transportation for work related travel
- Employer offers flexible work schedule for cycling commuters
- Employer provided loaner cycling accessories and repair equipment (i.e. helmets, lights, reflectors, baskets/bags, tool kits, hand pumps)
- Employer based financial assistance for a bicycle purchase for cycling commuters
- Merced County Cities to moderate bicycle commuting awareness workshops
- Promote an annual bike commuting event
- Install support facilities (restrooms, showers, bicycle lockers) at convenient locations
- Alternative modes of transportation incentive; reimbursement of employee per mile for use of alternative mode of transportation to work

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EXISTING BIKEWAYS IN MERCED COUNTY

CITY OF MERCED

The City of Merced has the most comprehensive bikeway system in the County. The Merced urbanized area has an extensive system of bicycle paths, with its bikeway system consisting of facilities in each of the three classifications. There are currently 18 miles of Class I paths, 24 miles of Class II lanes, and 11 miles of Class III routes completed. The Existing Bikeway System, by class, is identified in Figure 4.

The City of Merced has Bear Creek, Black Rascal Creek, Cottonwood Creek, and Fahrens Creek transversing through its City Limit boundaries, and much of the area alongside the creeks has been developed as linear parks, with bike paths leading to residential and recreational areas, schools, and some commercial centers. Such environments are particularly ideal for the commuting and recreational aspects of bicycling. Class I bicycle paths are located along Bear Creek, Black Rascal Creek,

Cottonwood Creek, and Fahrens Creek, with an intent in keeping the creek side environments as natural as possible, while still being user-friendly.

The Bear Creek Path was constructed in the mid 1970's in three phases originating from the western end near Snelling Highway (Highway 59). About 2 ¼ miles of bike path up to Mercy Hospital and underpasses at G and M streets were built during Phase I. Phase II extended the project up to the McKee Road bridge (city limits) and County participation extended the bike path beyond City Limits. Phase II constructed three miles of bike path with about 50 percent having completely separate paths for east and west directions. Phase III is 1 ¾ miles. The Bear Creek path is the most used path by many commuters as it travels in an east/west direction through the center of the city and provides direct access to Downtown and other area shopping, Applegate Park, hospitals and medical clinics, and provides further connections with Class II bikeways on arterial and collector streets.

The Black Rascal path was constructed in the late 1970's originating at Snelling Highway (Highway 59) and extends east towards McKee Road. This section, built in two phases, is about 2 5/8 miles. The bike path is eight feet wide, with a three-inch thick asphalt layer and parallels the creek. Phase III, an extension from McKee to Lake Road that would have completely connected the Black Rascal Class I bike path system with the County's UC Merced/Lake Road Class I path, is now partially constructed, with only a small portion unfinished. The City is expecting to apply for grant funding to be able to complete this connection in the near future. West of G Street, the path runs along many residential areas and Merced High School, providing bikeway access to many commuters and a direct route to schools and medical offices. Further west, Black Rascal Creek path eventually is joined by the Fahrens Creek system.

With Merced's housing market boom beginning in approximately 2001 and ending in 2007, residential and commercial land developers were required to design and install both Class I and II bikeways. As a direct result of this prosperity in development and a dedication to enforce this Bike Plan, the City of Merced has experienced a large increase in both the number and quality of its Class I and II bikeways, particularly connections to its newest paths, the Cottonwood and Fahrens Creek path systems.

The Cottonwood Creek Class I bike path, in its long-range conceptual form, would follow the natural course of the creek's path from its split at the fork of Fahrens Creek easterly up to the UC Campus connection at Lake Road. Currently, however, the only completed section of this path runs easterly from G Street to just short of Gardner Road, with short-range plans to finish the connection to Gardner Road by Spring of 2009. Future segments to connect G Street to Cardella Road, then west to join with the Fahrens Creek bike path, are targeted to be funded and/or completed in approximately two to three years. Presently, the installed section of path that connects G Street and soon to Gardner Road will provide easy access from residences to shopping, schools, medical and other offices, and a future hospital.

The Fahrens Creek Class I bike path system is approximately halfway completed, with finished sections running northward from the merging point of Black Rascal Creek and Fahrens Creek just east of Highway 59 at Buena Vista to the area just east of R Street at Lehigh Drive. The remaining uninstalled section will continue the path northward to Bellevue Road, and then will continue in a northeast trend along Fahrens Creek to G Street. Although a short segment of path to Bellevue may be funded and built within approximately five years with possible grant funding, the remaining uninstalled portions north of Bellevue Road would be built as land is developed in those areas, which likely will not occur for many years to come.

As aforementioned, another bicycle Class I path runs northward alongside Lake Road between Yosemite Avenue and Lake Yosemite, outside of the city limits. This path was recently upgraded by the County

and will most likely connect with both the Cottonwood and Black Rascal Creek bike path systems at some future point in time.

Existing Class II bicycle lanes include many of the arterial streets within the City, including major sections of G Street, M Street, Yosemite Avenue, and McKee Road. Several other streets have shorter sections with designated bicycle lanes. These include R Street, V Street, West Avenue, 17th Street, 18th Street, and 21st Street. Like the Class I path system discussed above, many sections of Class II lanes have been added as more parts of the City have been developed, further increasing and improving the City's overall bikeway connectivity.

Class III bicycle routes are located on sections of additional collectors and arterials including V Street, 26th Street, Glen Avenue, and Childs Avenue. The City of Merced has designated bicycle routes wherever bikeway connections are necessary but no opportunity for lanes or paths exist. While bike routes are not the ideal, bike route signs remind drivers and cyclists to share the road. See Appendix A – City of Merced Existing & Proposed Bikeway System map.

CITY OF ATWATER

The City of Atwater has limited bicycle facilities. There are a few Class I and Class II bikeways located in the city, however, the bikeways do not connect well, nor do they provide sufficient access to major destinations. See Appendix A – City of Atwater Existing & Proposed Bikeway System map.

Atwater's general plan requires developers to dedicate land to possible bikeway extensions as development occurs. This focus on bikeways has produced three sections of Class I bike paths on the eastside of Atwater

A Class I bike path parallels the eastside of Shaffer Road between Lakeview Drive and Manzanita Drive. This path nearly reaches the Livingston Canal, an identified proposed location for a new bike path. The western side of heavily traveled Buhach Road is home to a relatively large section of bike path. The Buhach bike path connects Juniper Avenue
to the north and Green Sands Avenue to the south. A small section of bike path exists on Broadway Avenue between Almador Terrace and Malibu Lane.

North Atwater is served by a section of Class II bike lane on Winton Way .

Downtown Atwater is served by a Class II bicycle lane along Atwater Boulevard between Vine Street and Winton Way, however, a safe connection to target areas does not exist.

Atwater's industrial area is served by a section of Class II bike lane on Industry Way and Aviator Drive between Commerce Avenue and Business Parkway. This bike lane provides limited connectivity to target areas. See Appendix A – City of Atwater Existing & Proposed Bikeway System map.

CITY OF DOS PALOS

The City of Dos Palos currently has 1 bikeway: the Valeria Street bikeway.

The Valeria Street Bikeway runs on the south side of Valeria Street from Center Avenue to Bryant Avenue.

The City of Dos Palos is striving to develop an integrated bicycle network. The implementation of this plan will result in a comprehensive, continuous, and well-maintained bikeway network, maximizing bicycling benefits to the area's cycling and non-cycling public.

The City of Dos Palos currently has several sites around town which offer support facilities including 8 sites with benches, 2 with bicycle racks, 4 with picnic facilities, 3 with restrooms, 1 with showers, and 7 with water fountains.
See Appendix A – City of Dos Palos Existing & Proposed Bikeway System map.

CITY OF GUSTINE

The City of Gustine has recently begun installing bikeways along with new residential developments. The City has made great strides in implementing their bicycle plan since it was adopted in 2001. Gustine now has 8.67 miles of existing bicycle routes, .59 miles of existing bicycle lanes and .22 miles of existing bicycle paths. There are still a number of facilities to be installed to make the City more accessible to bicycle traffic.

Most existing major roadways within the City are not of suitable width or design to provide bicycle facilities above a Class III standard. To install bike lanes, a minimum width of 32 feet is required on a street where no parking is allowed. (see Appendix A). Most existing streets in Gustine range in width from 30 to 40 feet and on-street parking is currently permitted. This plan primarily proposes designation of bicycle routes on many of Gustine's narrow, yet calm streets. Several future roads are planned to be wide enough to provide for bike lanes should funding become available. As development occurs on the outer city perimeter, a bicycle loop, primarily class I, is proposed.

The potential for increased use of bicycles needs attention to ensure that proper consideration is given to the development of bikeways that would link areas of traffic generation. This plan emphasizes improving bicycle facilities connecting to schools, parks, commercial centers and major employers.

See Appendix A – City of Gustine Existing and Proposed Bikeway System map.

CITY OF LIVINGSTON

The City of Livingston currently has no existing bikeways. Though bicycles are used by commuters and school children in particular, no official bikeways exist to support the needs of Livingston's bicycle riding public. See Appendix A – City of Livingston Existing & Proposed Bikeway System map.

CITY OF LOS BANOS

The City of Los Banos has two bicycle path/trail ways: The Central California Irrigation District (C.C.I.D.) Canal Pathway between Pioneer Road and I Street and the Rail Trail Pathway along H Street between Second and the cross of Highways 152 & 165.

The CCID Pathway was funded with Transportation Enhancement Activity (TEA) Funds with a non-federal TEA match by the City of Los Banos. The C.C.I.D. Trail way provides access to the College Green neighborhood (500 homes), the Cresthills neighborhood (650 homes), the California Homes neighborhood (300 homes), Garden V subdivision (450 homes) with a number of picnic areas, restaurants and miscellaneous shops. The Little League fields, Pacheco Boulevard, the Los Banos Municipal Airport, and other related churches and schools are in close proximity. The existing C.C.I.D. Trailway.

The Rail Trail Pathway was funded by grants from the State Department of Parks & Recreation and the City's Redevelopment Agency. It is part of the City's Downtown Revitalization Plan.

The City of Los Banos has extended the network of their commuter bike paths with the addition of bike path projects. The City of Los Banos is striving to develop an integrated bicycle network. The implementation of this plan will result in a comprehensive, continuous, and well-maintained bikeway network, maximizing bicycling benefits to the area's cycling and non-cycling public.

See Appendix A – City of Los Banos Existing & Proposed Bikeway System map.

MERCED COUNTY – UNINCORPORATED AREAS

The Merced County General Plan includes policies for establishing bicycle routes throughout the unincorporated areas within Merced County. The General Plan encourages the construction of Class I, II, or III bike routes as designated in the overall Merced County Bikeway Plan and in Community Specific Plans; the location and construction of bikeways is to be coordinated with incorporated cities and adjacent counties. A Countywide Bicycle Route Plan showing the proposed locations of existing and proposed regional bikeways is included in the General Plan.

Numerous unincorporated communities are located within Merced County. The Merced County Board of Supervisors has adopted community plans for many of these unincorporated communities. Plans for the following unincorporated communities include goals and policies for the development of bicycle facilities: Delhi, Hilmar, Franklin-Beachwood, Le Grand, Planada, Santa Nella, University Community, and Winton. The bicycle routes shown in these community plans supplement the bicycle routes shown in the Merced County General Plan.

Other unincorporated communities within Merced County that have not adopted policies related to bicycle facilities include: Ballico, Celeste, Cressey, Dos Palos "Y", El Nido, Midway, Snelling, South Dos Palos, Stevinson, Tuttle, and Volta.

EXISTING SUPPORT FACILITIES AND PROGRAMS

MERCED

Parking

Bicycle racks are the most common types of bicycle parking facility seen in Merced. Due to increasing popularity in bicycle commuting, bike racks are located at many sites throughout Merced including; various locations in the downtown area, the Merced Mall, all of the schools, Mercy Hospital, and several large employers. Bicycle lockers are available at the Merced Transportation Center.

Showers and Lockers

Other support facilities for bicycle commuters in Merced are limited. Many school have showers and lockers that could be used by faculty and students who choose to bicycle to work or school. A few businesses in the industrial parks, the hospital and public facilities also have showers and lockers for employees.

Safety and Education Programs

The Merced Police Department (MPD) operates a limited bicycle safety program. One police officer is assigned to run the program, which primarily targets school children. It is the hope of the MPD to increase the size and impact of its bicycle patrol and safety program.

School Visits

The officer visits area schools on a by request basis and conducts a one-hour bicycle safety training course.

Helmet Citation – Saturday Bicycling School

The same officer conducts a monthly Bicycling School for children who have been cited for bicycling without a helmet. The children, along with their parents, are required to attend a one-hour bicycle safety class on a Saturday morning. Since California passed Vehicle Code 21212 in 1997, which prohibits persons under 18 from riding or being a passenger on a bicycle without wearing a certified helmet, the Merced Police Department has issued 302 citations for breaking the code.

ATWATER

Parking

Atwater has limited support facilities. There are bicycle racks located throughout the City of Atwater at schools, shopping centers, the community center, employers, and the downtown area. However, many of the bicycle racks are old and poorly situated. Atwater has purchased new bicycle racks to be distributed throughout the city at high traffic areas this summer. Appendix A – City of Atwater map identifies existing and proposed support facilities.

Showers and Lockers

A few large employers along with Atwater High School provide showers and lockers.

Safety and Education Program

The Atwater Police Department (APD) does not have an official bicycle safety program, yet on-site school Resource Officers oversee bicycle safety as part of their duties.

School Visits

The Elementary School Resource Officer makes bicycle safety presentations at all of Atwater's elementary schools on an annual basis. Bicycle safety presentations include traffic rules, helmet requirements, bicycle licensing and bicycle locking.

Traffic Citations

Atwater Police issue citations to bicycle riders for vehicle code violations, primarily not wearing a helmet. Offenders are required to pay a fine, yet Atwater does not currently operate a bicycle traffic school.

DOS PALOS

The City of Dos Palos currently has several sites around town which offer support facilities including 8 sites with benches, 2 with bicycle racks, 4 with picnic facilities, 3 with restrooms, 1 with showers, and 7 with water fountains.

Safety and Education Programs

The Dos Palos Police Department is making and effort to visit schools in Dos Palos to educate youth about safe bicycle use. The program focuses on the importance of correct helmet use and traffic laws.

GUSTINE

Parking

Gustine has several bicycle racks available for bicycle parking.

Showers and Lockers

Other support facilities for bicycle commuters in Gustine are limited. Gustine High School and middle school have showers and lockers that could be used by faculty and students who choose to bicycle to work or school.

Benches and Water Fountains

Gustine has shady park areas with benches and water fountains where bicyclists can rest and refresh themselves before continuing their bicycle riding.

Safety and Education Programs

The Gustine Police Department (GPD) operates a limited bicycle safety program. It is the hope of the GPD to increase the size and impact of its bicycle patrol and safety program.

School Visits
Gustine Police Department will make regular visits to the schools in Gustine to educate youth about safe bicycle use. The program will focus on the importance of correct helmet use and traffic laws.

Bicycle Rodeo
This year, the Gustine Police Department, in cooperation with area community service groups, ran its first annual Bicycle Rodeo to coincide with the beginning of the school year. The rodeo focuses on bicycle safety and helmet use. Participants can enter drawings to win helmets and bicycles.

LIVINGSTON

Parking
Bicycle racks are the only bicycle parking facility seen in Livingston. Bicycle racks can be found in front of a few downtown businesses and at most of the schools

Showers and Lockers
Other support facilities for bicycle commuters in Livingston are limited. Livingston High School has showers and lockers that could be used by faculty and students who choose to bicycle to work or school.

Safety and Education Programs
The Livingston Police Department (LPD) operates a limited bicycle safety program. It is the hope of the LPD to increase the size and impact of its bicycle patrol and safety program.

School Visits
LPD officers visit area schools twice a month and conduct bicycle safety assemblies.

Helmet Citation – Saturday Bicycling School
Officers also conduct a Bicycling School for children who have been cited for bicycling without a helmet or other bicycle related offenses. The children, along with their parents, are required to attend a one-hour bicycle safety class on a Saturday morning. Students are required to bring their helmet with them to class. If offenders do not have a helmet, the Livingston Police Department sells them a helmet at low cost.

Bicycle Rodeo
For the past 5 years, the Livingston Police Department, in cooperation with area community service groups, has run an annual Bicycle Rodeo around the time when the school year starts. Past rodeos have attracted over 600 bicycle riding children and their parents. The rodeo focuses on bicycle safety and helmet use. Participants can enter drawings to win helmets and bicycles.

LOS BANOS

There are several types of support facilities that can be installed to help encourage commuting to work, shop, or school on a bicycle. These include:

Bike Racks
Have high quality bike racks at all employment locations. Due to increasing popularity in bicycle commuting, bike racks exist at a number of sites in employment areas. Other major employers in the City of Los Banos that are not within target sites also provide bike racks. It is recommended to increase the number of bike racks at all schools.

Lighting
Provide lighting along bicycle paths to increase the users sense of safety and security.

Bike Racks on Buses
Merced County Transit has equipped all fixed route buses with bike racks.

Transit Center Connections
Work with Merced County Transit to coordinate and provide bike-to-transit connections at transit centers.

Bus Connections
Work with Merced County Transit to align bus stops at bike lanes, paths, or routes, and place bike racks at these bus stops.

Air, Oil and Bicycle Repair
Establish a program of citywide bicycle support facilities that includes access to air, oil, and other bicycle repairs at public places throughout the city and at other public places, such as service stations.

Bicycle Parking
New Development: Establish minimum standards for bicycle parking for all new public, semi-public, commercial and industrial development, perhaps in lieu of a portion of required automobile parking. Incorporate these standards into development codes.

Existing Development: Establish a program to encourage existing public, semi-public, commercial and industrial development to provide bicycle parking. Such a program might include city cost sharing or underwriting of bicycle racks, and other bicycle support facilities, in order to lower the costs and provide an incentive to those wishing to provide them. The City of Los Banos received Congestion Mitigation Air Quality (CMAQ) funds to purchase 22 bike hitches and 16 bike racks, the majority of which will be installed during the 06-07 budget year.

MERCED COUNTY - UNINCORPORATED AREAS
Very few support facilities (sporadically placed bicycle racks) currently exist in the unincorporated communities of Merced County. The University Community Plan includes policies for the installation of amenities to serve bicyclists.

CONNECTIVITY WITH TRANSIT SERVICES

In 2001, all of Merced County Transit fixed-route buses were equipped with bike racks allowing bicycle commuters to enhance their commuting options with access to countywide transit service. The bus mounted bike racks provide a vital link for bicycle commuters who would not commute if they had to ride the entire distance under their own power. Merced County is a large county with significant distances between the east side and the west side cities (City of Merced to the City of Los Banos) that are not practical for a bicycling commuter. The bicycle-bus racks are frequently used without any negative effects to the transit drivers or transit passengers.

Merced County Transit works very hard to provide bike-to-transit connections at transit centers. Annually, Merced County Transit identifies potential connections as part of public unmet transit hearings.

A brochure is published by Merced County Transit listing the various transit services and current routes for "THE BUS" provided on weekdays and on Saturdays.

TYPICAL BIKEWAY PROJECT COSTS

The cost of individual bikeway projects varies greatly dependent upon many factors. It is important to note that costs do not include the following:

- Right-of-way
- Environmental Studies
- Engineering
- Fencing
- Landscaping
- Irrigation
- Restrooms
- Turnouts
- Tables
- Emergency phone
- Picnic Tables
- Other Amenities

Table 3 identifies an estimate of bikeway project costs. Due to many project variables it is difficult to determine an exact project cost without much effort evaluating a specific project. The figures are a best guess on bike projects by classification. These figures are no guarantee that a bikeway project will actually be constructed at the suggested value.

Table 3 – Bikeway project cost

CLASS I BIKE PATH (Asphalt)	$200,000+ per mile to grade and pave an 8-foot wide asphalt surface with 2-foot wide graded shoulder on each side.
Class I BIKE PATH (Concrete)	$450,000+ per mile to grade and construct an 8-foot wide concrete surface with graded shoulder on each side.
CLASS II BIKE LANE	$7,500+ per roadway centerline mile for pavement striping, markings and signs on each side of the road.
	$200,000+ per roadway centerline mile for adding a 4 foot class II bikeway to both sides of an existing roadway.
CLASS III BIKE ROUTE	$1,500 per roadway centerline mile for signs on each side of the road.

PAST EXPENDITURES AND FUTURE FINANCIAL NEEDS

Each of the local bikeway networks within the sphere of MCAG member jurisdictions play a vital role is providing the local population opportunity for bicycle commuting.

The Regional Bikeway system will increase in importance as the county's population is expected to nearly double by 2020. It is important to promote bicycle planning and bike project delivery as new capacity increasing roads are built to accommodate new development.

If local jurisdictions practice smart growth planning policies, including prioritizing bikeway expansion, then the needs of the
non-motorized commuting population will be addressed.

Table 4 – Proposed Regional Bikeway Project Listing

Merced County Proposed Regional Bikeway Project listing by area with ranking				
AREA	**BIKEWAY PROJECT**	**RANK**	**Mileage**	**COST ***
**** cost does not included right-of-way acquisition, fencing, landscaping, irrigation, restrooms, turnouts, tables, emergency phone, other amenities***				
Merced	Bike under-crossing at Yosemite Ave. and Lake Road/ Reconstruct Class I Bike Path adjacent to Lake Road from Yosemite Ave. to Lake Yosemite	1	N/A	
	Bike Crossing at Highway 59 and existing Class I Bear Creek Bike Path - unsafe with railroad tracks and narrow bridge	2	N/A	* project to be included in the Highway 59 widening (const. 2007/08)
	Class II Bike Lane on Parsons from Yosemite Ave. south to the Class I Bear Creek Bike Path. A 4-way stop is needed at Olive Ave. and Parsons	4	1.48	$66,600
	Class II Bike Lane on Bellevue Road from G Street to Atwater	5	8.4	$378,000
	Class II Bike Lane on Yosemite Ave. from G Street to Lake Road	5	1.98	$89,100
	Bike/Ped Bridge over Bear Creek connecting north to south (somewhere between G Street and McKee Road - Parsons is a likely connector)	7	N/A	$200,000
	Bicycle signalization at Cottonwood Creek Class I Bike Path and G Street signal	8	N/A	
	Connect Class I Black Rascal Creek Bike Path north of Olive Ave. to Class I Bear Creek bike Path south of Olive Ave. at Highway 59	8	0.2	$9,000
	Connect Class I Cottonwood Creek Bike path to Lake Road Class I Bike Path	9	2	$200,000
	Bicycle signalization at intersections (left hand turn lane for bicycles to signal independently)	10		unknown
	Security system in bike under crossings			unknown
	Class II Bike Lane on Tyler Road from Childs to Dickenson Ferry Rd.		1.01	$45,450
	Class II Bike Lane on Dickenson Ferry Road from Tyler Rd. west to Gurr Road		1	$246,000
	Class II Bike Lane on Gurr Road south to Sandy Mush Road		5.51	$247,950
	Class II Bike Lane Highway 140 east to Winton Way		6.28	$282,600
	Class II Bike Lane on Childs Ave. east to Planada		6.66	$299,700
	Class II Bike Lane on G Street at 16th north to Farmland Ave.		2	$90,000
	Class II Bike Lane on Yosemite Ave. from Highway 59 east to Kibby Road		8.23	$370,300
	Extend North Bear Creek Class I Bike Path east to Kibby Road		1.75 * includes both sides	$200,000

			of creek	
	Class I Bike Path along Campus Parkway from Coffee Street to Childs Avenue. (Concrete Standard)	1	1.33	$600,000
	Class I Bike Path along Campus Parkway from Childs Avenue to State Route 140. (Concrete Standard)	1	1.33	$600,000
	Class 1 Bike Path along Campus Parkway from State Route 140 to Yosemite Avenue. Includes bridge structures over Bear Creek and Olive Avenue. (Concrete Standard)	1	2.2	$1,500,000
Hilmar	Hilmar Bike/Pedestrian Bridge across TID lateral canal No. 7 in the area of Maria Avenue adjacent to schools	1	N/A	$250,000
	Class II Bike Lane on Highway 165 from Bloss Avenue north to Merced County Line	3	4.3	$860,000
	Class II Bike Lane on Highway 165 from Bloss Avenue south to the Merced River	3	3.0	$600,000
	Class II Bike Lane on Bloss Avenue from State Route 99 to western edge of Hilmar	3	6.0	$1,200,000
	Class II Bike Lane on Geer Avenue from eastern edge to western edge of Hilmar	3	1.2	$240,000
	Class II Bike Lane on American Avenue from eastern edge to western edge of Hilmar	3	1.5	$300,000
	Class II Bike Lane on Camden Drive from Geer Avenue to northern edge of Hilmar	3	1.2	$240,000
	Class II Bike Lane on Echo Street from State Route 165 to eastern edge of Hilmar	3	1.0	$200,000
	Class 1 Bike Path along TID Lateral No. 7 from Echo Street to northern edge of Hilmar	3	2.8	$560,000
	Class 1 Bike Path along western collector road from Geer Avenue to the northern edge of Hilmar	3	1.2	$240,000
Gustine	Class II Bike Lane on Hunt Road south to Ingomar Grade Road on to Volta	3	12.35	$555,750
	Class II Bike Lane on Highway 33 north to Merced County line		3.59	$142,650
	Class II Bike Lane on Highway 33 south to Santa Nella		0.51	$22,950
Los Banos	Class I Bike Path on the abandoned Rail Road right of way starting at San Luis Canal heading southeast to Dos Palos	6	9.82	$982,000
	Class II Bike Lane Highway 152 from Mercey Springs Road west to the main canal		1.7	$76,500
	Class II Bike Lane on Highway 165 north to Henry Miller Road		7.2	$324,900
	Class II Bike Lane on Turner Island Road north to Sandy Mush Road		9.0	$405,000
Atwater	Class II Bike Lane on Bellevue Road to Lake Road and UC Merced		8.47	$381,150
	Class II Bike Lane on Applegate Road south to Highway 140		0.32	$14,400
	Class II Bike Lane on Santa Fe Drive to Merced		4.69	$211,050
Winton	Class II Bike Lane on Walnut Avenue from Winton Way west to Livingston	3	4.74	$948,000
	Class II Bike Lane on Walnut Ave.from Winton Way east to Shaffer Road	3	1.0	$200,000

	Class II Bike Lane on Santa Fe Drive from Shaffer Road northwest to Cressey	3	5.0	$1,000,000
	Class II Bike Lane on Jones Road and Myrtle Avenue from Santa Fe Drive to Winton Way	3	0.56	$112,000
	Class II Bike Lane on Winton Way from Myrtle Avenue to Almond Avenue	3	0.75	$150,000
	Class II Bike Lane on Shaffer Road from Santa Fe Drive north to Oakdale Road	3	5.0	$1,000,000
Cressey	Class II Bike Lane on Livingston-Cressey Road southwest to Livingston	3	4.13	$826,000
	Class II Bike Lane on Santa Fe Drive northwest to Ballico	3	2.62	$524,000
Ballico	Class II Bike Lane on Santa Fe Drive northwest to Merced County Line	3	4.76	$952,000
	Class II Bike Lane on Bradbury Road east to Lee Road to Oakdale Road	3	4.70	$940,000
Livingston	Class II Bike Lane on Bloss Ave. east to Hilmar		5.71	$256,950
	Class II Bike Lane on Lincoln Blvd. at Peach south to Highway 140		4.93	$221,850
Delhi	Class II Bike Lane on Schendel Road to Griffith Avenue	3	2.1	$420,000
	Class II Bike Lane on Stephens Street from El Capitan Way to Schendel Road	3	0.3	$60,000
	Class II Bike Lane on Griffith Avenue from Schendel Road to Bloss Avenue	3	1.5	$300,000
	Class II Bike Lane on August Road from Merced Avenue to Stephens Street	3	1.7	$340,000
	Class II Bike Lane on Letteau Avenue from Merced Avenue to El Capitan Way	3	0.9	$180,000
	Class II Bike Lane on Hinton Avenue from Schendel Road to August Road	3	0.6	$120,000
	Class II Bike Lane on South Avenue from Hinton Avenue to Sycamore Street	3	1.0	$200,000
	Class II Bike Lane on 4th Street from South Avenue to El Capitan Way	3	.85	$170,000
	Class II Bike Lane on Vincent Road from Bradbury Road to El Capitan Way	3	1.0	$200,000
	Class II Bike Lane on Bradbury Road from Early Dawn Road to TID Lateral 6	3	0.75	$150,000
	Class I Bike Lane on Bradbury Road from TID Lateral 6 to Vincent Road	3	0.67	$134,000
	Class I Bike Lane along North Avenue west of Vincent Road meandering to Bradbury Road	3	1.0	$200,000
	Class II Bike Lane on Sycamore Street from El Capitan Way to 2nd Avenue	3	1.0	$200,000
	Class II Bike Lane on Merced Avenue from Flower Street to August Road	3	1.75	$350,000
	Class II Bike Lane on Early Dawn Road and Flower Street to Merced Avenue	3	0.5	$100,000
	Class II Bike Lane on Shanks Road from Palm Street to August Road	3	2.1	$420,000
	Class I Bike Path on TID lateral No. 6 from Hwy 99 to	3	1.54	$308,000

	Merced Ave.			
	Class II Bike Lane on El Capitan Way from Stephens Street east to Santa Fe Drive (Cressey)	3	5.6	$1,120,000
Stevinson	Class II Bike Lane on Highway 140 from Van Clief Road east to Gustine	3	10.00	$2,000,000
	Class II Bike Lane on Highway 165 from the Merced River south to Los Banos	3	19.00	$3,800,000
Santa Nella	Class II Bike Lane on State Route 33 from McCabe Road south to State Route 152	3	4.00	$800,000
	Class II Bike Lane on Henry Miller Road from State Route 33 east to Los Banos	3	10.00	$2,000,000
	Class I Bike Lanes along primary roadways, pipeline easements and canals throughout community.	3	6.00	$1,200,000
Planada	Class II Bike Lane on Plainsburg Road from Arguello Drive north to South Bear Creek Dr.	3	2.81	$562,000
	Class II Bike Lane on State Route 140 from Plainsburg Road east to Merced County line	3	6.62	$1,324,000
	Class II Bike Lane on Santa Fe Avenue from Plainsburg Road southeast to Le Grand Road	3	5.44	$1,088,000
	Class II Bike Lane on Childs Avenue from the City of Merced to Santa Fe Avenue	3	4.75	$950,000
	Class II Bike Lane on Sutter Street from State Route 140 to Santa Fe Avenue	3	.45	$90,000
	Class I Bike Lane along Miles Creek and the Planada Canal	3	1.74	$348,000
Le Grand	Class II Bike Lane on Santa Fe Avenue from La Grand Road to Merced County line	3	5.94	$1,188,000
Snelling	Class II Bike lane on State Route 59 from Snelling Road to La Grange Road	3	1.50	$300,000
	Class II Bike Lane on La Grange Road north to Merced County line	3	6.53	$1,306,000
	Class II Bike Lane on Merced Falls Road from La Grange Road east to Hornitos Road	3	5.0	$1,000,000

ACTION ELEMENT

The Action Element identifies future bikeway improvements to address the non-motorized transportation needs of Merced County.

Overall development of non-motorized facilities is a responsibility of local government and state and federal agencies. Local governments are responsible for the planning and development of bikeways within their city limits. MCAG member jurisdictions must adopt the Merced County Regional Bicycle Transportation Plan into their local General Plans so that development does not encroach on proposed bikeway projects. Developers must be required to incorporate existing and future bikeway projects into project proposals to support bicycle commuting as an alternative mode of transportation.

Caltrans is responsible for developing and maintaining bikeways along state highways or where established bike paths are interrupted by highway construction. The federal government is responsible for funding along interstate highways if provision of bikeways will enhance safety.

The Transportation Equity Act for the 21st Century (TEA-21) changed transportation planning on a national level by allowing bicycle transportation and pedestrian walkway projects to compete with other transportation projects for federal aid funds. TEA-21 elevated the priority of bikeway projects as they are now viewed as an integral part of the transportation system, not just as an add-on when additional funds are available. TEA-21 requires that:

- Bicyclists and pedestrians shall be given due consideration in State and MPO long range transportation plans (RTPs).

- Bicycle and pedestrian projects shall be considered, where appropriate, in conjunction will all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use is not permitted.

- Transportation plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians.

On August 10, 2005, President George W. Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009

The State of California in recent years has shown a growing interest in the development of bicycle and pedestrian facilities as a commuter alternative. As roads in California become more congested, alternative modes of transportation will play a much greater role in employment opportunities and simply a better way of life for local communities.

The following table outlines implementation of specific action items to promote bicycle commuting and the agency responsible for the action.

Table 5 – Action Items

ACTION	AGENCY	TIME FRAME
Promote Bicycle Education and Safety	MCAG Merced Police Dept.	Quarterly in each jurisdiction Ongoing
Adopt new policy that all new highway overcrossings and frontage roads require Class II Bicycle Lanes	Caltrans	As new road projects are developed
Bicycle Transportation Planning	MCAG	Ongoing with each new road project
Bicycle Technical Advisory Committee	MCAG	Meet quarterly as needed to address community bicycle needs
Submit accident reports to the Traffic Committee	Merced Policy Dept.	Traffic Committee schedule
Bikeway project expansion tied to the local development "early referral" planning process	Merced County City of Atwater City of Dos Palos City of Gustine City of Livingston City of Merced City of Los Banos	1) Ongoing with each new road rehabilitation project 2) New development encroaches on proposed bikeway projects
Transportation Planning Workshop	MCAG	Annually
Local Bicycle Plan Updates	MCAG	Every four years Caltrans BTA requirements
Regional Bicycle Plan Updates	MCAG	Every four years
Complete Environmental Impact Report (EIR) and Environmental Impact Study (EIS) on the Regional Bicycle Commuter Plan	MCAG	Every four years
Regional Bicycle Plan Adoption by Member Jurisdictions	Merced County City of Atwater City of Dos Palos City of Gustine City of Livingston City of Merced City of Los Banos	1) Every four years per Caltrans BTA requirements 2) Re-adoption as needed with bikeway project changes
Caltrans Bicycle Transportation Account Grants	Merced County City of Atwater City of Dos Palos City of Gustine City of Livingston City of Merced City of Los Banos	Annually
Caltrans Safe Routes to Schools Grant funding	Merced County City of Atwater City of Dos Palos City of Gustine City of Livingston City of Merced City of Los Banos	Annually
SAFETEA-LU Bicycle Grant funding	Merced County City of Atwater City of Dos Palos City of Gustine City of Livingston City of Merced City of Los Banos	Annually
Other Bicycle Grant Funding Programs	MCAG	Annually

BIKEPLAN PUBLIC COMMENTS

The 2003 Draft of the Merced County Regional Commuter Bicycle Plan was circulated through MCAG committees, public workshop participants, and was posted on the MCAG website. No comments were received from the public on the draft plan.

CONCLUSION

The intent of the Merced County Regional Bicycle Transportation Plan is for adoption and incorporation as part of local General Plans - Transportation & Circulation elements along with the non-motorized transportation sections.

Plan Update

Evaluating and changing the Merced County Regional Bicycle Transportation Plan on a regular basis is important for several reasons. As the cities and County grows, the bikeway system should also expend in a well-connected manner. While this program requires bike paths, bike routes, or bike lanes on or along all arterials that will provide continuity, other bikeways will become important. Bikeway safety should be evaluated so that any unforeseen potential hazards can be mitigated in an appropriate manner.

Preventative Maintenance

Preventative maintenance, upgrading bikeways, and cleaning/sweeping will help in reducing costly repair projects. Also, bicycle parking or re-striping of bike lanes needs to be address regularly.

Bicycle Transportation Account Requirements

The State of California's Bicycle Transportation Account requires that this plan be updated every four years (prior to July 1 of the fiscal years in which BTA funds are granted) to maintain eligibility for funding.

BICYCLE PROJECT FUNDING SOURCES

Background

There are a variety of potential local, state, and federal funding sources available for bikeway projects and facilities. The primary funding sources for bicycle projects and programs are:

- **Federal**
  SAFETEA-LU Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009

- **State**
  California Bicycle Transportation Account (BTA)

- **Local**
  Transportation Development Act (TDA)

Unfortunately these funding sources are inadequate for proposed bicycle projects and programs throughout the state. See Table 6 for a summary of bicycle funding sources. Other sources identified on the following pages explain federal, state, and local monies dedicated to improving bikeway systems.

Table 6 – Summary Table of Bicycle Funding Sources

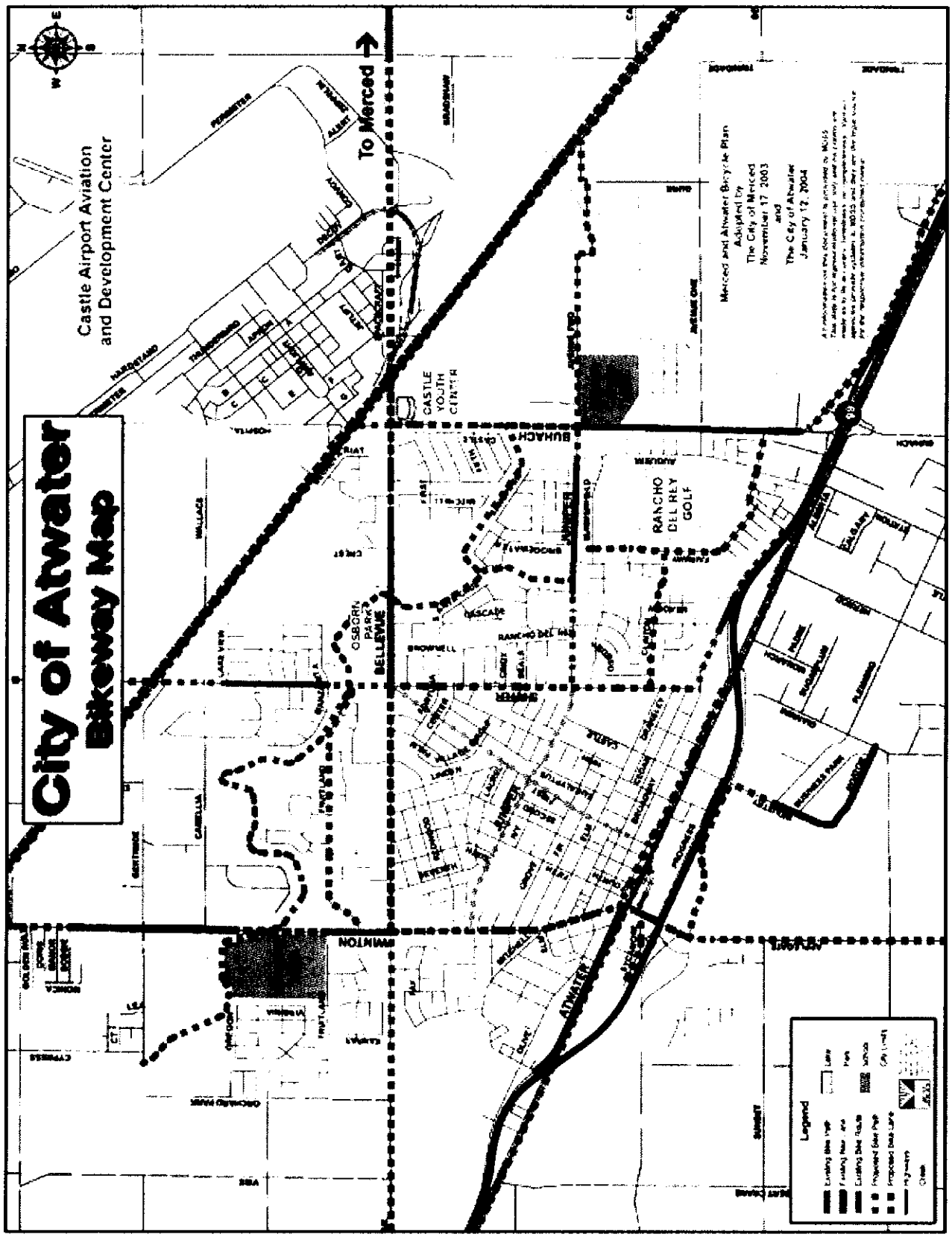
Funding Source	Programming Agency	Approving Agency	Required Matching Funds	Application Cycle	Eligible Bikeway & Support Projects	Available Funding
State						
Bike Lane Account (BLA)	Caltrans	Caltrans	10%	Annual, December for next fiscal year	Bikeways, bike safety, storage, & planning	$7.2M annually until 2005, then $5M annually
Environmental Enhancement and Mitigation (EEM)	California Transportation Commission (CTC)	CTC	None	Annual, November	Roadside landscape and recreation	$10M annually statewide
Traffic System Management Match Program (TSM)	Merced County Assoc. of Governments (MCAG)	Caltrans	11.5-20%	Ongoing-competitive process	Bikeways and support facilities	
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users SAFETEA-LU	Merced County Assoc. of Governments	CTC	11.5-20%	Bi-annual, August	Pedestrian and bicycle projects including landscaping and scenic beautification	
Urban Greening & Urban Forestry	CALFIRE	CALFIRE	35%	Annual, October	Trees, Tree Stakes	$500,000
Federal						
Surface Transportation Program (STP)	MCAG	MCAG	11.50-20%	varies	state roads, bridges, transit capital, bicycle and pedestrian projects	$200M annually; 62.5% distributed per regional state popuation, 37.5% spent anywhere in the state.
Congestion Mitigation/Air Quality (CMAQ)	MCAG	Caltrans or US DOT	20%	Ongoing-competitive process	Bikeways and support facilities	
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users SAFETEA-LU	MCAG	CTC	11.50%	Every two years, October	bicycle and pedestrian facilities; many others	10% of Annual STP apportionment
National Highway Safety Act Funds (Section 402)	Office of Traffic Safety (OTS)	OTS	Unknown	Annual; anytime during the year	Bicycle and pedestrian safety	Program funds distributed to the states 75% by population and 25% by road mileage

Table 6 – Summary Table of Bicycle Funding Sources Continued

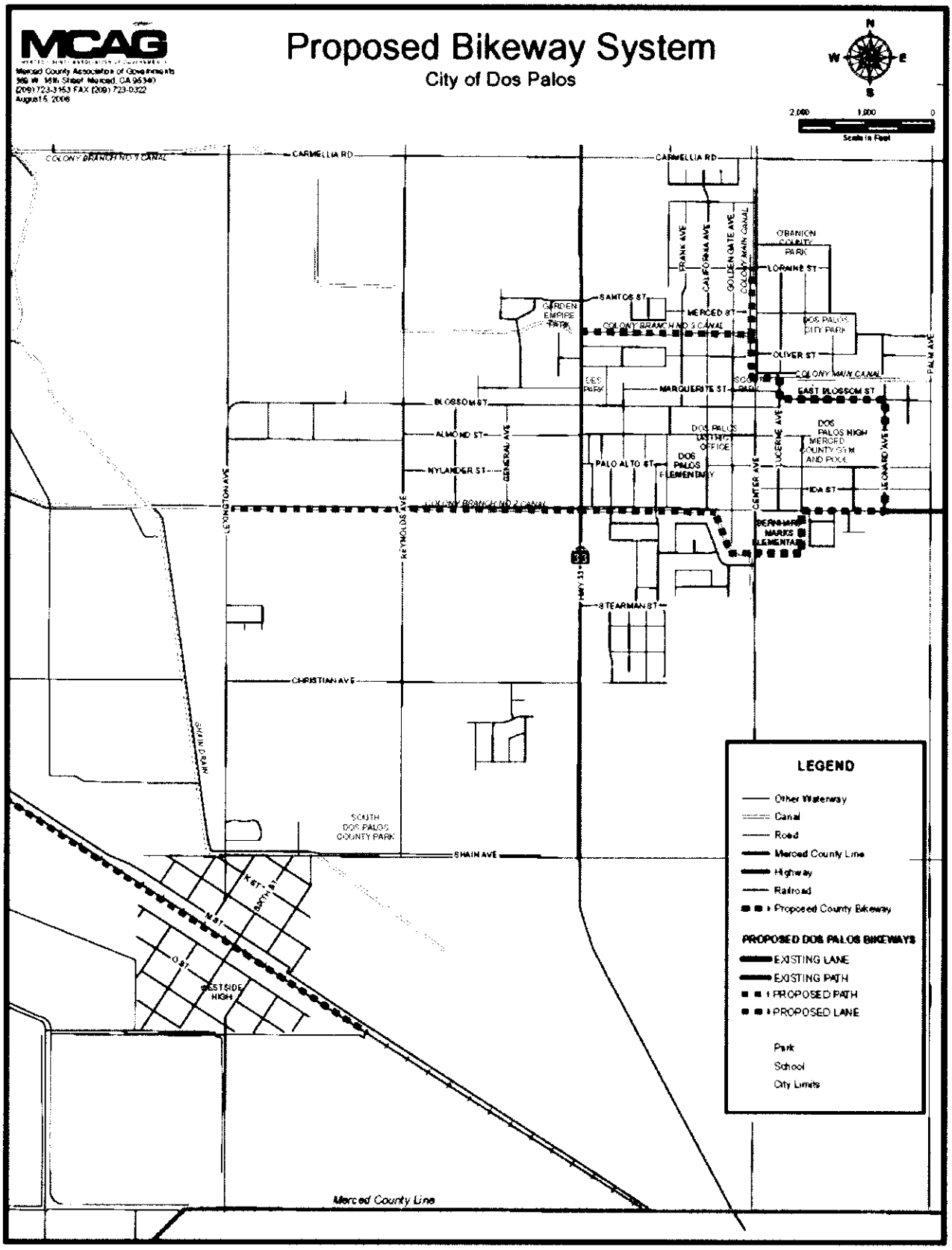
Local and Regional						
Local Transportation Fund (LTF)	State Transportation Development Act (TDA)	State Transportation Development Act (TDA)	None	Annual; October	Bicycle Safety Education Programs	2% for non-motorized bicycle/ped facilities; 5% max for bicycle education program
Reduce Motor Vehicle Emissions Program (REMOVE)	San Joaquin Valley Air Pollution Control District (SJVAPCD)	San Joaquin Valley Air Pollution Control District (SJVAPCD)	varies	varies	bicycle facility improvements, bicycle safety enforcement	varies
Registration and Bicycle Licensing	Local jurisdictions	Local jurisdictions	NA	NA	bicycle related programs and projects	varies
State Planning and Research Program (SPR)	Caltrans District Offices	Caltrans District Offices	none	Annual; February	Special transportation related studies showing statewide benefit	varies

APPENDIX A
EXISTING & PROPOSED BIKEWAY MAPS BY JURISDICTION

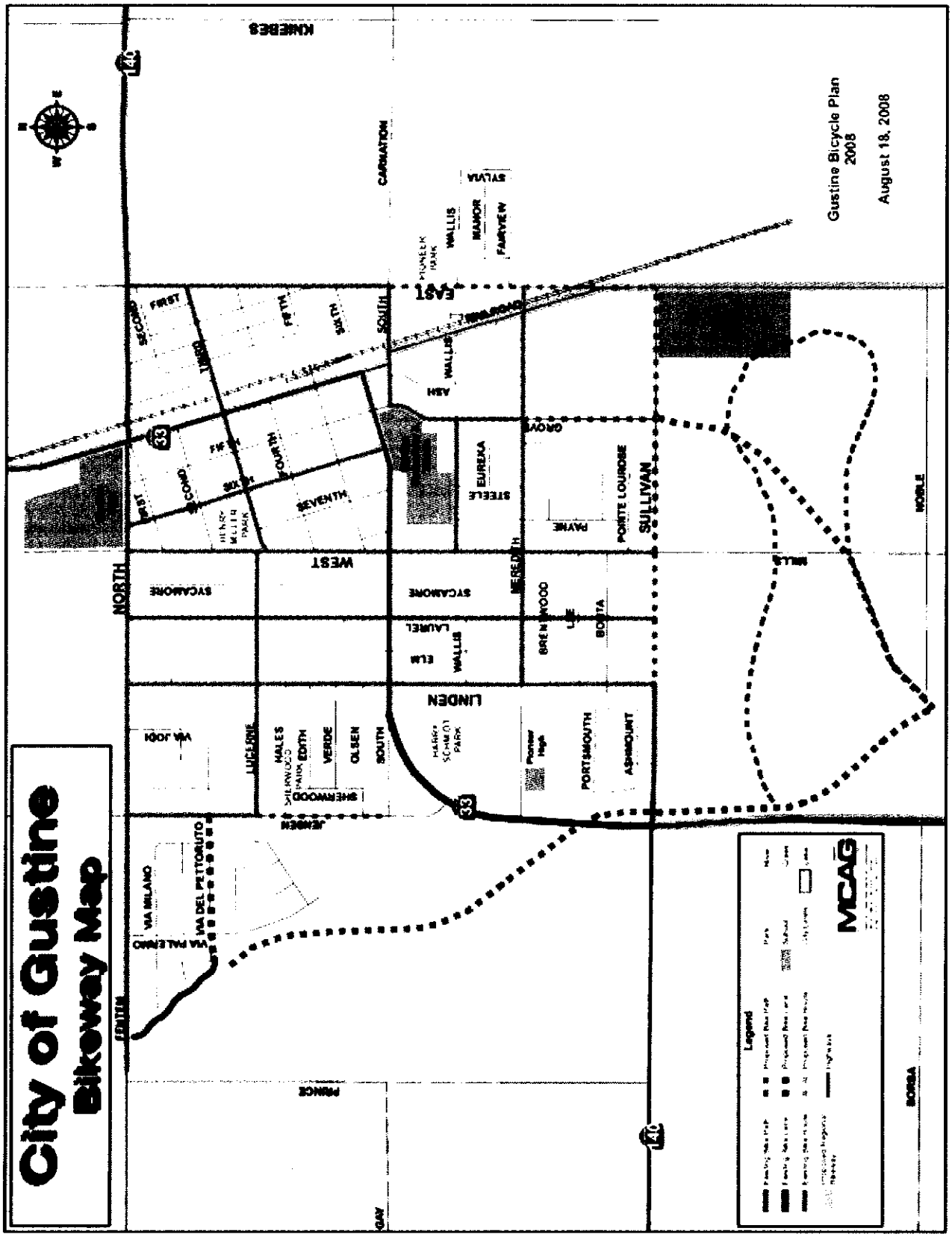
City of Atwater Existing & Proposed Bikeway System



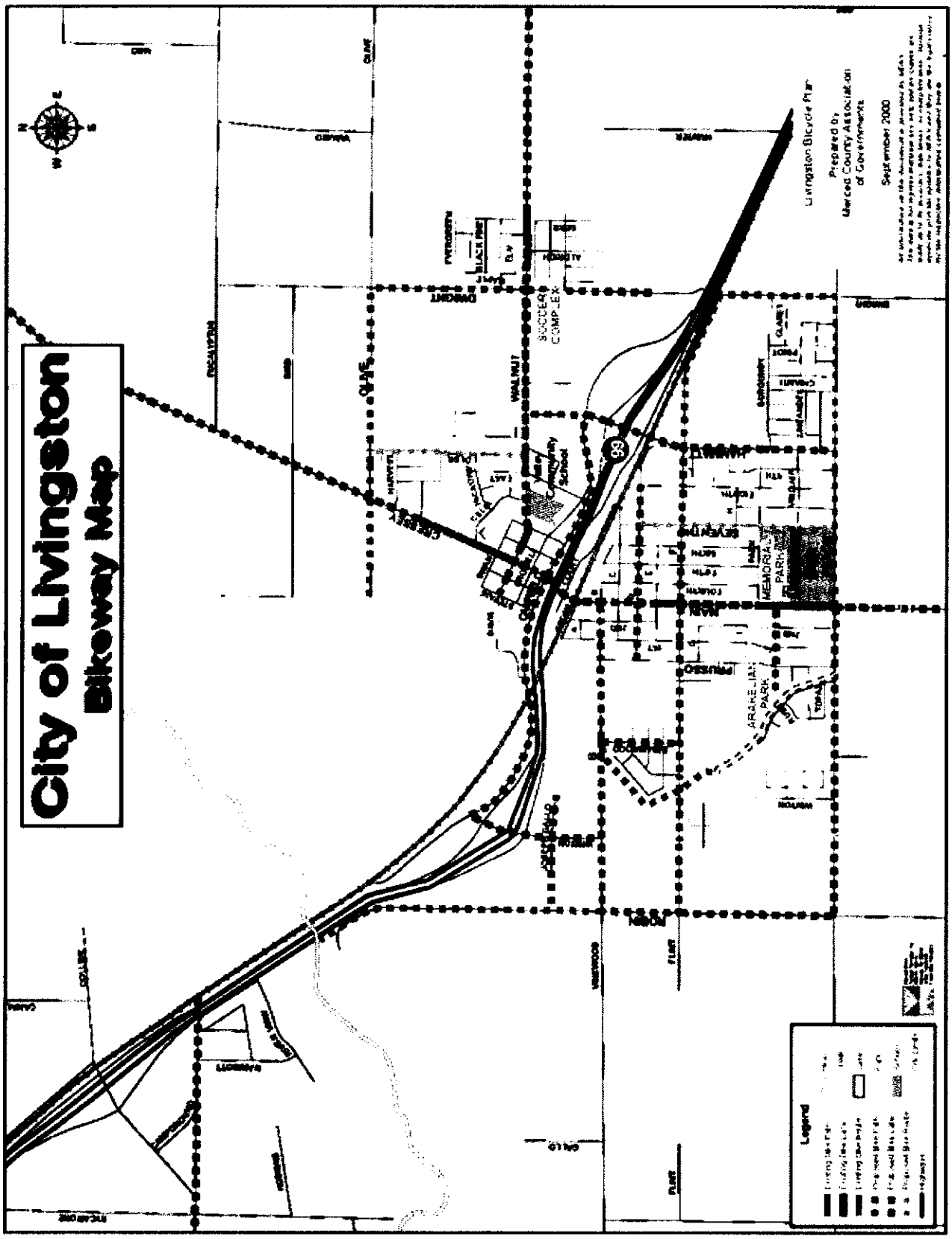
City of Dos Palos Existing & Proposed Bikeway System



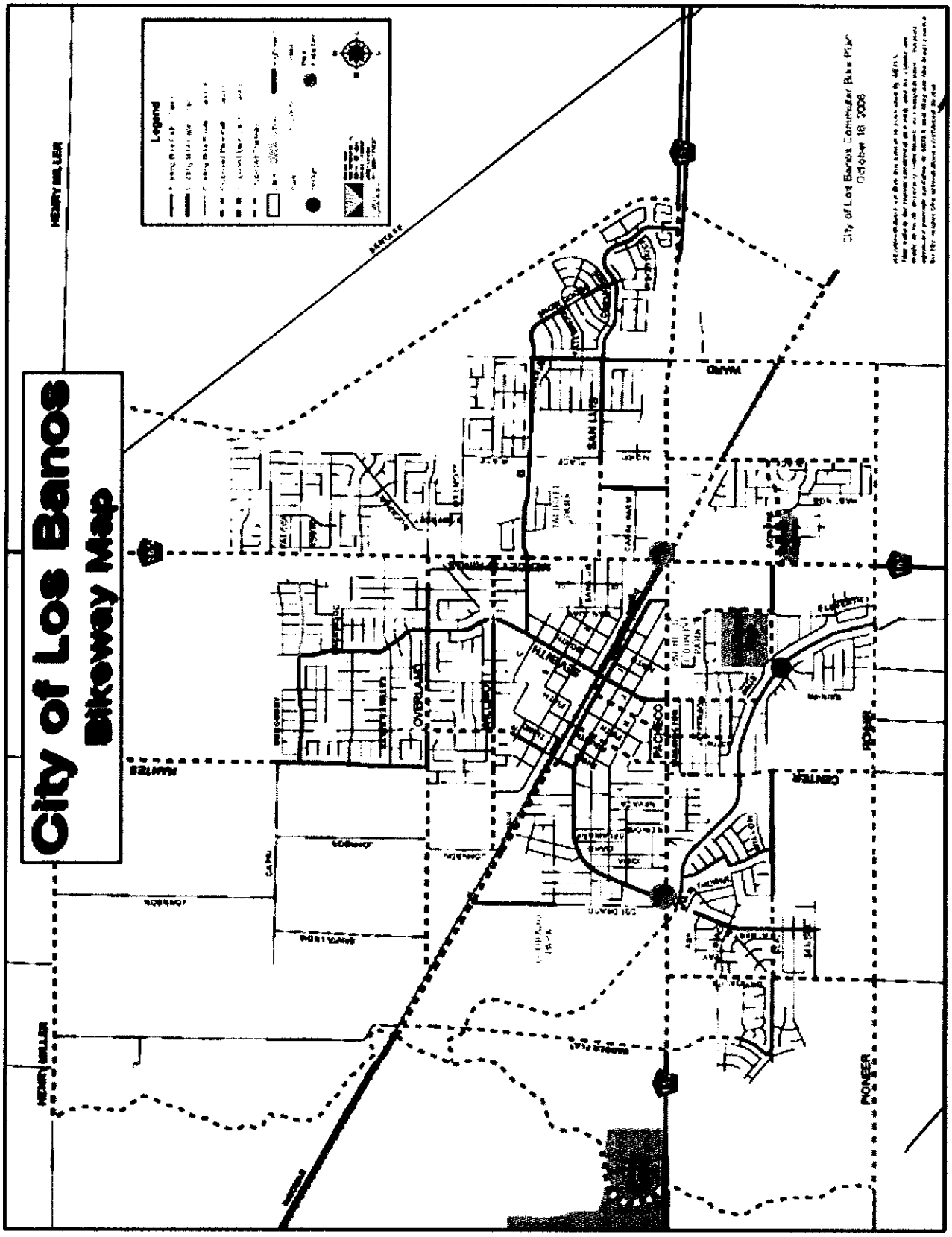
City of Gustine Existing & Proposed Bikeway System



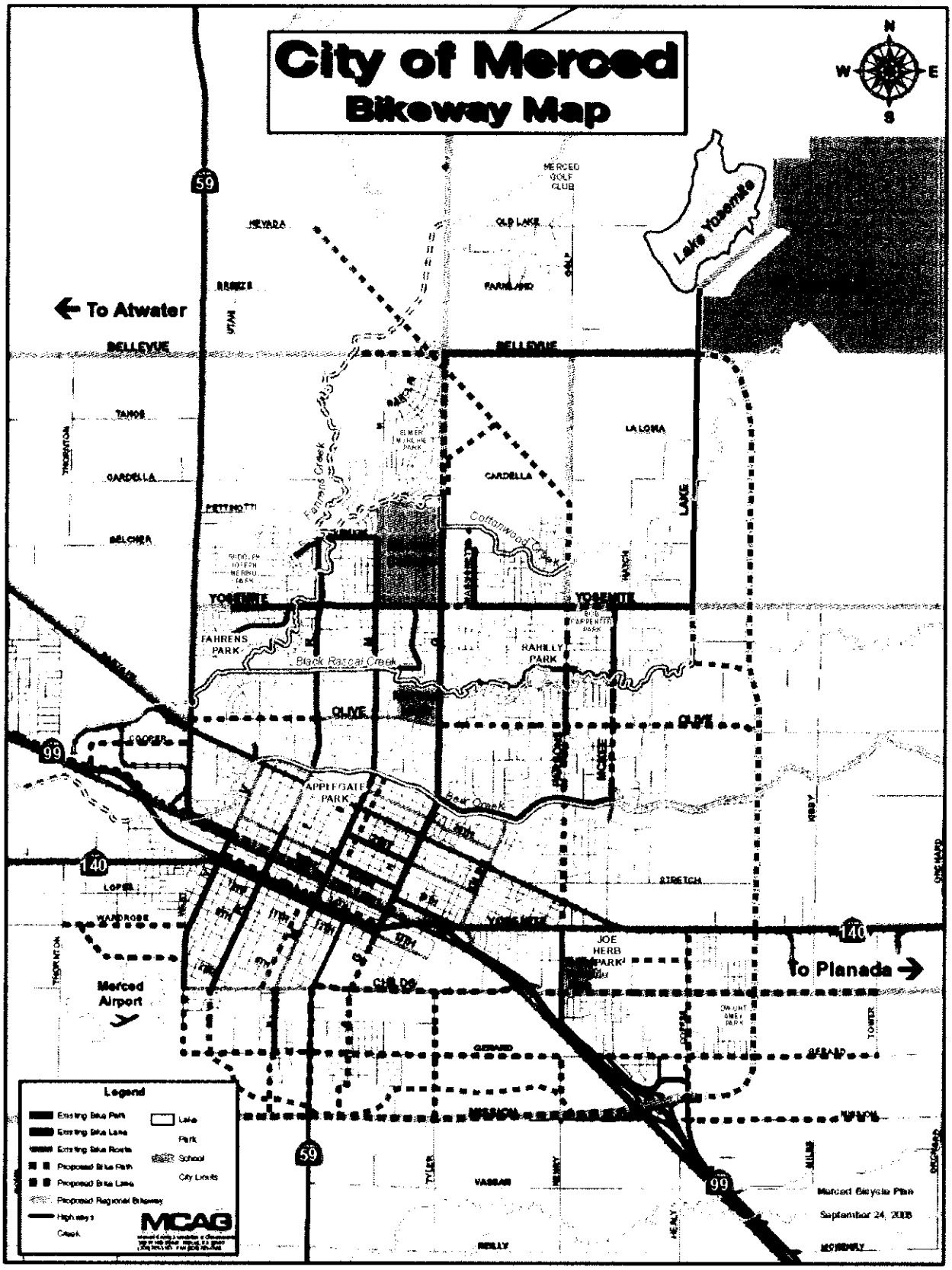
City of Livingston Existing & Proposed Bikeway System



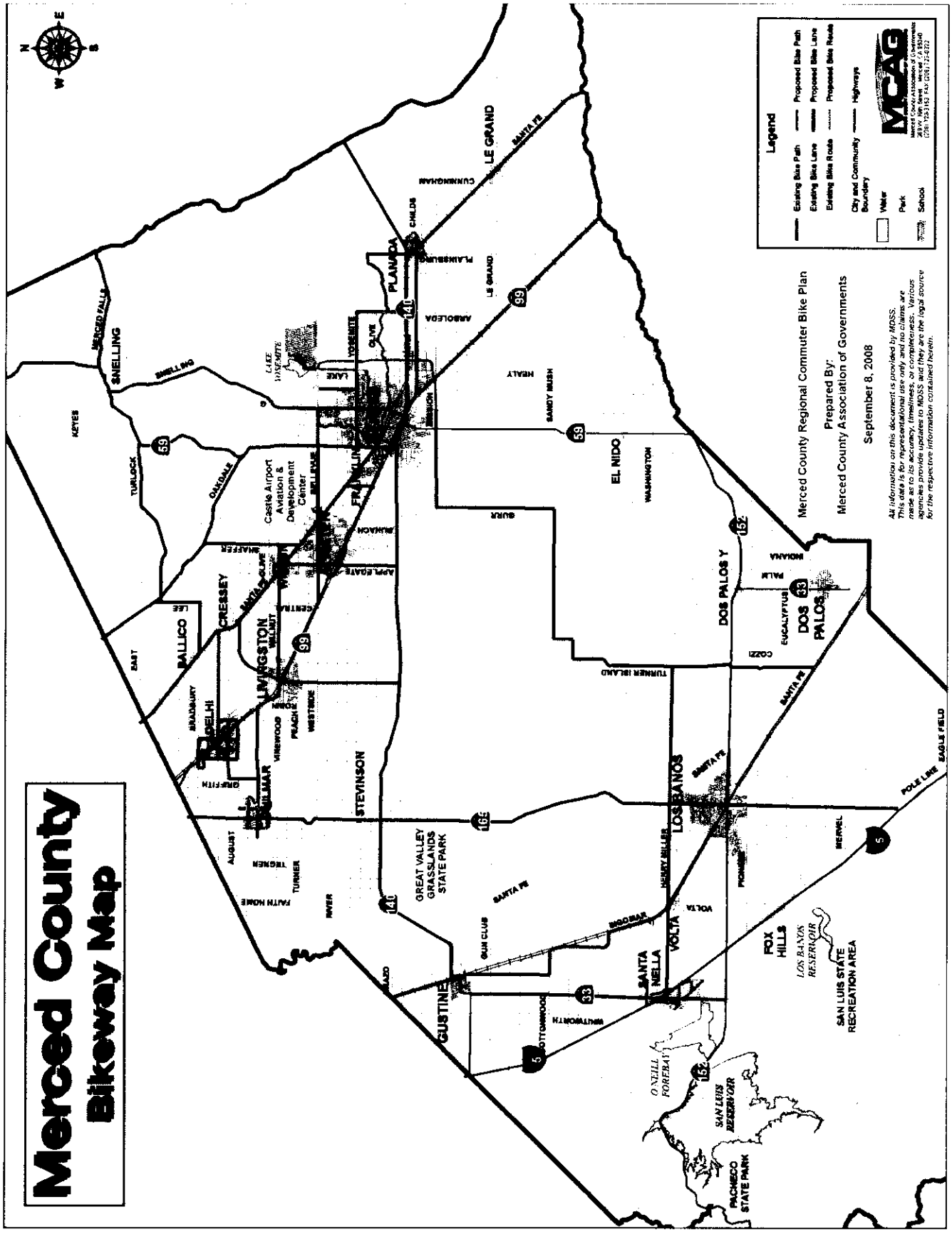
City of Los Banos Existing & Proposed Bikeway System



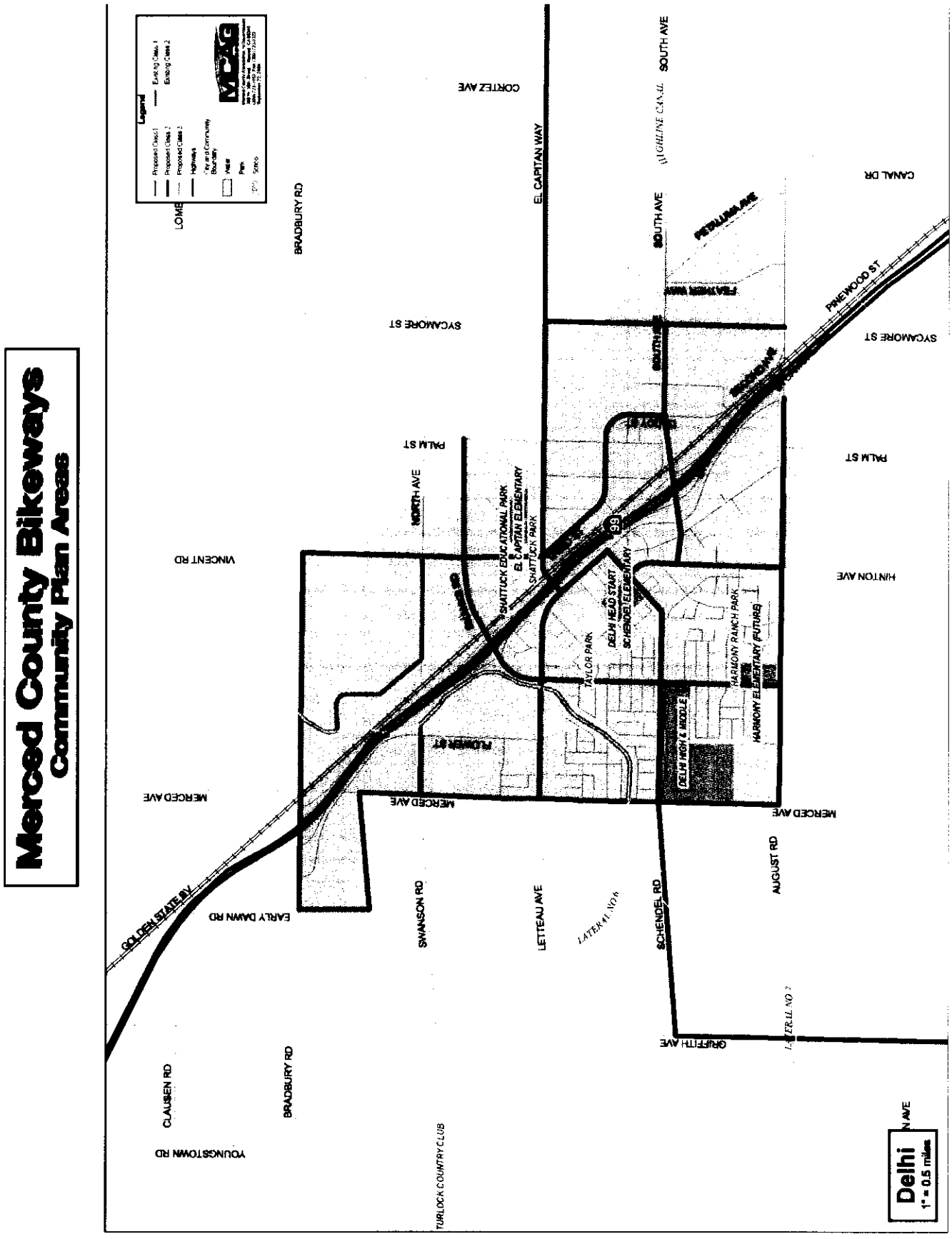
City of Merced Existing & Proposed Bikeway System



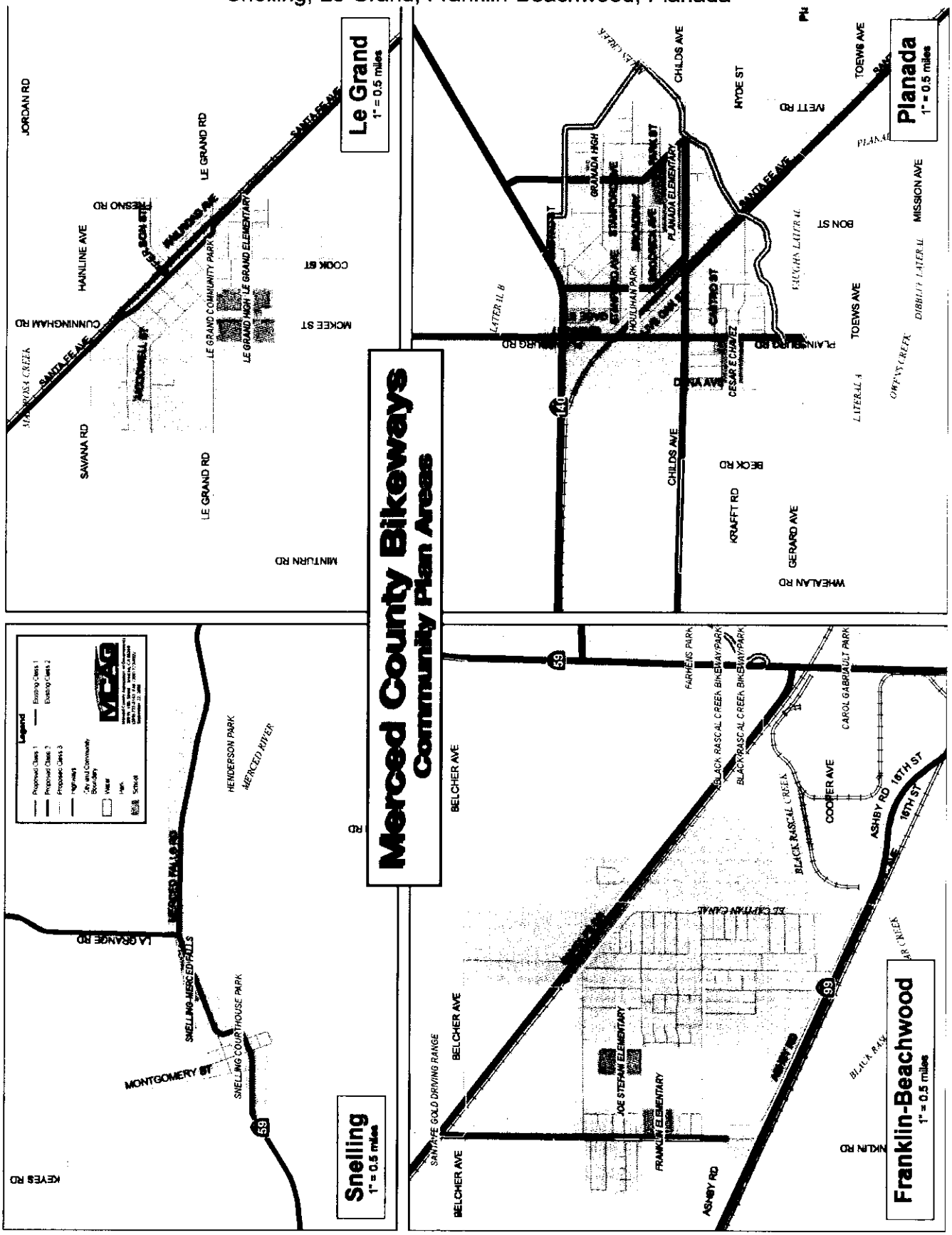
Insert Merced County Regional Existing & Proposed Bikeway System



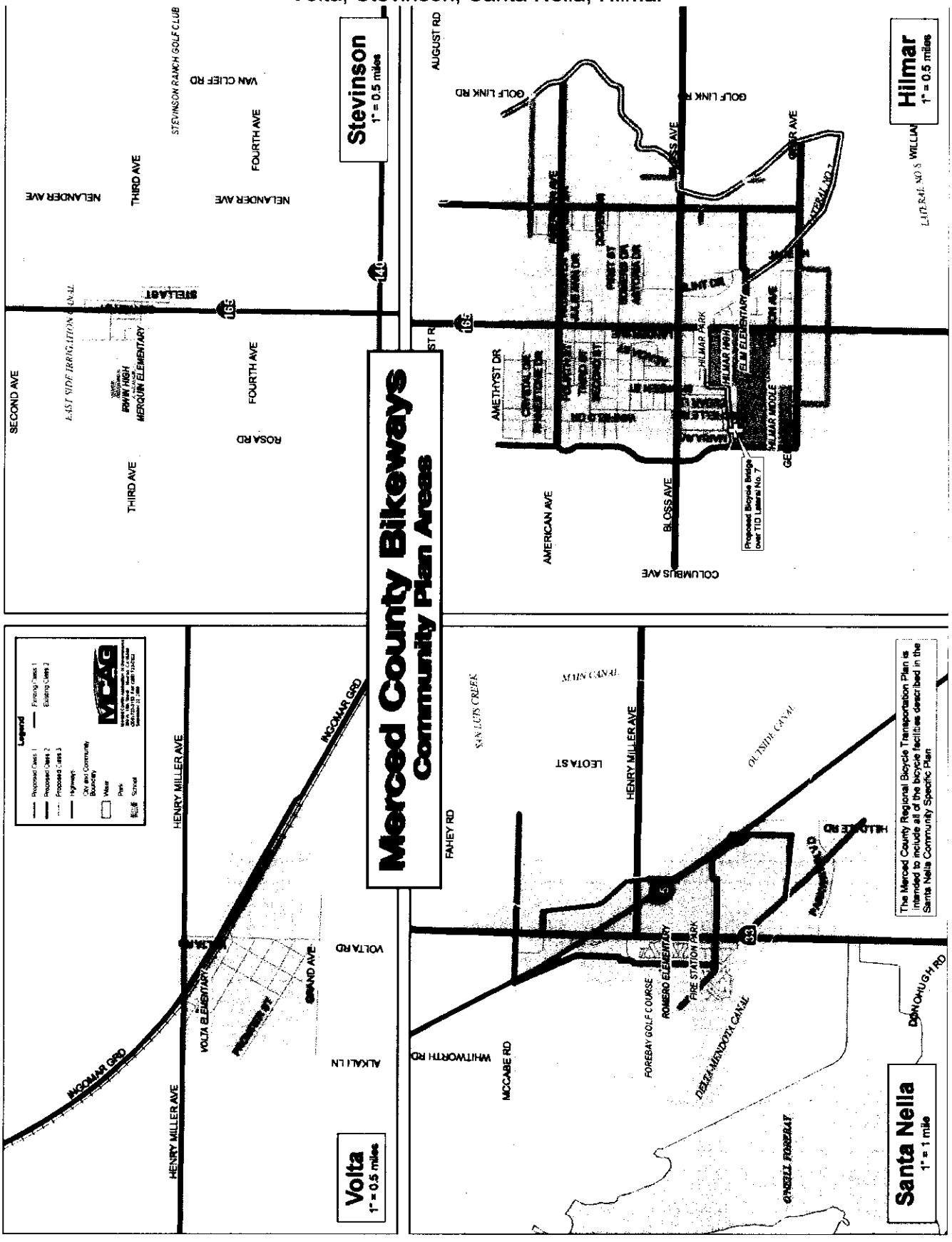
County of Merced Unincorporated Areas
Delhi



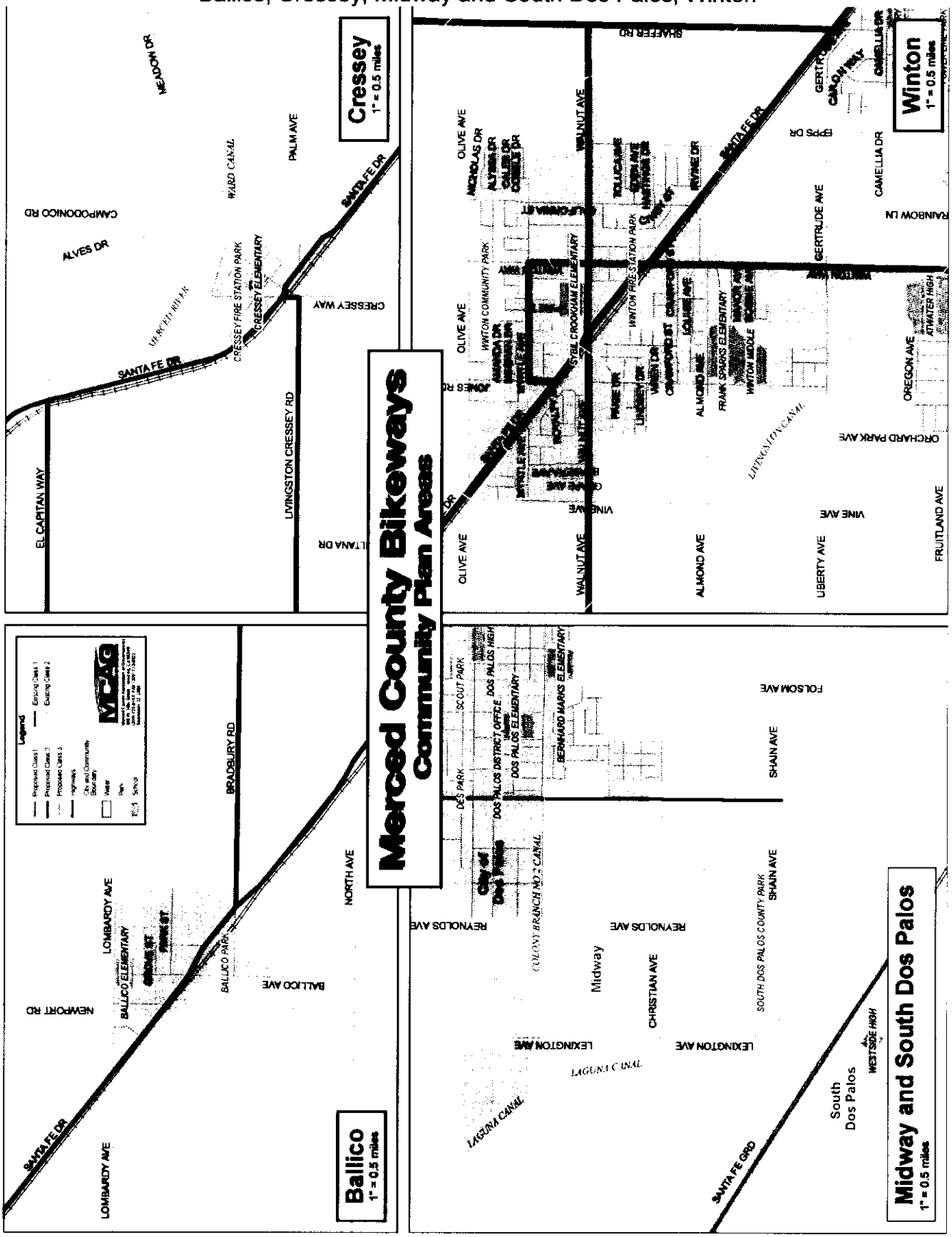
County of Merced Unincorporated Areas
Snelling, Le Grand, Franklin-Beachwood, Planada



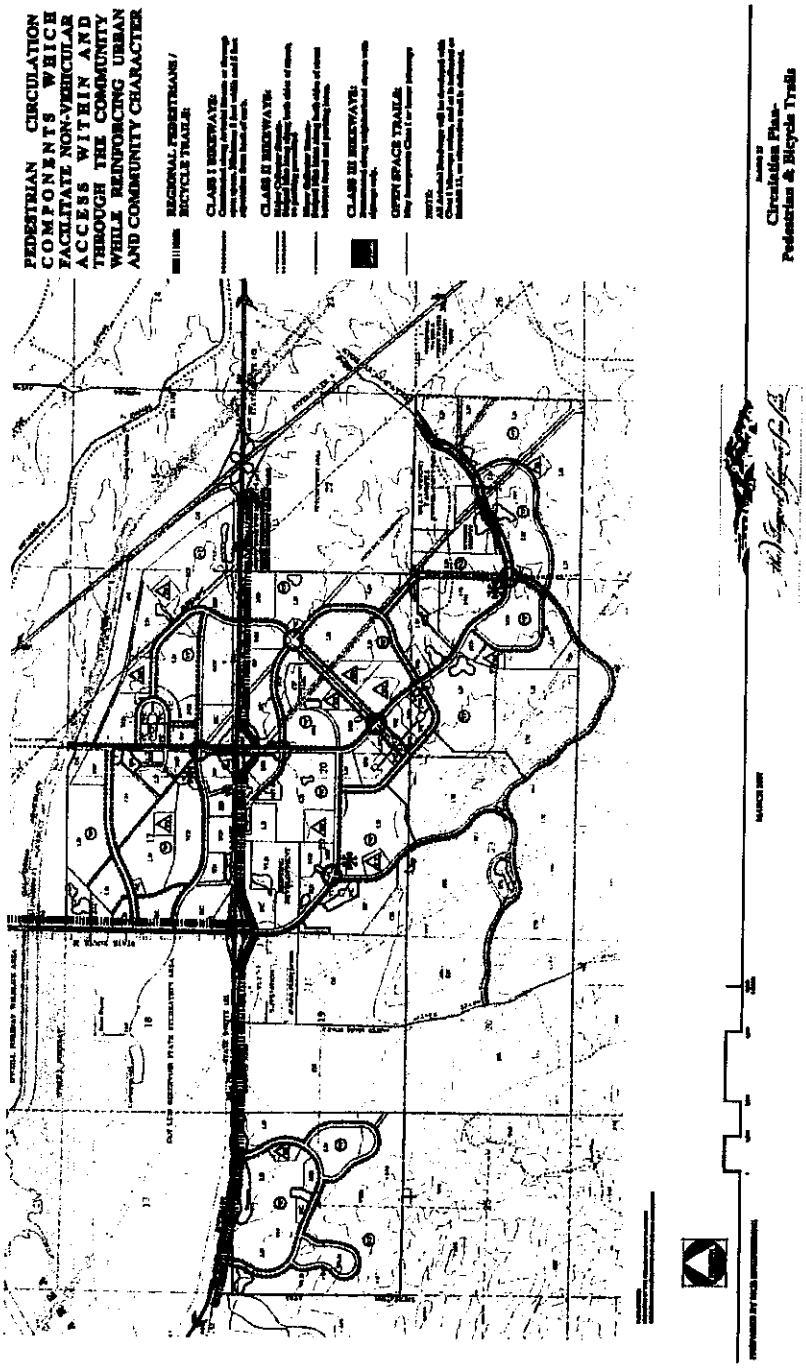
County of Merced Unincorporated Areas
Volta, Stevinson, Santa Nella, Hilmar



County of Merced Unincorporated Areas
Ballico, Cressey, Midway and South Dos Palos, Winton



County of Merced Unincorporated Areas
The Villages of Laguna San Luis Community Plan was recently completed.
Attached is the Circulation Plan – Pedestrian & Bicycle Trails



APPENDIX B
BICYCLE PARKING STANDARDS

BICYCLE PARKING GUIDELINES

The amount of bicycle parking needed for a particular area depends upon the type of occupancy, the location and proximity to streets with heavy bicycle traffic, and the relationship of the project area to adjacent and nearby businesses, etc. A standard automobile stall provides sufficient parking space for twelve bicycles. Similar to bikeways, bike parking facilities are categorized as:

- Class I parking facilities include covered storage lockers that offer maximum theft and weather protection
- Class II parking facilities include wooden or steel bike racks to which a bicycle frame and wheels can be locked
- Class III parking facilities include concrete pods or small racks in which one bicycle tire is placed

The following are recommended amounts of bicycle parking for several types of land uses. These amounts can be adjusted up or down for a particular project.

1. Commercial, all zones, bicycle spaces numbering 10% of vehicle spaces otherwise required.

2. Provide one bicycle space for every 10 employees during the heaviest work shift, in addition to bicycle parking otherwise required for visitors. This parking may be separately located from the public parking, but should be at least as convenient as employee vehicle parking.

3. For public facilities such as municipal offices, parks, swimming pools, parks, auditoriums, churches, and similar uses, provide bicycle spaces numbering 10% of vehicle parking normally required, or immediately available in the facility.

Experience has shown that modest amounts of bicycle parking at many dispersed locations is preferable to few high capacity facilities. Cyclists tend to shun bike parking, unless the parking is very close to destination. To determine the need and amount of bicycle parking, first identify those locations where parked bikes exceed the available parking, and find those locations where bikes are parked and no parking is provided. In this manner, parking can be provided to meet the need.

APPENDIX C
BICYCLE STORAGE FACILITIES STANDARDS

BICYCLE STORAGE FACILITIES STANDARDS

Bicycle storage facilities can increase bicycle usage if they perform at acceptable levels for bicyclists, and are conveniently located to entrances and other facilities attracting bicyclists.

BICYCLE STORAGE FACILITIES DESIGN

For bicycle storage facilities to best serve the needs of bicyclists they should:

- Support the frame of the bike, not only the wheels
- Allow at least one wheel to be locked to the rack
- Allow two bikes to be locked with one rack
- Allow all types of locks to be used
- Promote organized parking while minimizing space requirements

BICYCLE STORAGE LOCATIONS

The location of bicycle storage facilities is essential for optimum usage by bicyclists.

Bike storage locations should be:

- Located near main entrances
- Located in well-lit areas
- Located in well-shaded areas or enclosed
- Located where bicyclists can access the facilities from all sides
- Located along natural surveillance corridors where pedestrian traffic is heavy

APPENDIX D
FEDERAL, STATE, AND REGIONAL AIR QUALITY REQUIREMENTS

FEDERAL, STATE, & REGIONAL REQUIREMENTS FOR AIR QUALITY

FEDERAL CLEAN AIR ACT AMENDMENTS OF 1990

The Federal Clean Air Act Amendments of 1990 are intended to provide for the attainment of all National Ambient Air Quality Standards (NAAQS). Dates for attainment are dependent upon the nonattainment pollutant and the severity of the existing problem.

Under Federal standards, the San Joaquin Valley Air Basin, including the Merced County region, is designated as nonattainment for two pollutants:

- Ozone, which has two precursors nitrogen oxide (NOx) and volatile organic compounds; and,

- Particulate matter less than ten (10) microns (PM-10).

The San Joaquin valley was reclassified as "severe" ozone area in December 2001. As a result of the reclassification, California was required to submit: a 2005 attainment demonstration; a reasonable further progress demonstration; Reasonably Available Control Technology (RACT) and permit rules to address more stringent stationary source (25 tons per year); offset (1.3 to 1.0) thresholds; a fee rule for major sources in case the area fails to attain by 2005; and an emissions inventory with contingency measures. The San Joaquin Valley Air Pollution Control District SJVAPCD) has adopted rules to address many of the above requirements, however, not all the requirements have been addressed.

The Federal Environmental Protection Agency (EPA) expects the San Joaquin Valley to adopt and submit a reasonable further of progress demonstration with an inventory and contingency measures as well a lime kiln RACT rule by the end of 2002. The San Joaquin Valley Air Control Pollution District (SJVAPCD) is currently considering a reclassification to "extreme" ozone nonattainment that would change the attainment demonstration date from 2005 to 2010.

The EPA has issued a finding of failure to submit the following severe area requirement: A 2005 attainment demonstration; a reasonable further progress demonstration; a lime kiln RACT rule; emissions inventory and contingency measures. EPA's finding started a set of sanctions and Federal Implementation Plan (FIP) clocks for the San Joaquin Valley. California must make the required submittals by March 2004 to avoid more stringent requirements for new sources and by September 2004 to avoid highway sanctions and a FIP.

Several major urbanized areas in the San Joaquin Valley Air Basin (Stockton, Modesto-Ceres, Fresno, and Bakersfield) are classified at various levels of nonattainment for carbon monoxide (CO). CO nonattainment jurisdictions will be required to submit new CO attainment plans in 2003.

The San Joaquin Valley has been designated "severe" for Particulate Matter10 (PM10) nonattainment. The SJVAPCD must submit a new PM10 plan to the EPA by December 31, 2002. The new PM10 plan must provide for annual reductions in PM10 or PM10 precursor emissions of five percent per year until attainment standards can be demonstrated. In addition, the PM10 plan must include enforceable commitments to implement all Best Available Control Measures (BACM) of PM10 emissions. SJVAPCD will control PM10 emissions through compliance with REG VIII requirements.

CALIFORNIA CLEAN AIR ACT

The 1988 California Clean Air Act (CCAA) has been nearly forgotten in the last few years, as agencies throughout the state grapple with the explicit and inflexible requirements of the Federal Clean Air Act. However, the CCAA imposes specific mandates on the State, some of which are more stringent that the federal requirements. CCAA requirements applicable to the San Joaquin Valley include requirements for plans and programs that:

- Provide for 5% per year reductions in nonattainment emissions, or inclusion of every feasible measure in the required Air Quality Attainment Plan;
- Achieve no net increase in stationary source emissions;
- Reduce vehicle trips, use, and miles of travel;
- Increase average vehicle rider ship to 1.5 persons per vehicle during commute hours by January 1, 1999;
- Reduce population exposure to nonattainment pollutants by 25% by December 31, 1994; and
- Develop indirect and area source rules.

The California state ambient air quality standards must be achieved as expeditiously as practicable. There is no attainment deadline in state law as there is in federal law.

INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) made significant changes to federal planning and funding programs for transportation. ISTEA provided for higher levels of funding for maintenance projects and capital improvements; offered opportunities for "flexible funding", using available funds in major funding programs for the most effective transportation project, with less regard to transportation mode; and, created several new funding programs specifically for projects that would improve air quality and/or enhance the transportation system in non-traditional ways. ISTEA also strengthened the requirements for transportation planning in air quality nonattainment areas and gave further significance to the process of demonstrating "conformity" with the State Implementation Plan for Air Quality required under the Federal Clean Air Act.

The successor legislation to ISTEA is the Transportation Equity Act of the 21st Century (TEA-21). TEA-21 is federal legislative law that authorized federal highway, highway safety, transit and other surface transportation programs. TEA-21 was signed into law June 9, 1998 and covers the period October 1, 1997 through September 30, 2003. TEA-21 builds on the initiative established in ISTEA, yet is historic and differs in a number of ways:

- TEA-21 is the largest public works bill in history authorizing $218 billion in federal funds over 6 years.
- TEA-21 provides significant increases in highway and transit funds.
- TEA-21 changes the federal budget rules to “guarantee” minimum funding levels for federal highways, highway safety and transit programs.
- TEA-21 assures that each state receives a minimum return on the amount of gasoline taxes distributed to the Highway Trust Fund.

On August 10, 2005, President George W. Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009

APPENDIX E
LAND USE PLANNING MAPS BY JURISDICTION

City of Atwater Land Use and Population map

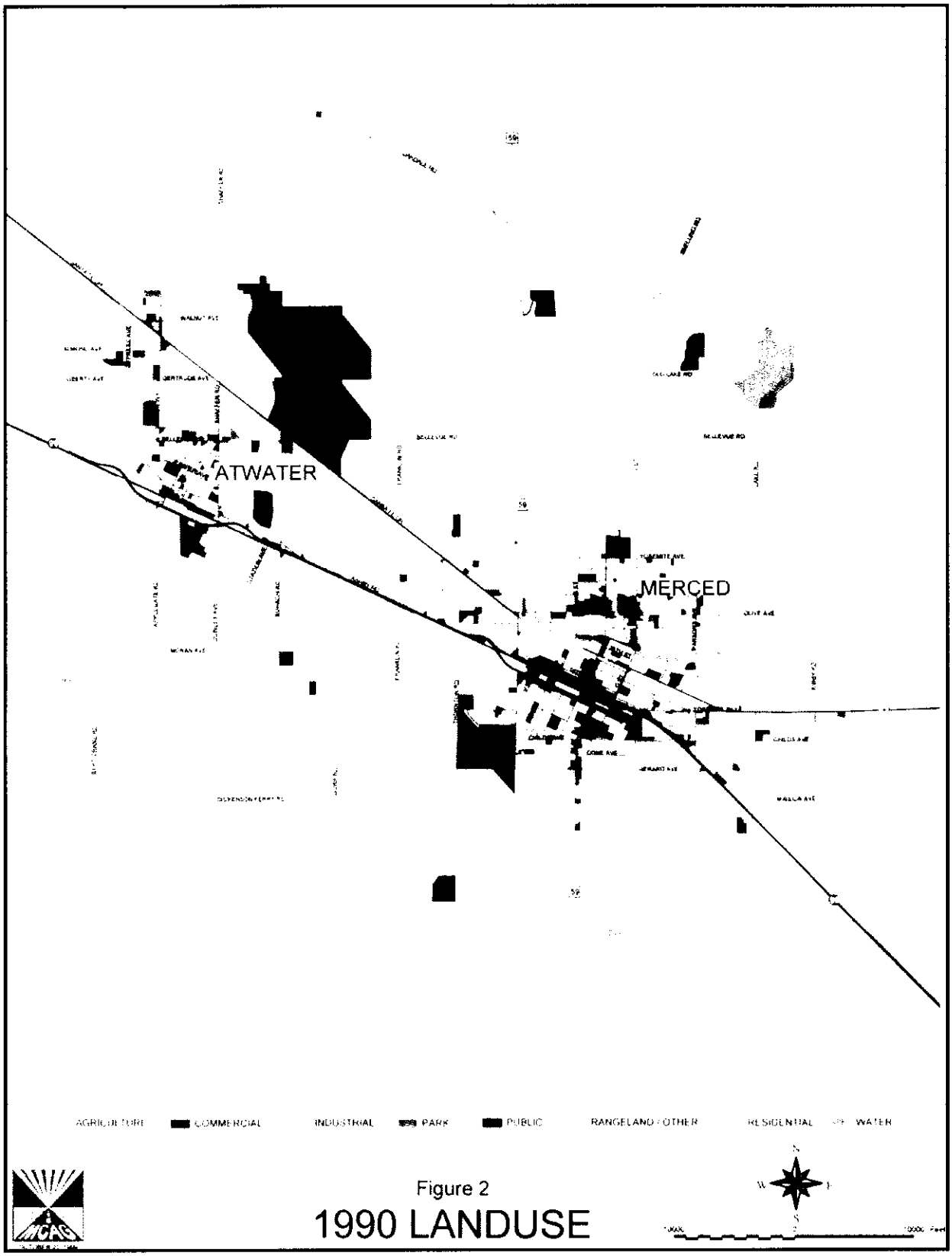
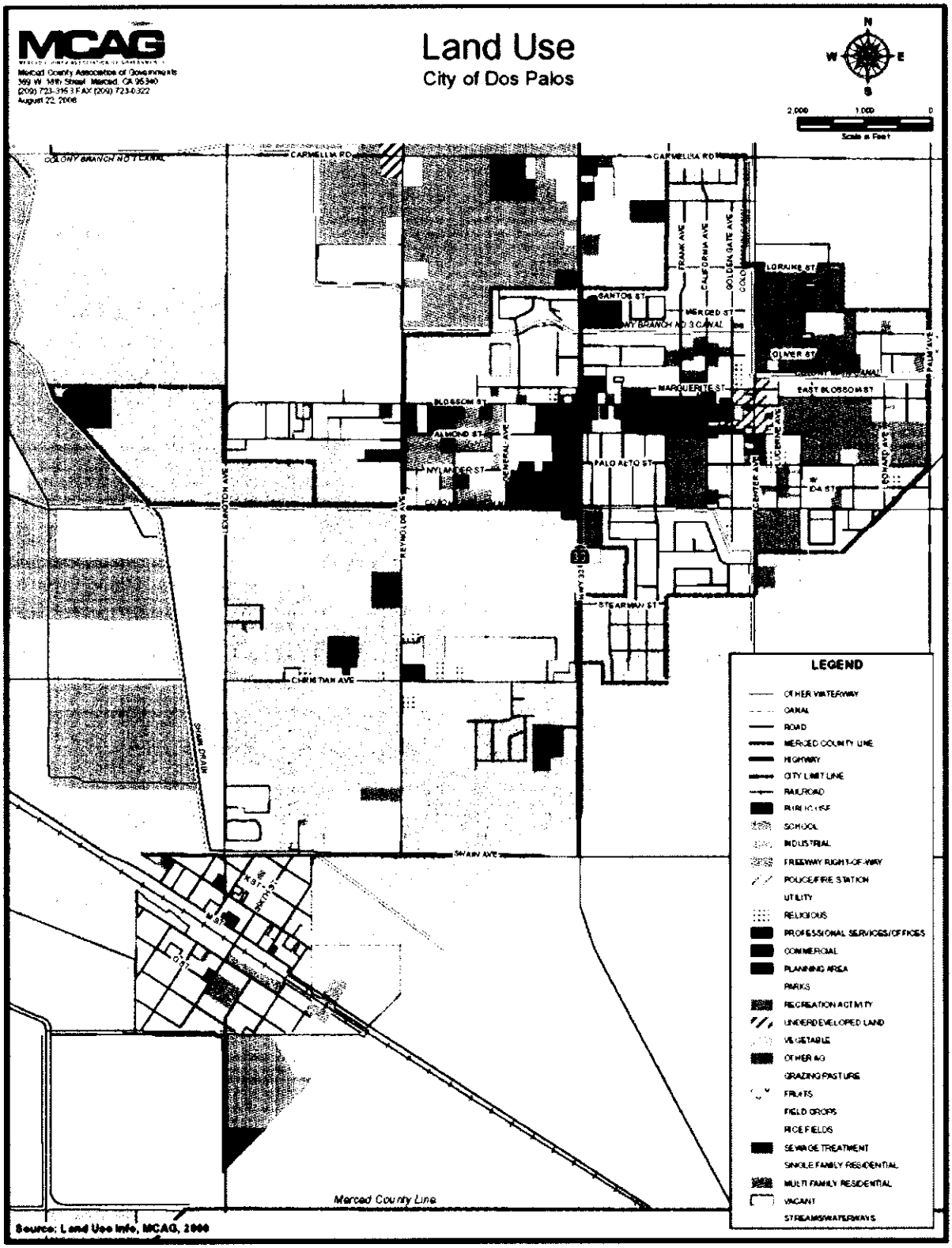


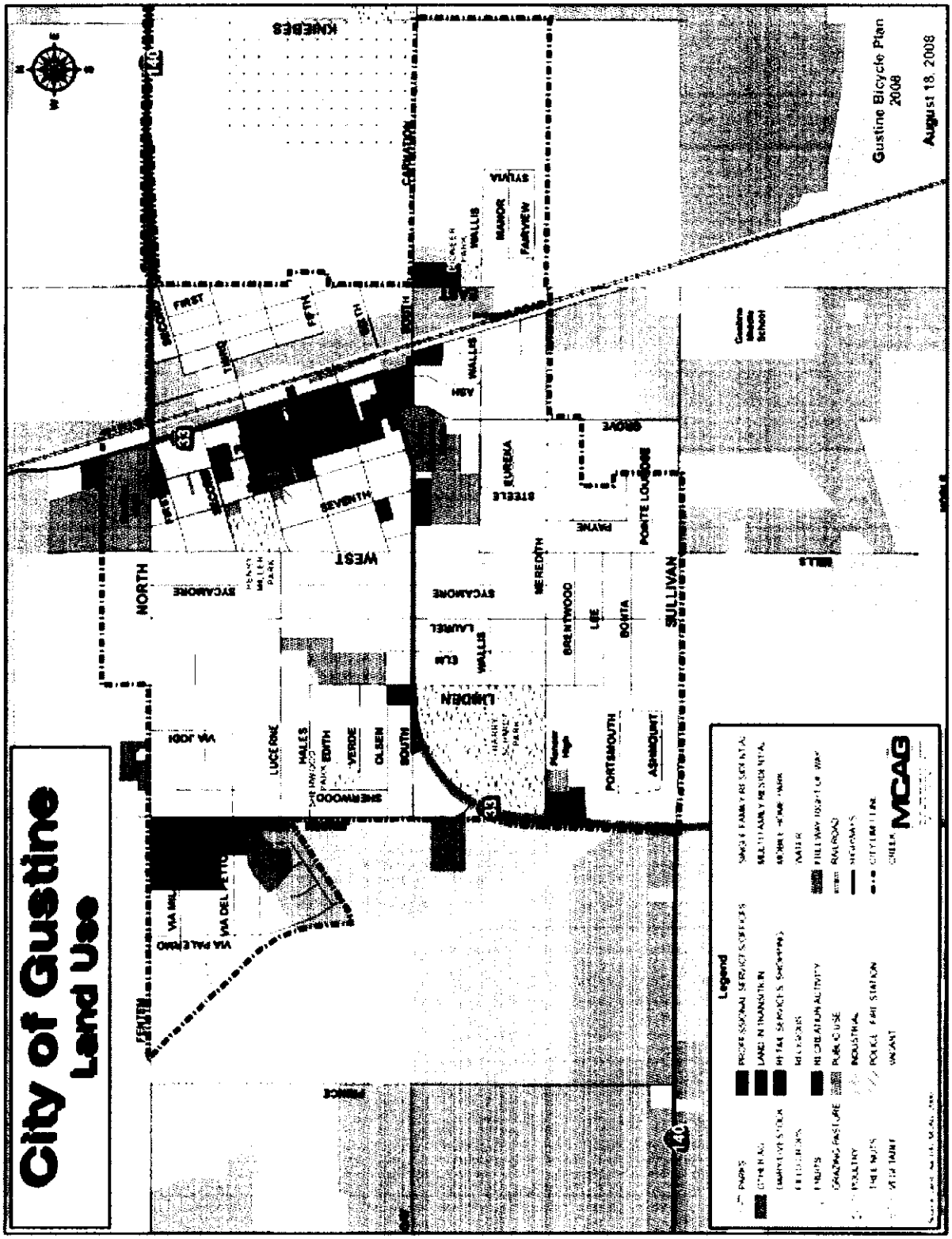
Figure 2

1990 LANDUSE

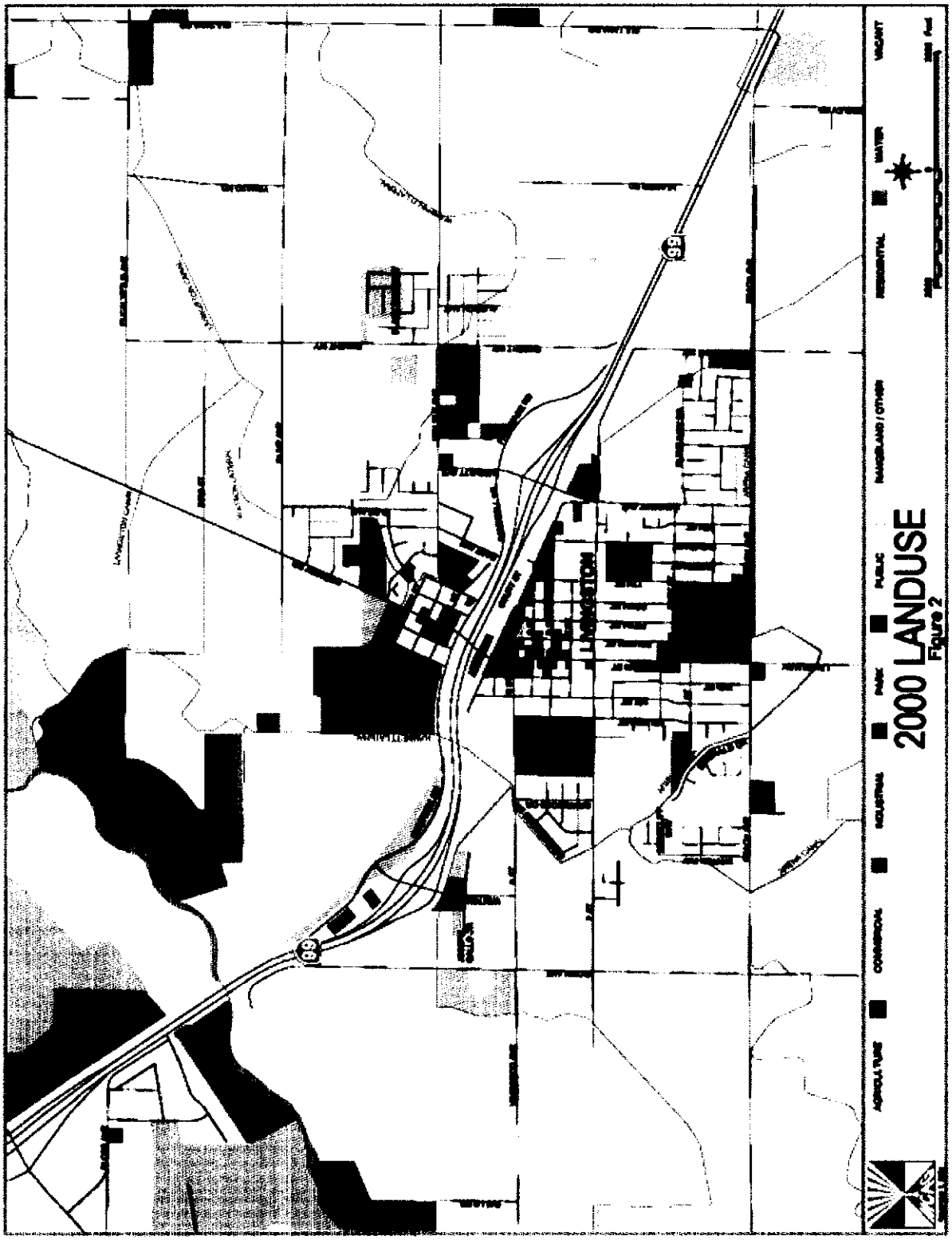
City of Dos Palos Land Use and Population map



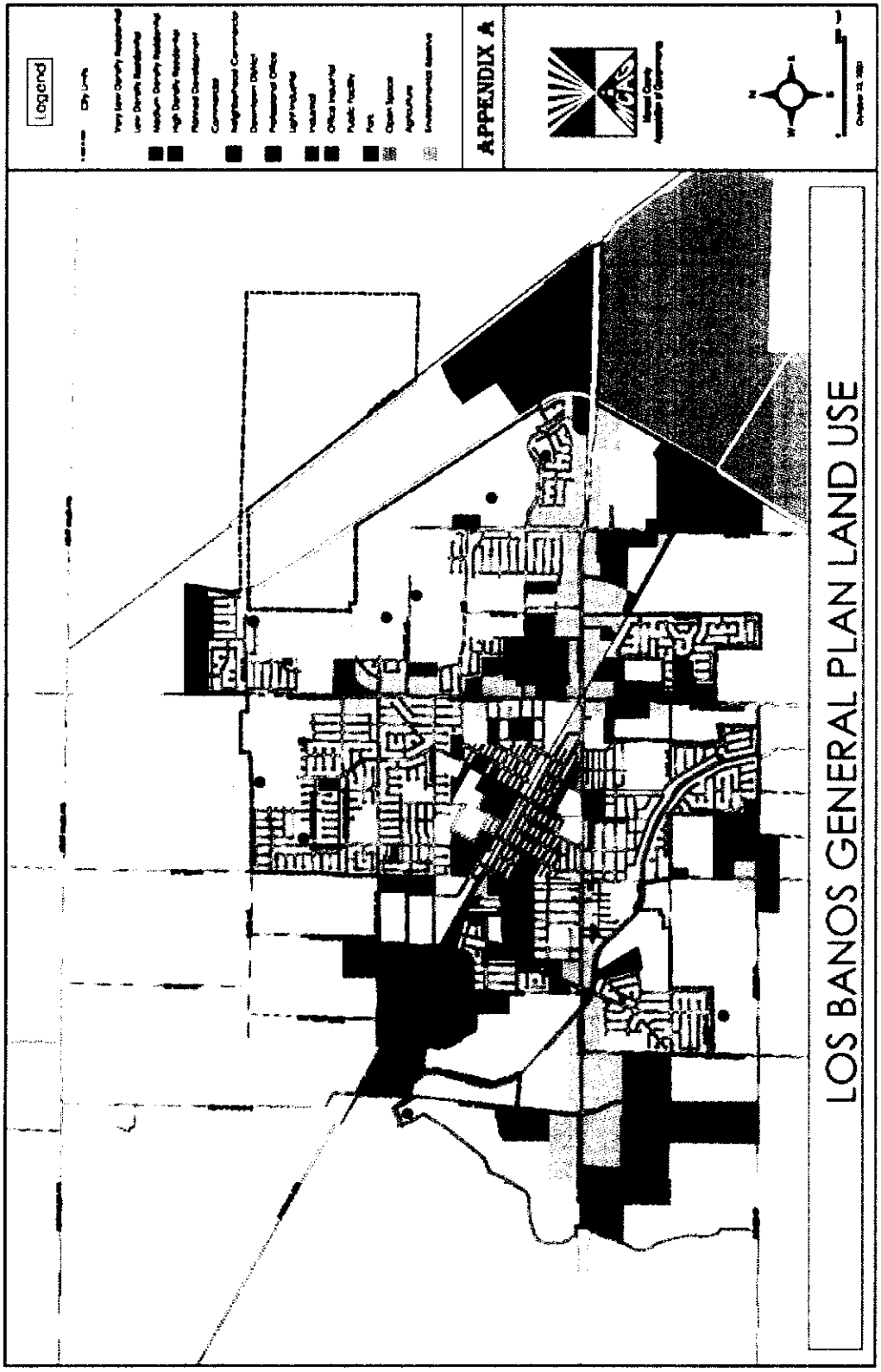
City of Gustine Land Use and Population map



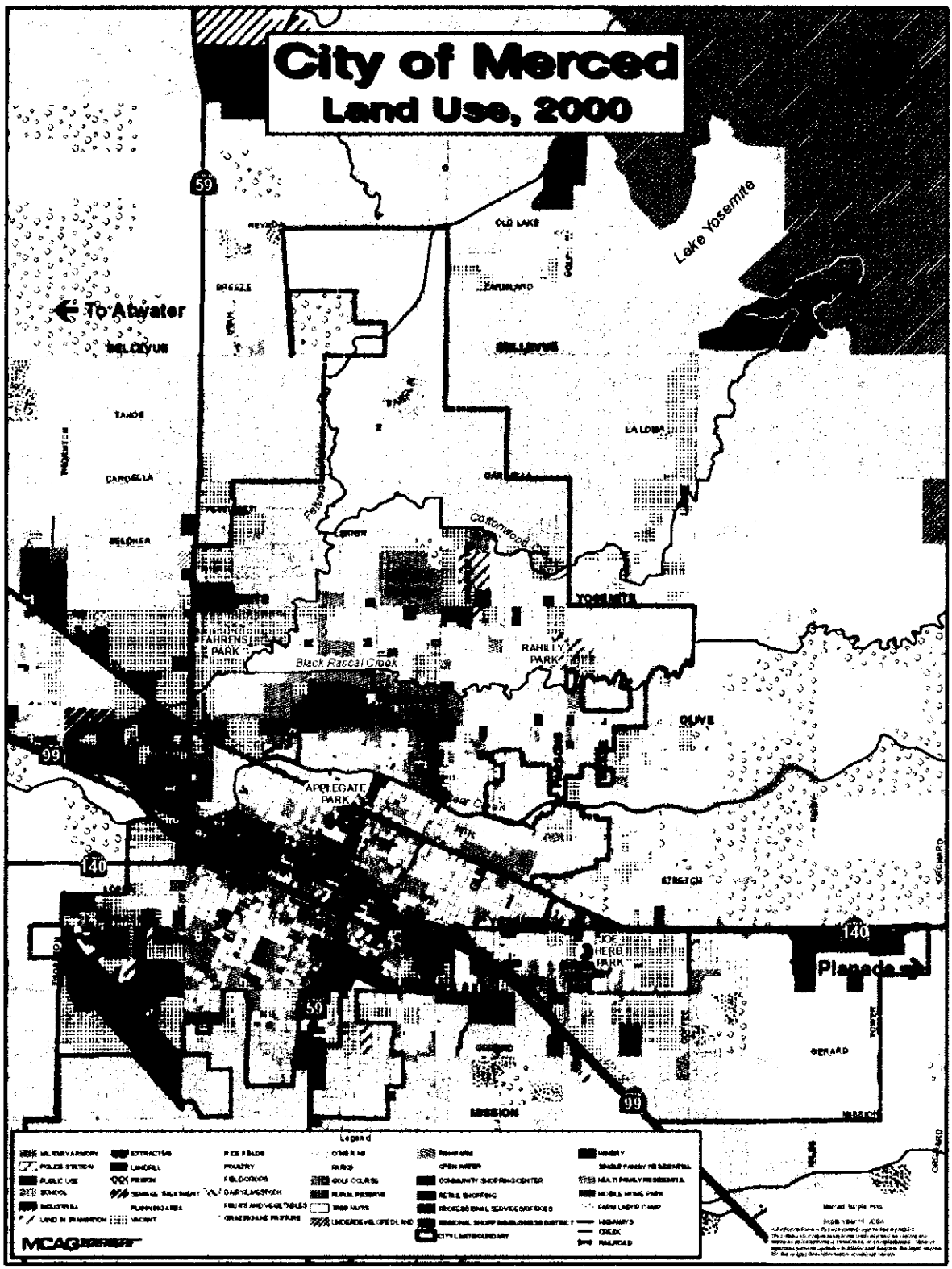
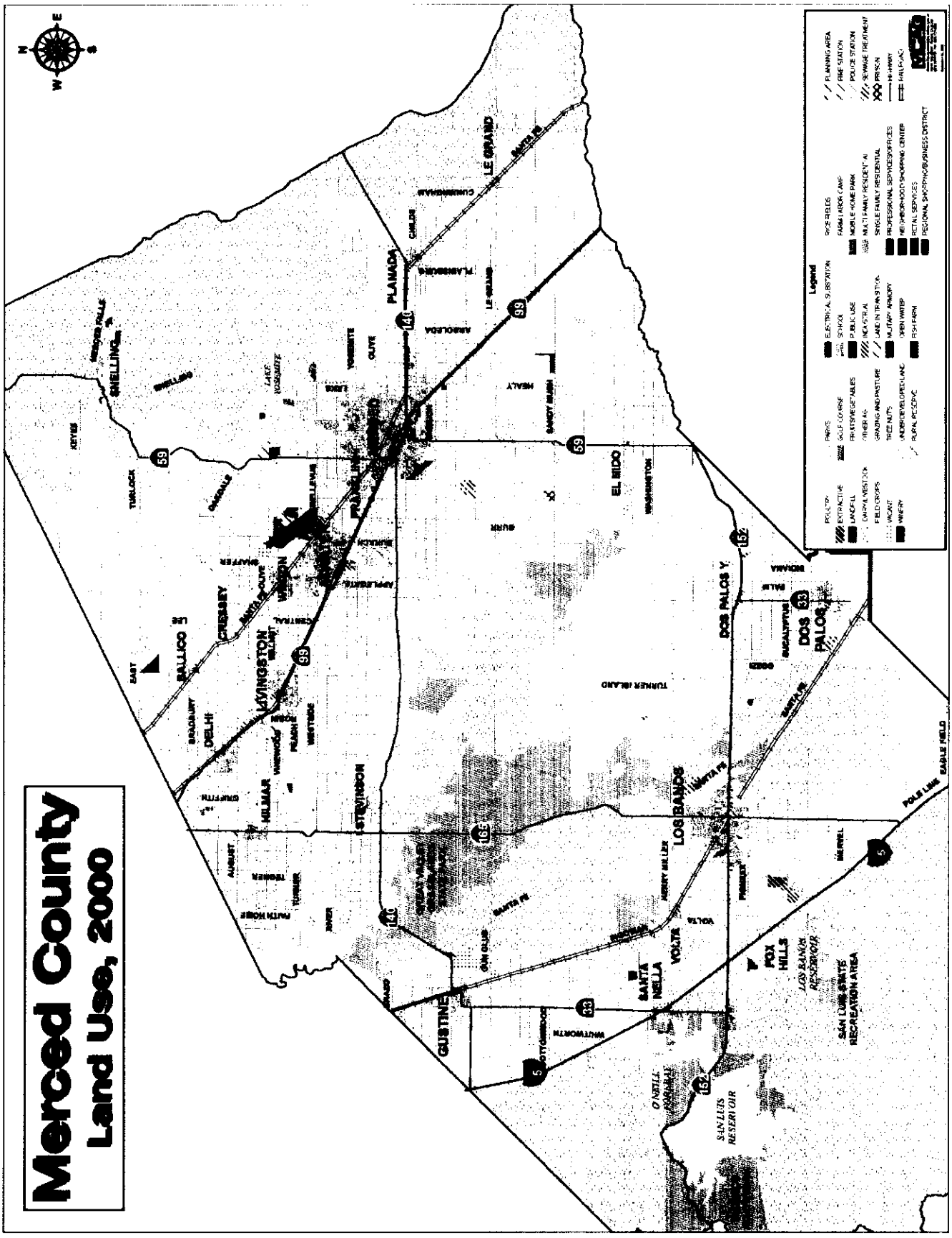
City of Livingston Land Use and Population map



City of Los Banos Land Use and Population map



City of Merced Land Use and Population map



Merced County Land Use and Population map