City of Tracy
Bikeways Master Plan

City of Tracy
Parks and Community Services

Creating Community in Tracy
by Connecting People to Places

April 2005

With assistance from RRM Design Group, San Luis Obispo, California

Acknowledgments

Dan Bilbrey, Mayor
Brent Ives, City Council
Irene Sundberg, City Council
Evelyn Tolbert, City Council
Suzanne Tucker, City Council

Parks and Community Services Commission

James Atkins
Gene Birk
Dave Hardesty
Richard Helzer
Tim Jayne
Mario Juarez
James Vaughn

Planning Commission

Gordon Lindquist - Chair
Ed Gable - Vice Chair
Clyde Bland - Commissioner
Mark Shishido - Commissioner
Rupi Gill - Commissioner

Prepared by:

City of Tracy Parks and Community Services Department

With assistance by:

rrmdesigngroup

San Luis Obispo, California

Tracy Bikeways Master Plan

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Introduction and Setting

The purpose of this Bikeways Master Plan Update is to build upon the City's 1992 Bikeways Master Plan planning efforts, obtain funding, and to establish a long range planning tool which will enable the City of Tracy to develop a unified network of bikeway routes which will serve both recreational and commuter needs. This plan will serve as a guide to allow the City to not only meet the needs of the residents of Tracy as they travel within the city limits, providing access to schools, parks, and employment centers, but also to provide options for connectivity to adjacent city and county routes.

Located in the heart of the California's fertile Central Valley, Tracy has a rich history as an agricultural and railroad community. Today, Tracy's appealing rural setting is quickly expanding to accommodate new residents who are attracted by the rural appeal and close proximity to the job markets of the Livermore Valley and the Bay Area. Tracy residents have access to 63 parks and 272 acres of developed park and open space areas within the City. The Sierra foothills, the Sacramento Delta, the commercial and cultural amenities of the Bay Area and the State Capitol are important destinations for Tracy's residents. In addition to this City parkland, Tracy's Class I recreational trail system adds another 13.76 acres to the citywide recreational system.

Tracy is well connected to other regional centers around the state by I-580, I-205, I-5, Altamont Commuter Express (ACE) rail service, Amtrak buses, and bus service provided by San Joaquin Regional Transit (SMART). Locally, the TRACER Fixed Route and Paratransit Public Transit Service serve Tracy residents and visitors.

This plan is needed because of the high and growing demand for cycling throughout the City, and the opportunity to build in bicycle facilities in newly developing sections of the City. Another need for the plan is the importance of establishing Tracy as a transportation junction to all modes of travel thereby improving its facilities for residents and visitors who wish to ride for commuter or recreational purposes. An added benefit of this plan is increased air quality and congestion mitigation through promoting bicycle travel as an alternative transportation mode. Having a planning document that identifies facility priorities will empower the City to create an attractive and usable bicycling infrastructure.

Bicycling offers enjoyment and quality of life for the residents of Tracy. Walking and bicycling are some of the most popular forms of recreational activity in the United States with 84% of Americans walking and 46% bicycling for pleasure. Tracy's 74,000 residents should follow this trend, meaning 62,000 residents walk and 34,000 bicycle at least occasionally.

Tracy's parks are an attractive destination for cyclists

Goals:

The Tracy Bikeways Master Plan presents a guideline for the City to provide an attractive environment needed to promote bicycling for transportation and recreation. The goals of this plan are imperative elements for Tracy's success as a bicycle-friendly city.

- Safety
- Access
- Quality of Life
- Implementation

Bicycle path along Schulte Rd.

Safety is the number one concern of Tracy citizens and visitors and is a primary reason to improve bicycling conditions. Concerns about safety are the single greatest reason people don't commute by bicycle, according to a 1991 Lou Harris Poll. Addressing those safety concerns for bicyclists through physical and program improvements is a major objective of the Master Plan.

Access for bicyclists to shopping, work, recreation, school, and other destinations can be enhanced if a consistent bicycle network is established and maintained in the City. The importance of developing a bicycle system that is attractive, inviting and accessible is a key element in preserving Tracy as a city where people want to live, work, and visit. The attractiveness of the bicycling environment not only invites bicyclists to explore Tracy, but more importantly, a beautiful environment helps to improve everyone's perception of the City of Tracy.

This Plan enables the City to take measurable steps toward the goal of improving the **Quality of Life** in Tracy by creating a more sustainable environment, through reducing traffic congestion, vehicle exhaust emissions, noise, and energy consumption. The ability of bicyclists to get around town and participate in recreational activities can help achieve this quality of life goal. Residents who choose to bicycle regularly will also enjoy improved health and physical well being.

Education, enforcement, engineering, planning and funding are the basic components of an effective **Implementation** Program for this Master Plan. Education must be targeted to the bicyclist as well as to the motorist regarding the rights and responsibilities of the bicyclist, pedestrian, and automobile driver. Comprehensive enforcement of existing traffic and parking laws, coupled with the implementation of sound design and engineering principles for bike corridors is also critical. This plan also proposes systematic review of all new development projects to assure compliance with planning documents, building codes and the principles of this Master Plan. Finally, this plan proposes a strategy for obtaining grants and competing for other funding sources in order to implement capital improvements identified with a high priority and competitive ranking.

Expected Benefits of the Bikeways Master Plan

- **Provide for facilities and services.** Meet the demand and increased use of bicycles as a means of travel around the city.
- **Improve the quality of life in Tracy.** Design and build people-friendly bikeways, bicycle facilities, pedestrian paths that connect residents to activity centers thereby supporting sustainable community development. Encourage healthier and more active forms of travel. Encourage visitors to stop and enjoy Tracy on bicycle and on foot. This will, in turn, support the numerous businesses in Tracy.
- **Improve air quality and reduce congestion.** Reduce traffic congestion, vehicle exhaust emissions, noise, energy consumption, and support clean air quality and mitigation.
- **Maximize funding sources for implementation.** Provide the framework and options for Tracy to successfully compete for state and federal funding, by meeting the requirements of the California Bicycle Transportation Act and the Transportation Equity Act for the 21st Century (TEA-21), as shown in Section 2.5).
- **Increase safety, save lives and reduce injuries.** Reduce the accident and fatality rate for bicyclists through design standards and guidelines, education, and enforcement.
- **Provide a source document for new bikeways.** Develop and grow the bikeways system by including direction and policy, maps and requirements, for both the City and private developers.

Key Strategies of the Bikeways Master Plan

The plan identifies four short to mid term project objectives (years 2005-2012) and three mid to long- term project objectives (years 2012-2020), although the actual schedule is highly dependent on available funding. The top short-mid term projects are:

1. Gap Closure projects in existing bikeway system.
2. Pursue development of Multi-Use Trails Plan on or adjacent to existing Railroad Corridors where feasible.
3. Pursue development of a Bikeway Class 1 Bike Path on the existing irrigation system easement owned by the Westside Irrigation District within the City Limits.
4. Ensure that new development includes bicycle facilities within each project area to enhance, and promote the use of bicycles, while interconnecting to other bikeways.

Mid- to long-term projects include:

1. Provide a network Class I bike routes throughout the city on major arterial streets and as right-of-way becomes available.
2. Continued improvement of citywide bikeway system through developer dedication or development impact fees.
3. Development of a City-wide Class I loop trail that will interconnect the planned bikeways network.

1.0 Objectives

Objectives provide more specific descriptions of the goals and strategies and provide a bridge between the plan and actual implementation guidelines, which are provided in following chapters.

The following objectives are intended to guide bicycle planning, design, and implementation.

Objective 1.0 Plan, design, implement, and maintain bicycle infrastructure in Tracy.

1.1 Develop and maintain a Bikeways Master Plan which identifies existing and future needs, forces and provides specific recommendations for facilities and programs.

1.2 Update the Bikeways Master Plan approximately every five years or as needed to necessitate amendments to remain consistent with internal and external elements.

1.3 Ensure that the Bikeways Master Plan is consistent with relevant and current city, regional, state, and federal policies, and ensure consistency between the Bikeways Master Plan, General Plan elements, Caltrans/General Plan standards, and other planning documents.

1.4 Encourage development concepts (such as mixed use projects) that have as a goal the reduction of the dependency on the automobile for short commute, shopping, and recreational trips.

Objective 2.0 Improve air quality and reduce congestion.

2.1 Encourage bicycling as a clean, healthy, and active form of travel.

2.2 Work with the San Joaquin Valley Air Pollution Control District (SJVAPCD) and Commute Solutions to promote bicycling as a viable alternative to driving.

Objective 3.0 Encourage public participation in planning and implementation of the Bikeway system through coordination with City staff.

3.1 Parks and Community Services Department will (a) serve as a liaison to local bicyclists, the media, and the community in general, (b) review and/or complete funding applications, (c) provide inter-departmental coordination, and (d) participate in planning efforts.

3.2 Build relationships with businesses, local clubs and organizations.

Objective 4.0 Build upon the existing bikeway system, programs and resources in Tracy.

4.1 Identify existing and proposed bike paths, lanes, and routes and develop a citywide system to maximize use to the extent feasible.

4.2 Encourage the use of existing natural and manmade opportunities such as creeks, flood channels, utility corridors, and active or abandoned railroad right-of-ways for future bike path alignments.

4.3 Identify existing bicycle education programs and target future expansion, as need warrants.

Objective 5.0 Develop a citywide bicycle system that meets the needs of commuter and recreational users, helps reduce automobile trips, links residential neighborhoods with local and regional destinations, and accounts for new development.

5.1 Develop a bikeways system that provides direct routes for commuting cyclists between residential neighborhoods, shopping and regional employment centers, transit/rail stations, and schools.

5.2 Develop a bikeways system for recreational cyclists that uses lower traffic volume streets, off-street bike paths, and serves regional historic and natural destinations wherever possible.

5.3 Develop a citywide system that is accessible from most residential neighborhoods in Tracy, and provides opportunities for local connections to the citywide system.

5.4 Develop a bicycle network that balances the need for directness with concerns for safety and user convenience. Where feasible, develop a dual system that serves both the commuter and recreational bicyclist, and separates bicyclists, pedestrians, and other recreational users.

5.5 Create connections between bikeways, pedestrian paths and other transportation modes.

Objective 6.0 Maximize multi-modal connections to the bicycle system.

6.1 Ensure that the citywide system (including bicycle parking) is integrated into existing and future transit stops/stations and services in Tracy.

6.2 Encourage San Joaquin Regional Transit District to install bike lockers and bike parking racks where needed.

6.3 Install/maintain bike racks on TRACER Public Transit buses.

6.4 Encourage bike rental opportunities downtown and at other locations where visitors are entering Tracy.

Objective 7.0 Promote safety and bicycle education.

7.1 Monitor bicycle-related accident levels regularly, and target a significant reduction on a per capita basis over the next twenty (20) years.

7.2 Work with the School Districts to incorporate bicycle education and safety programs into their curriculum.

7.3 Develop a system for identifying, evaluating, reporting and responding to maintenance and safety problems on the existing bikeway system.

7.4 Coordinate with the Tracy Police Department to determine strategies of community education and enforcement on bicycle related laws and safe and proper bicycle use.

Objective 8.0 Develop detailed and ranked facility improvements in the Bikeways Master Plan.

8.1 Identify the top bicycle improvements to be completed in the short term. Criteria should include number of activity centers served, closure of critical gaps, potential safety hazards, existing bicycle use, and input from the public and staff.

8.2 Develop detailed implementation information on each recommended segment, including length, classification, adjacent traffic volumes and speeds, environmental impact, activity centers served, cost, and overall feasibility.

8.3 Complete concept design and feasibility work on selected bicycle facilities in order to determine accurate costs and other implementation information.

8.4 Identify and obtain design and construction funding for recommended bikeway improvements.

Objective 9.0 Develop a coordinated strategy to develop support facilities and programs in Tracy.

9.1 Develop a bikeway map for public distribution.

9.2 Support annual bicycle, running, and hiking events such as Bike to Work Day and adult safety courses in conjunction with regional efforts.

9.3 Promote use of bicycles as a safe, convenient and alternative mode of transportation.

9.4 Continue to implement Tracy's bicycle parking standards as identified in Tracy Municipal Code (TMC), to ensure adequate and appropriately located bicycle parking facilities are available to meet demand city-wide.

9.5 Develop a unique and distinctive logo for the Tracy Bikeway System in accordance with Manual of Uniform Traffic Control Devices (MUTCD) to be located on the citywide system along with appropriate directional and warning signs.

Objective 10.0 Maximize the amount of state and federal funding for non-motorized improvements that can be received by Tracy.

10.1 Identify current regional, state, and federal funding programs, along with specific funding requirements and deadlines.

10.2 Encourage multi-jurisdictional funding applications.

10.3 Use prioritized list of improvements along with probable cost estimates, to identify appropriate funding sources for each proposal.

10.4 Include bikeway improvements in the City's Capital Improvement Plans.

10.5 Investigate local funding sources to maximize local matching funds, i.e. impact fees, bonds, sales tax, etc.

10.6 Encourage private and corporate donations and grants that may be used to support non-motorized facilities and programs.

Objective 11.0 Mitigate and anticipate the impacts of future developments along existing and proposed bicycle improvements.

11.1 Examine adopted land use plans to determine areas of potential growth and development in the City. Provide input for development projects and examine possible impacts along existing and proposed bicycle corridors. All specific plans shall include a plan for bikeways. Require dedicated land and development of the bikeway system when feasible.

11.2 Permit the use of Travel Demand Management (TDM), or other approved programs, for employment sites of more than 20 employees to mitigate traffic impacts. Voluntary TDM programs for all employers should be encouraged.

Objective 12.0 Provide guidance for new development.

12.1 Prior to project approval and through the project review process, city staff in appropriate departments should provide oversight and guidance to ensure new development projects satisfy the goals and objectives of this plan.

12.2 All new residential development should have direct pedestrian and bicycle connections both within the new neighborhood and to the citywide system including access to surrounding parks, schools, shopping centers and regional employment centers if applicable.

12.3 Insure that new developments either construct or pay their fair share cost of construction of bikeways as required by the Bikeways Master Plan outside the development area. New developments shall be responsible to construct all onsite bikeways within the development area.

12.4 New development projects including commercial, office, multi-family residential, educational, recreational and transit park-and-ride land uses shall provide bicycle parking and/or storage facilities.

12.5 New development projects should provide linkages to the city and regional bikeways system (existing and proposed) where applicable.

2.0 Background and Existing Conditions

2.1 Relationship Between This Plan and Other Planning Efforts in Tracy

The Bikeways Master Plan has the comprehensive scope and jurisdictional authority required to coordinate and guide the provision of all bicycle related plans, programs, and projects in the City of Tracy. While many current planning efforts such as the City of Tracy General Plan, the Parks and Recreation Master Plan, the San Joaquin County Regional Transportation plan and Regional Bicycle Master Plan provide recommendations regarding one element or aspect of the bicycle networks, the task of the Tracy Bikeways Master Plan is to ensure compatibility of all of these blueprints, while planning for areas of the City not already targeted or addressed by other studies. The studies or planning efforts listed below have been reviewed and consulted, studied for consistency, and where appropriate, integrated into Tracy's Bikeways Master Plan:

Tracy Proposed General Plan (2005)

The Tracy General Plan is a policy document that will dictate directly how Tracy will evolve in the years to come. The *Circulation Element* of the General Plan emphasizes the City's intent to guide an integration of road infrastructure and alternative transportation in and around Tracy. It also aims to diversify transportation options contains a section on bicycle transportation. The *Land Use Element* primarily focuses on protecting and maintaining Tracy's residential neighborhoods and 'small town' character. The *Community Character Element* provides guidance for development within the city, including bicycle accommodation. Finally, the *Open Space Element* covers recreational trails and additional development guidelines. This update to the Bikeways Master Plan is consistent with and supports the proposed General Plan goals and policies. This Bikeways Master Plan will be further updated for consistency with the Roadway Master Plan, which will be completed after the City adopts General Plan amendment.

Tracy Parks Master Plan (2002)

This plan supports the vision of the *Parks Master Plan*, to expand recreation paths and trails to create linkages between recreation facilities throughout the community. This plan is consistent with the Tracy Parks Master Plan.

Tracy Tomorrow Report

In May of 2000, the City of Tracy started a yearlong public participation project, Tracy Tomorrow (TT2000), which resulted in 277 recommendations from five citizen task forces to the City and other local agencies. Out of that project, Tracy Tomorrow & Beyond (TT&B) was formed as another way to continue keeping the citizens of Tracy and the surrounding community involved and informed. This plan is consistent with the direction provided in the Tracy Tomorrow effort.

San Joaquin County Regional Bicycle Master Plan (1994)

This plan was prepared by the San Joaquin Council of Governments and aided by a specially assembled Bicycle Task Force. The plan focuses primarily on regional bicycle routes between areas within San Joaquin County. The Bikeways Master Plan supports the Regional Bicycle Master plan through the recommendations in this document.

Unincorporated San Joaquin County Bikeway Plan (2002)

The Unincorporated San Joaquin County Bikeway Plan provides the blueprint for developing a bikeway system that includes both on and off street facilities as well as support facilities and programs throughout the unincorporated County. This plan gives a more recent look at San Joaquin County's bicycle provisions and makes recommendations for upgrades to existing unincorporated roadways. This plan recommends that Corral Hollow Road, Valpico Road, Byron Road, and Schulte Road be upgraded to Class III bikeways. The recommendations proposed in this Tracy Bikeways Master Plan support those of the county and will help form a seamless bikeway network when complete.

Tracy Hills Specific Plan (1998)

The Tracy Hills Specific Plan calls for a comprehensive circulation system that includes streets, bikeways, and walks designed to provide and encourage safe and efficient travel within the Plan Area. The Specific Plan was designed to work within the framework established by the General Plan/Urban Management Plan (UMP). The Plan identifies that a "Master pedestrian/bike circulation plan identifying circulation patterns, street crossings, access between villages, and walkways shall be prepared with each tentative map." While the Tracy Hills project area has been annexed to the City, development has not occurred in Tracy Hills. This Bikeways Master Plan would be used as the policy guidelines for that development.

South Schulte Specific Plan (1997)

The South Schulte Specific Plan contains goals to establish a comprehensive circulation system that promotes pedestrian and bicycle use in the plan area. It lays out a network of pedestrian and bicycle networks, which consists primarily of off street paths (some following utility easements) that connect planned community facilities. This Bikeways Master Plan would be used as the policy guidelines for that development.

Tracy Gateway Project

Tracy Gateway will be a campus-style business park that provides for a well-planned work environment. The multi-story office buildings will overlook many serene views – lakes, an executive golf course, landscaping, and surrounding hills. Tracy Gateway offers more than five miles of bike lanes and walkways, in addition to a trail and fitness course that surrounds the golf course.

San Joaquin County Air Quality White Paper (2002)

This Bikeways Master Plan supports the clean air policies set forth in the San Joaquin County Air Quality White Paper (2002) by the San Joaquin Valley Air Pollution Control District and the San Joaquin Council of Governments.

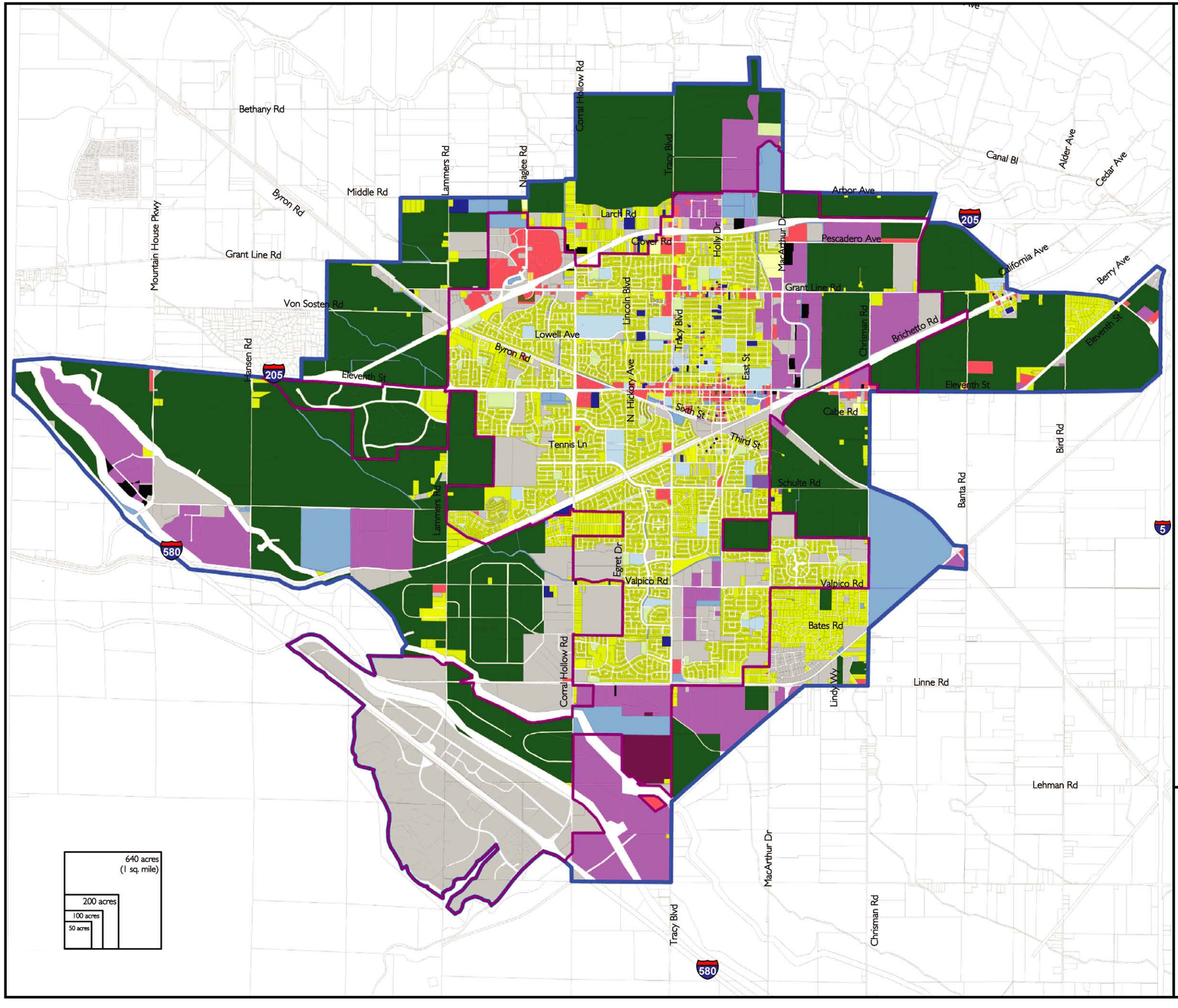
Reasonably Available Control Measures (RACM)

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the regional air quality planning agency in the San Joaquin Valley. The SJVAPCD has developed an Extreme Ozone Attainment Demonstration Plan, which is required to include Reasonably Available Control Measures (RACM).

The SJVAPCD requested that SJCOG and local agencies submit a resolution confirming the RACM that could be implemented. On July 6, 2004, the City of Tracy approved Resolution (2004-210) to implement certain local government control measures in the Extreme Ozone Attainment Demonstration Plan for the San Joaquin Valley. This Bikeways Master Plan meets all bicycling related RACM recommended by SJVAPCD.

Tracy Roadway Master Plan (1994)

Tracy's existing Roadway Master Plan was adopted in 1994. Some of the recommendations listed in this Bikeways Master Plan are inconsistent with the Roadway Master Plan. Future updates of the Roadway Master Plan and the Bikeways Master Plan shall complement each other. Since both documents will depend on each other, they should be located together to reduce confusion and for clarity of roadway right-of-way requirements



- Residential - Single Dwelling Unit
- Residential - Two or More Dwelling Units
- Residential - Mobile Home Park
- Motel or Hotel
- Commercial
- Industrial
- Mixed Use
- Medical
- Public Facilities
- Park
- Vacant Building
- Vacant Land
- Agriculture
- School
- Airport
- Church
- Cemetery

- City Limits
- Sphere of Influence

.5 1mi 2mi

N

FIGURE 1: Land Use

Bikeways Master Plan

CITY OF TRACY

RRM DESIGN GROUP

Original map prepared by
Design Community & Environment, 2003.

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UR 1
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UR 9
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640 acres (1 sq. mile)
200 acres
100 acres
50 acres

Residential Very Low
Residential Low
Residential Medium
Residential High
Commercial
Office
Industrial
Village Center
Urban Center
Public Facilities
Park
Golf Course
Open Space
Agriculture
Aggregate
Urban Reserve

City Limit
Proposed Sphere of Influence

.5 1mi 2mi

N

Land Use Designation Map Not Yet Approved (DRAFT)

FIGURE 2: Land Use Designation Map

Bikeways Master Plan

CITY OF TRACY

RRM DESIGN GROUP

Original map (DRAFT) prepared by
Design Community & Environment, August, 2004

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2.2 Definition of Bikeways

Bikeways are described by Caltrans in Chapter 1000 of the Highway Design Manual as being one of three basic types (see Figure 3).

Class I Bikeway A bike path or multi-use trail that provides for bicycle travel on a paved right of way completely separated from any street or highway.

Class II Bikeway Referred to as a bike lane. Provides a striped and stenciled lane for one-way travel on a street or highway.

Class III Bikeway Referred to as a bike route. Provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing and stenciling.

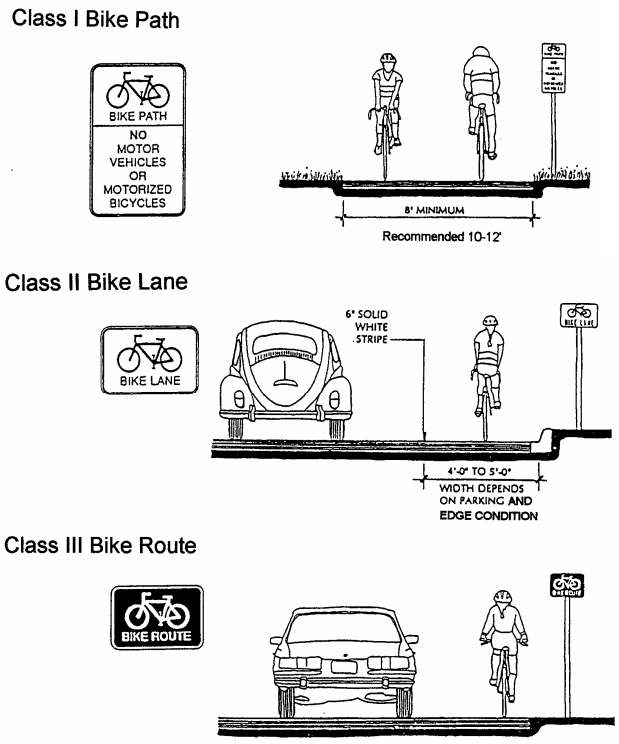

Figure 3: Class I, II, and III Bikeways

2.3 Existing Bicycle Facilities

The existing Tracy bikeway system is displayed in the current Bikeways Map (Figure 4.) The current system includes a network of bicycle facilities that begin to the meet the needs of cyclists in Tracy. The proposed future bikeways map (Figure 9), and a map showing new segments (Figure 10) addresses bikeway system inconsistencies and gaps. The proposed Bike Map also contains opportunities related to new development.

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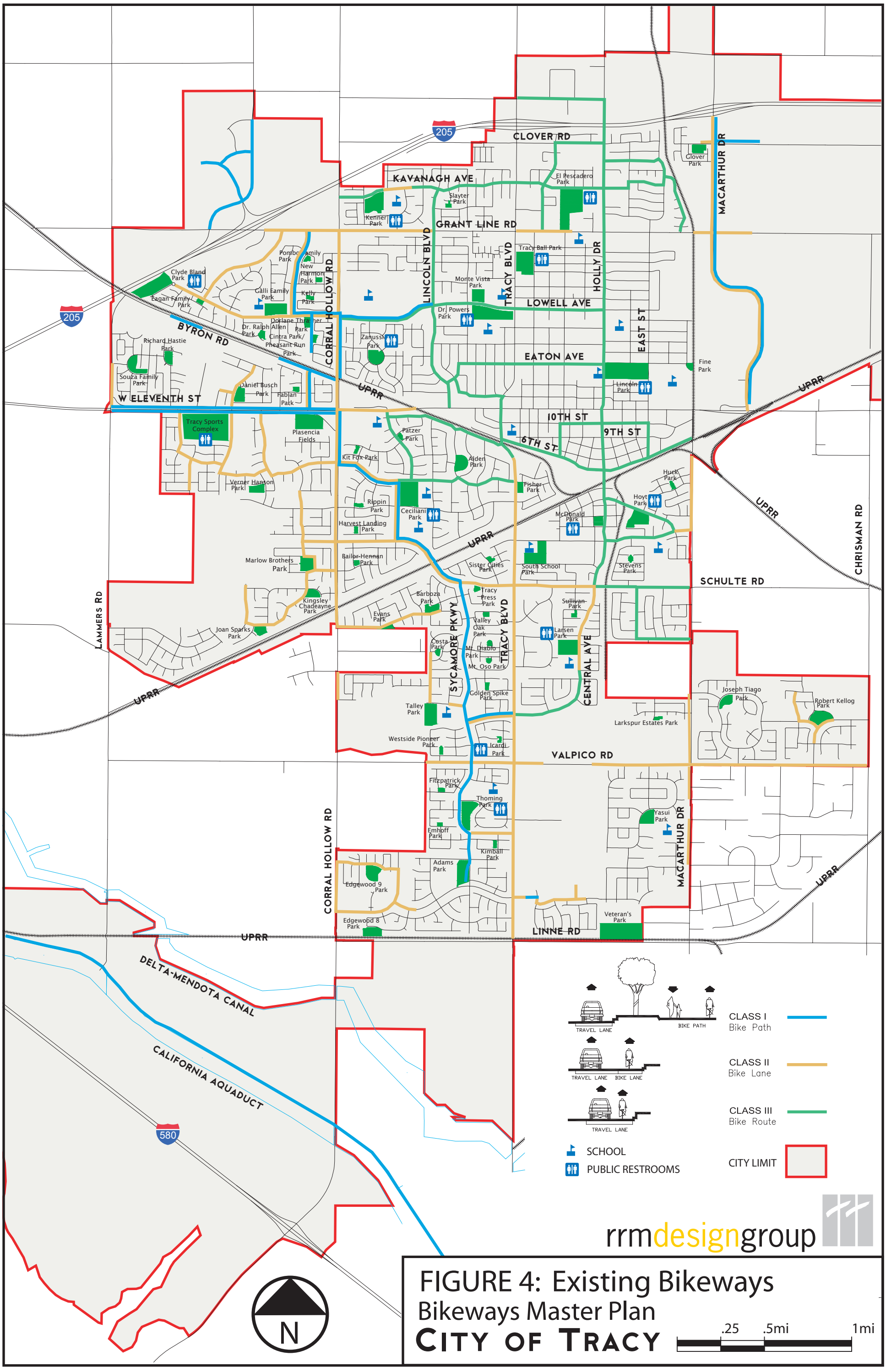
CLOVER RD
KAVANAGH AVE
GRANT LINE RD
LOWELL AVE
EATON AVE
10TH ST
9TH ST
6TH ST
W ELEVENTH ST
VALPICO RD
SCHULTE RD
LINNE RD
MACARTHUR DR
CHRISMAN RD
LAMMERS RD
CORRAL HOLLOW RD
LINCOLN BLVD
TRACY BLVD
HOLLY DR
EAST ST
SYCAMORE PKWY
CENTRAL AVE
BYRON RD
UPRR
DELTA-MENDOTA CANAL
CALIFORNIA AQUADUCT
205
580
Clyde Bland Park
Eagan Family Park
Richard Hastie Park
Souza Family Park
Tracy Sports Complex
Plasencia Fields
Verner Hanson Park
Marlow Brothers Park
Joan Sparks Park
Kingsley Chadeayne Park
Pombo Family Park
New Harmony Park
Calli Family Park
Kelly Park
Dorlane Thrasher Park
Dr. Ralph Allen Park
Cintra Park/ Pheasant Run Park
Daniel Busch Park
Fabian Park
Kenner Park
Slayter Park
El Pescadero Park
Glover Park
Tracy Ball Park
Monte Vista Park
Dr. Powers Park
Zanussi Park
Lincoln Park
Fine Park
Patzer Park
Kit Fox Park
Alden Park
Fisher Park
Huck Park
Hoyt Park
McDonald Park
Rippin Park
Ceciliani Park
Harvest Landing Park
Bailor-Hennan Park
Sister Cities Park
South School Park
Stevens Park
Barboza Park
Evans Park
Tracy Press Park
Valley Oak Park
Costa Park
Mt. Diablo Park
Mt. Oso Park
Sullivan Park
Larsen Park
Golden Spike Park
Talley Park
Westside Pioneer Park
Icardi Park
Larkspur Estates Park
Joseph Tiago Park
Robert Kellog Park
Fitzpatrick Park
Thoming Park
Emhoff Park
Kimball Park
Adams Park
Edgewood 9 Park
Edgewood 8 Park
Yasui Park
Veteran's Park
TRAVEL LANE
BIKE PATH
TRAVEL LANE
BIKE LANE
TRAVEL LANE
CLASS I
Bike Path
CLASS II
Bike Lane
CLASS III
Bike Route
SCHOOL
PUBLIC RESTROOMS
CITY LIMIT
N
rrmdesigngroup
FIGURE 4: Existing Bikeways
Bikeways Master Plan
CITY OF TRACY
.25
.5mi
1mi

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2.4 Safety

Safety is an essential element of a comprehensive plan to support and encourage bicycling. Nationally about 800 bicyclists die annually on roadways, nearly all of these deaths resulted from a collision with a motor vehicle[1]. The Tracy Police Department has recorded bicycle accident statistics since 1998. From collected data, Tracy has averaged about 20 bicycle collisions annually. Data from 2004, however, has shown an increase over years past. For detailed accident figures, see Tables 1 and 2. Table 2 details corridors with multiple conflicts; the data contained in this table is addressed in section 3. For a map detailing Tracy bicycle accident locations from 1998-2004, see Figure 5.

Table 1: Historic Accident Data

	injury	fatality	other	total
1998	12	0	8	20
1999	5	0	7	11
2000	17	1	10	28
2001	14	0	5	19
2002	10	1	9	20
2003	13	0	8	21
2004*	31	0	4	36
Total	102	2	51	155

*Data through September 2004.

Table 2: Historic Accident Data by Location

Bicycle collisions (1998-2004)	
Tracy Blvd	36
11th St.	33
Central/Holly	22
Grant Line Road	16
Corral Hollow Road	13

Out of 122 recorded accidents since 2000, there exists an even split between drivers, adult cyclists and juvenile cyclists being at fault (2/3rds of accidents therefore cite the cyclist as being at fault). Of collisions caused by cyclists, 40% of accidents were attributed to the cyclist riding on the sidewalk or on the street against traffic. Bicyclists at fault are split equally between juveniles and adults. Planning into the future, the city should work to minimize conflicts between vehicles and bicycles by the following three methods:

[1] "Traffic Safety Facts 2002," *National Highway Traffic Safety Administration (DOT HS 809 613)*, 2002.

a) Street Design and Operation

The configuration of a street can greatly affect the safety of a bicyclist. Features such as bike lanes, signage, and traffic calming elements can provide physical separation as well as an increased awareness among automobile drivers. Street improvements are discussed in section 3.

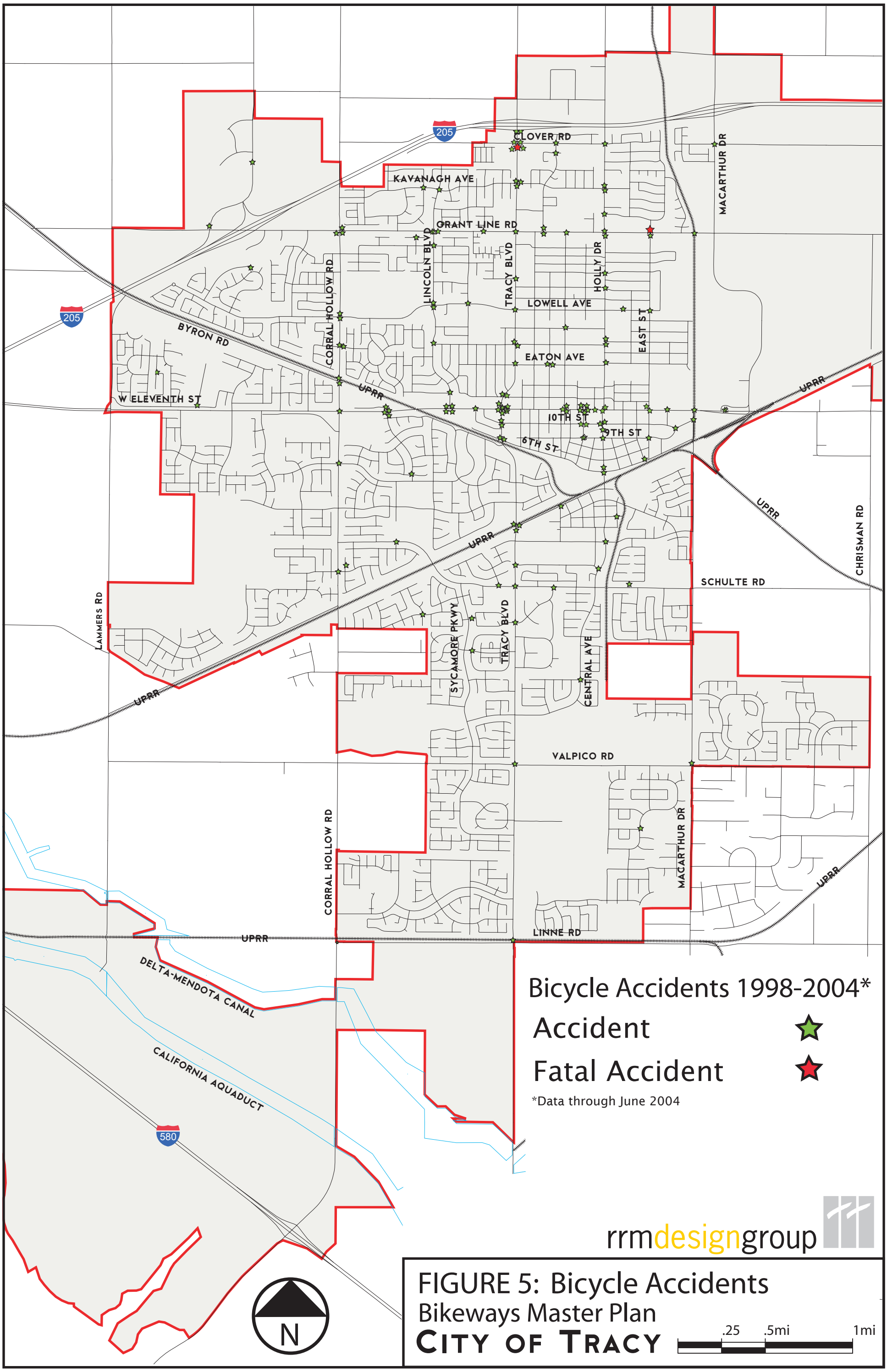
b) Traffic Law Enforcement

Traffic enforcement can provide a safer environment for both cyclists and drivers. The Police Department should be encouraged to stop drivers and cyclists they observe who break the law. Traffic speeds and red light enforcement are both large hazards to cyclists and pedestrians. Similarly, wrong way cyclists and sidewalk riding are unexpected hazards for motorists.

c) Safety Training

Making sure that cyclists are familiar with and observe the rules of the road will make the streets safer for all Tracy residents. Nationally, 30% of all bicycle related fatalities are under the age of 20. 23% are under 15 years of age.[2] Teaching children when they are young proper bicycle safety skills will significantly reduce the incidence of collisions in which the cyclist is at fault. Adults also need safety education as bad riding habits can become ingrained and difficult to correct.

[2] "Traffic Safety Facts 2002," *National Highway Traffic Safety Administration (DOT HS 809 613)*, 2002.


205
CLOVER RD
KAVANAGH AVE
GRANT LINE RD
MACARTHUR DR
LINCOLN BLVD
TRACY BLVD
HOLLY DR
CORRAL HOLLOW RD
LOWELL AVE
EAST ST
BYRON RD
EATON AVE
UPRR
W ELEVENTH ST
10TH ST
9TH ST
6TH ST
CHRISMAN RD
SCHULTE RD
LAMMERS RD
SYCAMORE PKWY
CENTRAL AVE
VALPICO RD
LINNE RD
DELTA-MENDOTA CANAL
CALIFORNIA AQUADUCT
580
N
Bicycle Accidents 1998-2004*
Accident
Fatal Accident
*Data through June 2004
rrmdesigngroup
FIGURE 5: Bicycle Accidents
Bikeways Master Plan
CITY OF TRACY
.25
.5mi
1mi

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2.5 Relevant Legislation and Policies

Aside from the City's own proposed General Plan which identifies specific goals and policies that are relevant to the Bikeways Master Plan, there are several other city, state, regional, and Federal requirements for master plans which are primarily related to funding.

This Tracy Bikeways Master Plan is consistent with regional plans such as the Unincorporated San Joaquin County Bikeway Plan prepared by the San Joaquin County Department of Public Works, and the San Joaquin County Regional Bikeways Master Plan prepared by the San Joaquin Council of Governments.

Caltrans has played an oversight and review role for Federal funding programs for bicycle projects. The Transportation Equity Act for the 21st Century (TEA-21) provides significant funding for bicycle and pedestrian projects. Many of these bicycle funding programs require approval of a Bikeways Master Plan with specified elements in order to qualify for the program.

According to the California Bicycle Transportation Act (1994), all cities and counties should have an adopted bicycle and pedestrian master plan. According to Streets and Highways code 891.2, a Bikeways Master Plan should contain:

- Estimated number of existing and future bicycle commuters: 2000 Census data for Tracy shows the percentage of workers commuting by bike to be 0.5%. This figure compares to 0.8% in the state of California, and 0.4% nationally. Tracy's numbers are likely to be slightly higher as many people may commute by bicycle occasionally. The U.S. Department of Transportation's publication entitled "National Walking and Bicycling Study" (1995) sets as a national goal the doubling of current walk and bicycling mode shares by the year 2010, assuming that a comprehensive bicycle system was in place. Given an estimated 7% population growth rate the estimated number of bicycle commuters in Tracy would be approximately 500 by 2010 without implementation of the Bikeways Master Plan. These figures do not include bicycle trips to school, other destinations or recreational trips. With the programs and policies outlined in this plan it is believed that Tracy can easily maintain 1% of its work trips by bicycle and raise the number of commuters to approximately 1,000.

- Land use and settlement patterns: can be found in Figure 1 and 2

- Existing and proposed bikeways: can be found in Figures 4, 9, 10 and 11

- Existing and proposed 'end of trip' bicycle parking facilities: can be found in Figure 15

- Existing and proposed multi-modal connections: can be found in Figure 8 and in Section 2.6

- Existing and proposed facilities for changing and storing clothes and equipment: While Tracy has no public changing facilities specifically for bicyclists, there are 63 public parks within Tracy's city limits, 13 of which have restroom facilities that can easily act as a changing facility. Restrooms at existing parks are noted in Figure 4.

- Bicycle safety and education programs: Can be found in Section 3.5

- Citizen and community participation:

In May of 2000, the City of Tracy held a yearlong public participation project, Tracy Tomorrow. This project comprised of five citizen task forces that pursued citizen involvement and provided recommendations to city council.

The recommendations from the Transportation Task Force regarding bikeways include the following[3]:

1. Develop an alternative to developer funding for closure of gaps in important routes. ***Included in Plan**
2. Develop a backup plan that does not depend on rail right-of-ways for east-west biking. ***Included in Plan**
3. Publish a Tracy bike route map. Include the existing route along the California Aqueduct. Put a printable version of the map on the Tracy website, and keep it up to date. ***Accomplished**
4. Improve the initial installation & maintenance of route marking and signage. Adopt a policy that a route is not complete until it's properly marked (& on the map). *** Addressed in Plan**
5. If auto lane reductions are made on 11th Street, take the opportunity to establish at least a Class II bike lane there. Ensure that downtown bike-locking facilities are provided ***Addressed in Plan**
6. Install bike racks on the new Tracy Transit fixed route buses. ***Accomplished**
7. Ensure that the new Bikeway Plan routes connect to all Tracy Schools and parks. ***Addressed in Plan**
8. Extend the proposed Corral Hollow bike lane to connect to the Aqueduct route. ***Included in Plan**
9. Establish a regular reporting process to track the status of Bikeway Plan implementation. ***Included in Plan**

Tracy Tomorrow's Community Enrichment taskforce examined recreational facility needs. A communitywide survey was administered and over 3,600 surveys were completed. When asked where additional facilities are needed (baseball, soccer, biking/walking paths, softball and swimming,) the greatest percentage of respondents (59.7%) chose biking/walking paths.

[3] Accomplished: Task Force recommendations that have been completed prior to this plan
Included in Plan: Task Force recommendations that are adopted in this plan.
Addressed in plan: Task Force recommendations discussed in plan without adoption or modified from original recommendation.

Additional recommendations made by the Community Enrichment taskforce include:

251. More Class I & II bike paths should be required as part of all future residential & commercial development design standards. ***Included in Plan**
252. Linear bike & walking paths incorporated into future developments & greenbelts will help make the various subdivisions more closely connected. ***Included in plan**
253. Utilize current & Future city-owned land such as pipeline easements. Use storm drain channel right-of-way as part of a walking & biking trail up to this proposed park along Old River. ***Addressed in Plan**

- Consistency with transportation, air quality, and energy plans: see section 2.1
- Project descriptions and priority listings: Can be found in the Introduction (page 3), Section 3.3 and Table 3
- Past expenditures and future financial needs: see section 5.3

2.6 Bicycle Parking Facilities

Bicycle parking facilities are classified as follows:

Class I: Class 1 bicycle parking facilities consist of bicycle lockers, or a secure area that may be accessed only by bicyclists.

Class II: Class 2 bicycle parking facilities are bicycle racks that provide support for the bicycle but do not have locking mechanisms.

A Class II rack on 6th St in Tracy

Typically, Class I facilities (lockers) will be found at large employment centers, and transit facilities. Typically, Class II facilities (racks) are located at schools, commercial locations, and activity centers such as; parks, libraries, retail locations, and civic centers.

Bicycle parking includes bike racks, lockers, and corrals. Racks are low cost devices that typically hold between 2 and 8 bicycles, allow bicyclists to securely lock their frames and wheels, are secured to the ground, and are located in highly visible areas. Class II bicycle racks are relatively inexpensive to install. A single 'inverted u' rack illustrated in Figure 7 can accommodate two bicycles and costs approximately $200 (including installation).

Bike lockers are covered storage units that typically accommodate one or two bicycles per locker, provide additional security and protection from the elements and are unmonitored by the City. Lockers are typically used by commuters who ride expensive bicycles, and/or leave their bicycle in low traffic areas. The added protection both from the elements and from vandalism makes lockers an attractive incentive when choosing to commute by bicycle.

Bike racks are most often found in commercial areas where cyclists can take advantage of shopping, educational, employment destinations or multi-modal connections and feel safe in leaving their bicycle. Bike corrals can be found at schools, stadiums, special events, and other locations, and typically involve a movable fencing system that can safely store numerous bicycles. Either locking the enclosure or locating it near other activities so that it can be supervised provides security.

A field review of Tracy revealed that additional standard bike parking facilities throughout the community are needed. More people might use their bicycles regularly if they knew they had secure parking available to them. More bicycle parking would also benefit Tracy's downtown core. Bicycles were observed to be locked to trees, or leaned against storefronts. Although the recent downtown project has increased the number of bike parking facilities in the downtown area, additional bike parking facilities may still be needed in the areas that were not improved. Specific recommendations on the bicycle storage type, amount, location, and other details are provided in the ensuing chapters. Figures 6 and 7 illustrate the recommended Class I (bike locker) and Class II (bike rack) configurations.

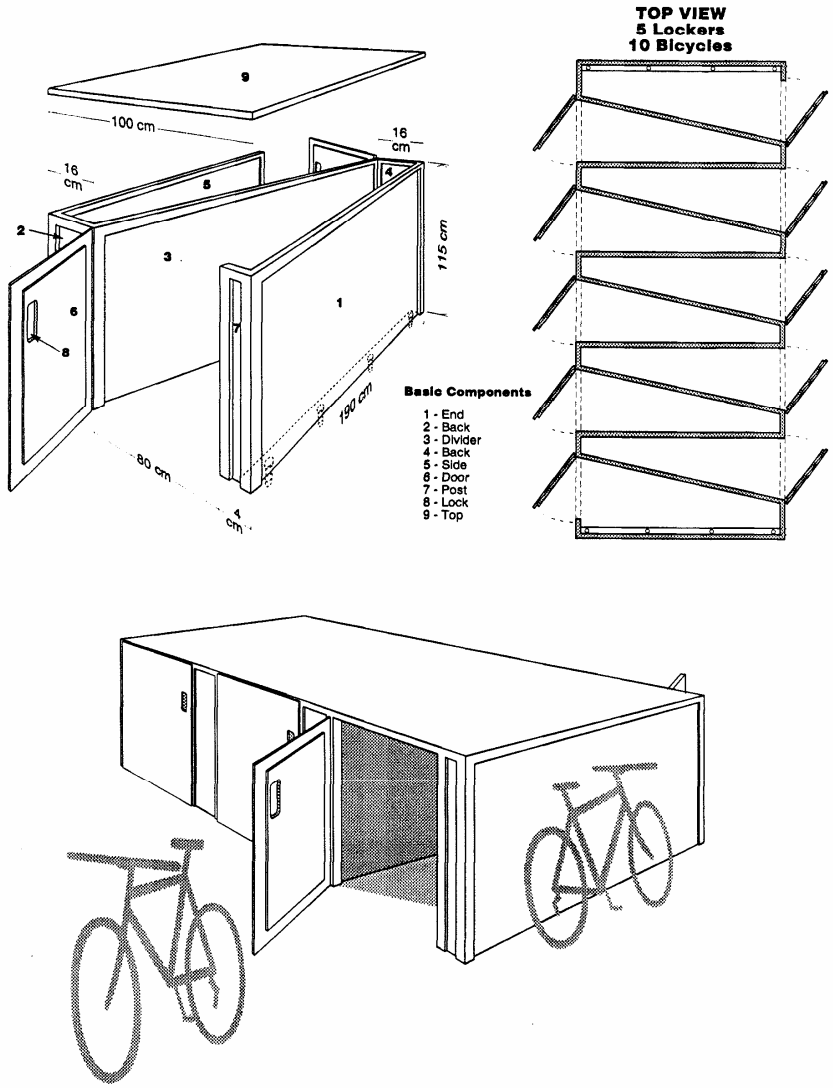

Figure 6: Class I Bike Lockers

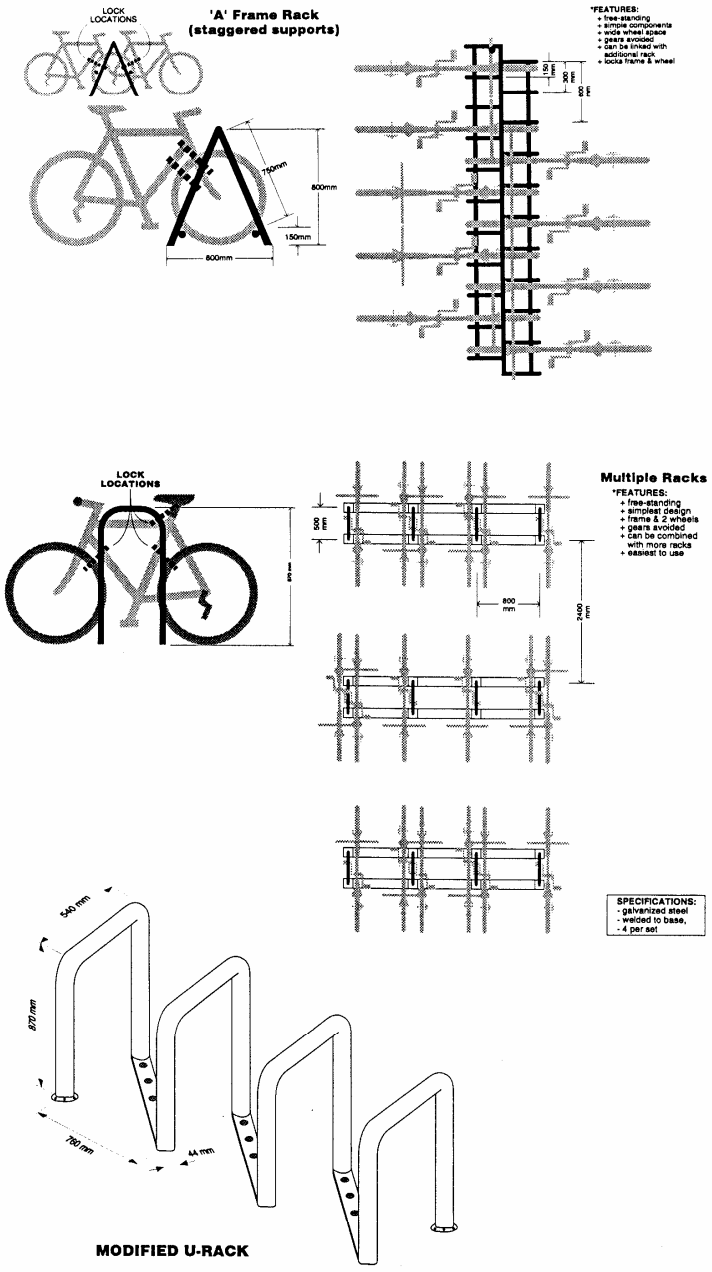

Figure 7: Class II Bicycle Racks

2.7 Multi-Modal Connections

Multi-modal facilities are places where individuals can connect/transfer to another mode of travel such as bus, rail, bicycle, automobile, vanpool or walking to their destinations. Such facilities can be very important to cyclists as they can allow trips to overcome distance or other roadway obstacles that might otherwise preclude the use of a bicycle.

- TRACER Local Fixed Route Bus Service

TRACER buses serve local transportation needs within the Tracy City limits. All buses are equipped with a front mounted two-position external bicycle rack. Bicycle related information and instructions for the carriage of bicycles is available on the TRACER website. Future plans for a multi-modal center at 6th street and Central Avenue (bowtie area) will feature interface with bicycle facilities, SMART buses and services connecting to Dublin/Pleasanton's BART station.

TRACER bus with 2-position bicycle rack

- San Joaquin Regional Transit (SMART)

SMART operates two services in the City of Tracy. Intercity fixed route services connect Tracy with other areas in the County, and the San Joaquin Commuter connects residents to Sacramento, the Bay Area and BART. The schedule is designed for commuters who work an 8 a.m. to 5 p.m. shift. The bus gives passengers enough time in the morning to transfer to BART to get to their Bay Area destination and enough time in the evening to return to the station to catch the return bus. Many passengers who ride this bus work in Oakland and San Francisco. The Tracy stop is located at Grant Line Road and I-205 near Wal-Mart. This Park & Ride location has bicycle lockers that can accommodate 4 bicycles. All SMART busses accommodate up to two bikes on front racks.

- Altamont Commuter Express (ACE)


Bicycle parking at Tracy ACE station, lockers at left of photo.

The Altamont Commuter Express (ACE) provides access to Silicon Valley and the Livermore Valley with six trains daily between Stockton and San Jose. Three trains stop in Tracy in the morning and return from San Jose in the evening. The ACE stops in Lathrop/Manteca, Tracy, Livermore, Pleasanton, Fremont, and Santa Clara and terminates at the San Jose Diridon Station, where connection can be made to

Caltrain, Amtrak, and Santa Clara Transit. The Tracy ACE station is located at Tracy Boulevard and Linne Road. There are 32 spaces on each train available on a first come, first serve basis. The Tracy ACE station has 24 bicycle lockers and 6 lockable racks. More bicycle parking is needed however as bicycles are frequently locked to railings when the racks become full. This plan recommends that 10 additional Class II bicycle racks be installed at the Tracy ACE station to serve existing and future demand.

Bicycle parking onboard ACE Train

- Amtrak

Tracy has connecting service to other destinations via Amtrak's Thruway bus service. The stop in Tracy is next to the Wendy's restaurant off of Tracy Blvd just off I-205.

Park & Ride

Amtrak Bus

Future Multi-modal

ACE Station

Tracy Airport

205

580

CLOVER RD

KAVANAGH AVE

GRANT LINE RD

LOWELL AVE

EATON AVE

10TH ST

9TH ST

6TH ST

W ELEVENTH ST

BYRON RD

SCHULTE RD

VALPICO RD

LINNE RD

LAMMERS RD

CHRISMAN RD

MACARTHUR DR

EAST ST

HOLLY DR

LINCOLN BLVD

TRACY BLVD

CORRAL HOLLOW RD

SYCAMORE PKWY

CENTRAL AVE

UPRR

DELTA-MENDOTA CANAL

CALIFORNIA AQUADUCT

N

Existing and Future Multi-Modal Stations

Existing (bike parking)

Existing (no bike parking)

Future

rrmdesigngroup

FIGURE 8: Multi-Modal Connections

Bikeways Master Plan

CITY OF TRACY

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3.0 Recommended System Design & Improvements

This section of the Bikeways Master Plan addresses objectives 2, 4 – 8, 11 and 12 in section 1.0. The recommended system and improvements fall under two distinct categories:

- Bicycle System
- Bicycle Programs

3.1 Bicycle System

Tracy's bikeway system is well developed in areas of recent development. New development has expanded existing roads in addition to creating new roads with class II or parallel Class I bicycle facilities. New parks also have excellent bikeway connections and bicycle parking. Many of the current gaps in the bikeway system can be resolved by new development in gap areas and contributions from developer fees. The bulk of the bicycle circulation recommendations contained in this bikeways master plan consist of improvements to the built up and developed areas of Tracy and entirely new alignments that the City will be at least partially financially responsible for developing. The entire proposed future bikeway system is shown in Figure 9, with future segments being shown in Figure 10, and finally a long range concept is illustrated in Figure 11.

The proposed Tracy Bikeway system is characterized by continued improvement of existing streets to include bicycle facilities to get Tracy residents to and from schools, parks, the library, downtown, and other work and recreation destinations; and the development of new bikeway alignments and connections to the existing system along railroad, utility and canal right-of-ways. Railroad projects have a great potential to make new connections to downtown and may be made along unused sections of track, or with improvements along active sections. At a minimum, all bicycle routes identified on the Plan will be Class III bike routes and include intersection protection where needed, wider curb lanes where possible, traffic calming where necessary, shoulder striping where feasible, and signing. Finally, new bicycle support facilities (such as bicycle parking) and programs are proposed for the City (see section 3.5).

Long range plans for Tracy could include further improvements such as the addition of an 'Orbital' bikeway that could provide Tracy residents with a 20 mile loop around the developed City to better enjoy the countryside. This Orbital route could be supplemented with connections to the Tracy bikeways system allowing multiple options to get back into the City. See Figure 11 for a long range bikeways system. Since the long range plans could take years to implement, no meaningful cost estimate can be provided.

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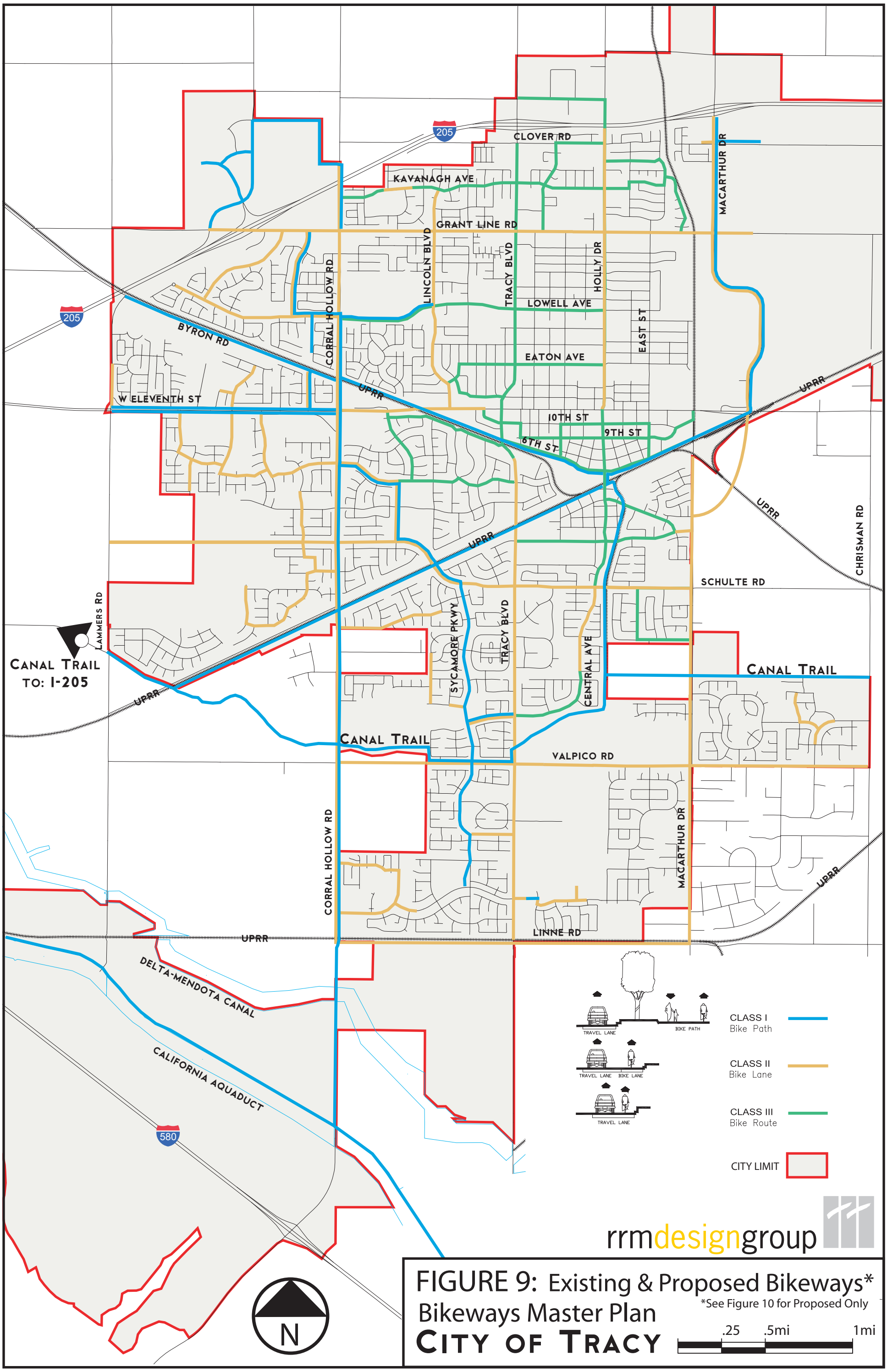
205
CLOVER RD
KAVANAGH AVE
GRANT LINE RD
MACARTHUR DR
LINCOLN BLVD
CORRAL HOLLOW RD
TRACY BLVD
HOLLY DR
LOWELL AVE
EAST ST
205
BYRON RD
EATON AVE
W ELEVENTH ST
UPRR
10TH ST
9TH ST
6TH ST
UPRR
UPRR
CHRISMAN RD
SCHULTE RD
LAMMERS RD
SYCAMORE PKWY
TRACY BLVD
CENTRAL AVE
CANAL TRAIL
TO: I-205
UPRR
CANAL TRAIL
VALPICO RD
CORRAL HOLLOW RD
MACARTHUR DR
UPRR
UPRR
LINNE RD
DELTA-MENDOTA CANAL
CALIFORNIA AQUADUCT
580
N
TRAVEL LANE
BIKE PATH
TRAVEL LANE
BIKE LANE
TRAVEL LANE
CLASS I
Bike Path
CLASS II
Bike Lane
CLASS III
Bike Route
CITY LIMIT
rrmdesigngroup
FIGURE 9: Existing & Proposed Bikeways*
Bikeways Master Plan
CITY OF TRACY
*See Figure 10 for Proposed Only
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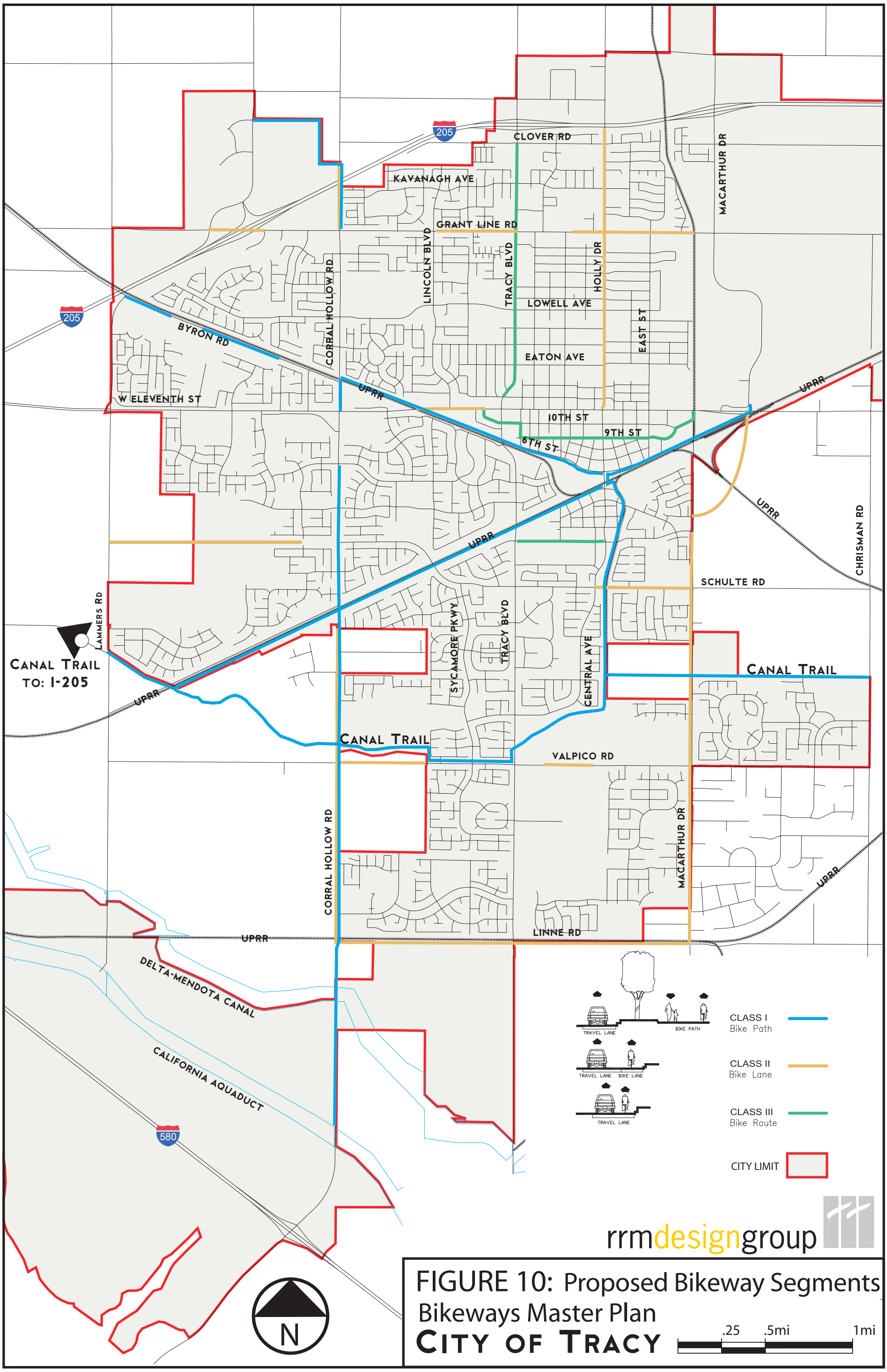

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FIGURE 10: Proposed Bikeway Segments

Bikeways Master Plan

CITY OF TRACY

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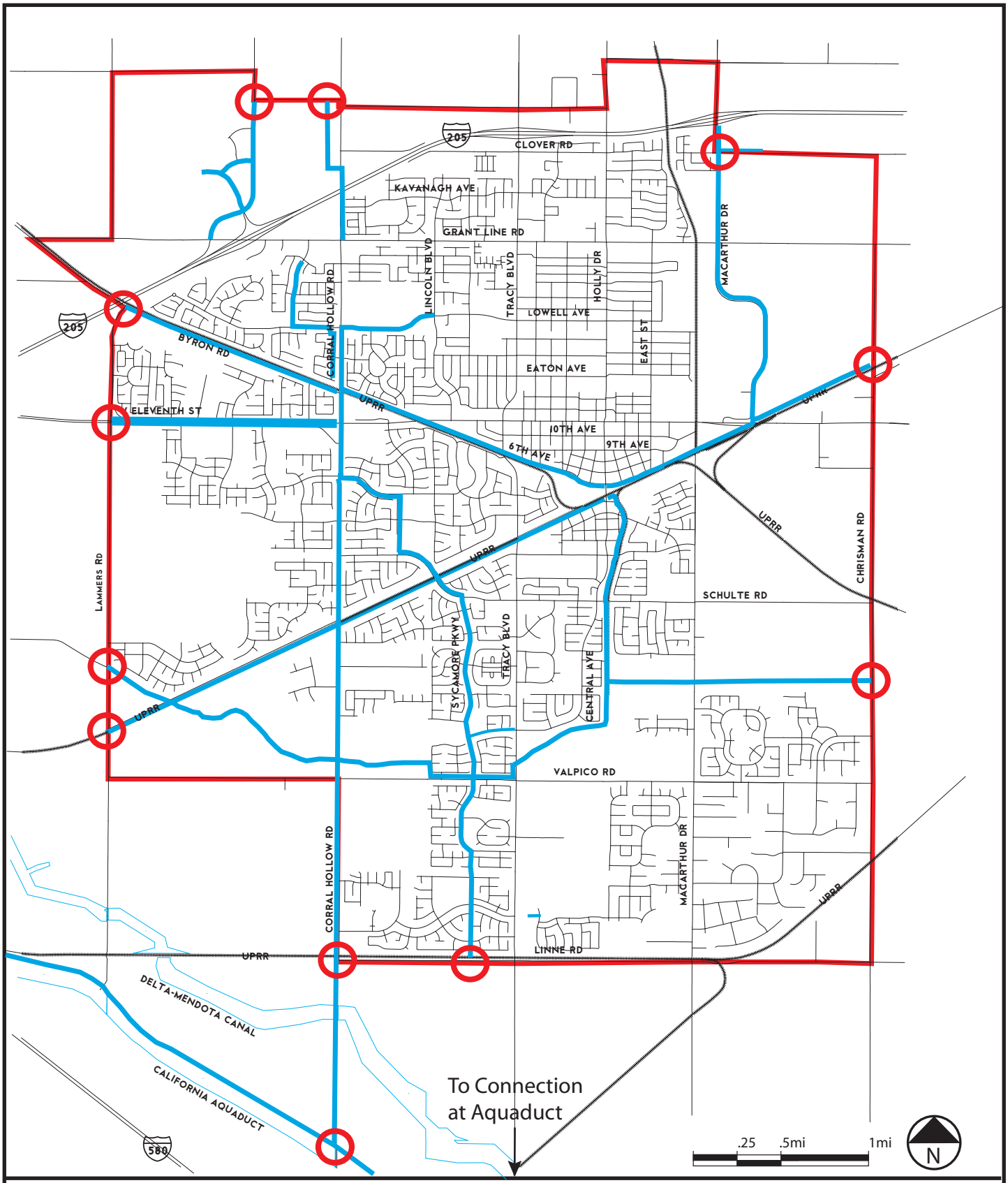

FIGURE 11: Long Range Bikeways Plan

Bikeways Master Plan
CITY OF TRACY

Future Orbital Bikeway

Future Tracy Multi-Use Paths

Connection

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3.2 Existing Bicycle Design Standards and Classifications

National design standards for bikeways have been developed by the American Association of Highway and Transportation Officials (AASHTO) and the California Department of Transportation (Caltrans). The Caltrans *Highway Design Manual, Chapter 1000: Bikeway Planning and Design*, serves as the official design standard for all bicycle facilities in California. Design standards in Chapter 1000 fall into two categories, mandatory and advisory. Caltrans advises that all standards in Chapter 1000 be followed, which also provides a measure of design immunity to the City. Not all possible design options are shown in Chapter 1000. The City may have to find solutions where there is no established standard for certain bikeway applications such as rail trails, Class I and II roadway intersection crossings and other geometric constraints. All designated Class I, II, or III bicycle facilities should conform to Chapter 1000. Where facilities do not meet these criteria, they should not be referred to as a Class I, II, or III.

The following are various menu options for consideration:

Traffic Calming. This includes any effort to moderate or reduce vehicle speeds and/or volumes on streets where that traffic has a negative impact on bicycle or pedestrian movement. Because these efforts may impact traffic outside the immediate corridor, study of traffic impacts is typically required. Techniques include installing traffic circles, intersection islands, partial street closings, 'bulb-out' curbs, pavement treatments, lower speed signal timing, and narrowing travel lanes. The City of Tracy already has a relatively continuous street grid system with little filtering of through traffic into residential neighborhoods. Traffic circles, roundabouts, and other measures may be considered for residential collector streets where there is a desire to control travel speeds and traffic volumes but not to install numerous stop signs or traffic signals. The Tracy Fire Department has requested that speed humps not be used in the city as they can impede emergency traffic as well as damage fire apparatus.

Bicycle Boulevards. The bicycle boulevard is a refinement of the shared roadway concept: the operation of a local street is modified to function as a through street for bicycles while maintaining local access for automobiles. Traffic calming devices reduce traffic speeds and through trips. Street markings and signage legitimize the route both to cyclists and to automobiles. Traffic controls limit conflicts between motorists and bicyclists and give priority to through bicycle movement[4]. In selected locations, bicycle boulevards could be used in Tracy to promote bicycle circulation where traffic volumes are low and physical constraints limit separate facilities. Further review of bicycle boulevard applicability is recommended and would be studied on a case-by-case basis.

Signing and Striping. All bikeway signing in Tracy should conform to the signing identified in the Caltrans supplement to the Manual on Uniform Traffic Control Devices (MUTCD). These documents give specific information on the type and location of signing for the primary bike system.

[4] From Oregon Bicycle Pedestrian Plan, Oregon Department of Transportation

3.3 Creating a Bikeway System

A bikeway 'system' is a network of bicycle routes that, for a variety of reasons including safety and convenience, provide a superior level of service for bicyclists and/or are targeted for improvements by the City due to existing deficiencies. It is important to recognize that, by law, bicycles are recognized as vehicles and are afforded the same legal rights and privileges as cars on any roadway whether or not it is part of the bikeway system**.** The bikeway system is a tool that allows the City to focus and prioritize implementation efforts where they will provide the greatest community benefit.

There is an established methodology for selecting a bikeway system for any community. The primary method is to receive input from the local bicycling community and local staff familiar with the best routes and existing constraints and opportunities.

The following criteria are typically used to develop a bicycle system:

- Existing Bicycling Patterns and connectivity
- Traffic volumes and travel speeds
- Amount of side friction (driveways, side streets)
- Curb-to-curb width
- Pavement condition
- Access from residential areas
- Number of destinations served, including schools, parks, employment and transit.
- Topography
- Integration into the regional system
- Adjacent land use
- On-street parking
- Accident data and safety concerns
- Existing bottlenecks or constraints
- Existing opportunities such as planned roadway improvements

The Tracy bikeway system was developed focusing on connecting existing segments of bikeways, addressing routes used by bicyclists, and focusing on specific opportunities and constraints. The street grid pattern offered several distinct through corridors that connected residential areas with activity centers such as downtown, schools, and parks.

Once a bikeway system is identified, the greatest challenge is to prioritize the segments for implementation that will offer the greatest benefit to bicyclists. Aside from the criteria used in developing the system as a whole, selection of these top projects is based on:

- Destinations and attractions accessible from the potential travel corridors
    - The number of schools served
    - The number of recreational centers served. If the segment is a Class I bike path, the pathway itself may qualify as a recreational destination
    - The number of employment centers served
- Safety to bicyclists and motorists alike who must share the travel corridors
- Connectivity to other bicycle travel corridors or modes of transportation

The bikeway system and the top projects are flexible concepts that serve as guidelines to those responsible for implementation. The system and segments themselves will change over time as a result of changing bicycling patterns and implementation constraints and opportunities.

3.4 Description of Proposed Bikeway Improvements

The top prioritized short term bikeway goals in Tracy are:

- Develop a Tracy Bikeway System logo for use on the primary network. This sign may include a bikeway numbering system that is keyed into a publicly-produced bikeway/facilities map.
- Completion of gap closure projects
- Development of long range trail plans on rail corridors
- Installation of bikeways coordinated with new development
- Development of long range Class I Bike Paths on existing Westside Irrigation District easements.

Tables 3 and 4 list specific bikeway improvements for gap closures and new bikeway routes that will achieve the above goals. Table 3 covers bikeway projects expected to be completed as part of new development, while Table 4 covers new bikeway projects that Tracy will have to develop independently. Both tables are supported by project descriptions.

Table 3[5]: Proposed Bikeway Segments (Requirement of New Development)				
Gap Closures				
Road	**From**	**To**	**Facility Type**	**Distance**
Byron Road (South Side)	I-205	Corral Hollow	CI	0.75 miles
Corral Hollow Rd.	Cypress Dr.	Aqueduct Bike Path	CI	3.75 miles
Corral Hollow Rd.	W. Parkside Dr.	Linne Rd.	CII	1.25 miles
Valpico	Corral Hollow	Existing CII	CII	.5 miles
Valpico	Tracy	MacArthur	CII	.4 miles
MacArthur Dr.	Linne Rd.	E. 11th St.	CII	1.8 miles
Linne Road	Corral Hollow	MacArthur	CII	2.0 miles
Schulte Rd.	Lammers Rd.	Barcelona Dr.	CII	1.1 miles
Chrisman Rd.	Grant Line Rd.	Linne Rd.	CIII	4.5 miles

[5] As roadways in these locations are improved it will be the responsibility of the private sector to add the above bicycle facilities as conditioned by the City.

Table 4: Prioritized Bikeway Segments (Publicly Funded)					
Gap Closures					
	Road	**From**	**To**	**Facility Type**	**Distance**
1	Tracy Blvd.	I-205	Existing CII Bike lane	CIII	1.91 miles
2	9th St	10th St.	Mac Arthur Dr,	CIII	1.38 miles
3	Lincoln Blvd.[6]	Kavanagh Ave	Eleventh St.	CII	1.3 miles
4	Corral Hollow Rd	Lowell	West Valley Mall	CII	0.5 miles
5	Grant Line Rd.	Lincoln	Tracy Blvd.	CII	0.45 miles
6	Grant Line Rd.	Parker	Existing CII	CII	0.73 miles
7	Grant Line Rd.	Naglee	Toste Rd.	CII	0.3 miles
8	Holly Dr.	I-205	11th St.	CII	2.0 miles
9	Mt. Diablo Ave.	Tracy	Central Ave	CII	0.5 miles
10	Schulte Rd.	Central Ave.	Mac Arthur Dr.	CII	0.55 miles
11	Linne Road	Corral Hollow Rd	Mac Arthur Dr.	CII	2.0 miles
Class I Trails					
	Corridor (direction of rail/trail)	**From**	**To**	**Facility Type**	**Distance**
1	Corral Hollow Road	11th St.	Existing CI	CI	0.18 miles
2	Rail Path (SW/NE)	Lammers Rd.	Central Ave.	CI	3.0 miles
3	Rail Path (NW/SE)	Corral Hollow Rd	Tracy Blvd.	CI	1.5 miles
4	SW/NE	6th Ave	Existing CI at MacArthur	CI	0.35 miles
5	N/S Spur Line	Bowtie area	West Side Irrigation Canal	CI	1.1 miles
6	West Side Irrigation Canal Bicycle Path	Lammers Rd	Schulte Rd.	CI	3.9 miles
7	West Valley Mall Connector	Corral Hollow Rd	Naglee Rd.	CI	1.1 miles

[6] Improvements are part of a 'Road Diet' plan described on page 48.

Gap Closures Through New Development

Segments highlighted in Table 3 should be completed as Tracy continues to develop. These segments will be added as roadways are improved to accommodate new developments. The City of Tracy should not be required to expend any funds, nor apply for funding for these segments to be completed. Encouragement however, should be given by the City to the developers to make the modifications as soon as possible. Many of the segments listed in Table 3 have discontinuous bicycle facilities as sections of the roadways were improved by adjacent development.

Gap Closure Projects to be Implemented by the City of Tracy

Tracy Boulevard

Accident data from Table 2 shows Tracy Boulevard as having the greatest number of accidents in Tracy from 1998-2004. Tracy Blvd does not currently have any bicycle facilities and as it is a major north-south connector for the city, therefore with or without accommodation bicycles will use it heavily. Tracy Blvd has two lanes in each direction and a center median with alternating turn lanes. Innovation is required here as there is not sufficient space for installing bicycle lanes and rebuilding the roadway and medians would be prohibitively costly.

San Francisco's Department of Parking and Traffic has done a great deal of research of the 'shared roadway' concept and has provided the impetus for the concept to be worked into The California supplement of the Manual of Uniform Traffic Control Devices (MUTCD). The concept is to provide a slightly wider outside travel lane with bicycle stenciling to "improve bicyclists' positioning on roadways, encourage cycling in the correct direction, discourage cycling on sidewalks, and to decrease motor vehicle/bicycle conflicts by informing motorists where to expect cyclists, especially on urban and suburban roadways with narrow curb lanes." Typical shared lanes range from 14-16 feet wide. With a slight narrowing of the inside travel lane, Tracy Boulevard should fit this model nicely without any reconstruction. See figures 12 and 13 for exact specifications.

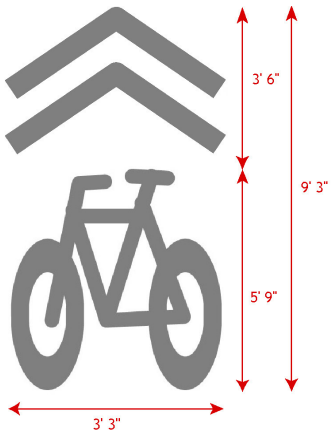

Figure 12: Shared Lane Bicycle Stencil.

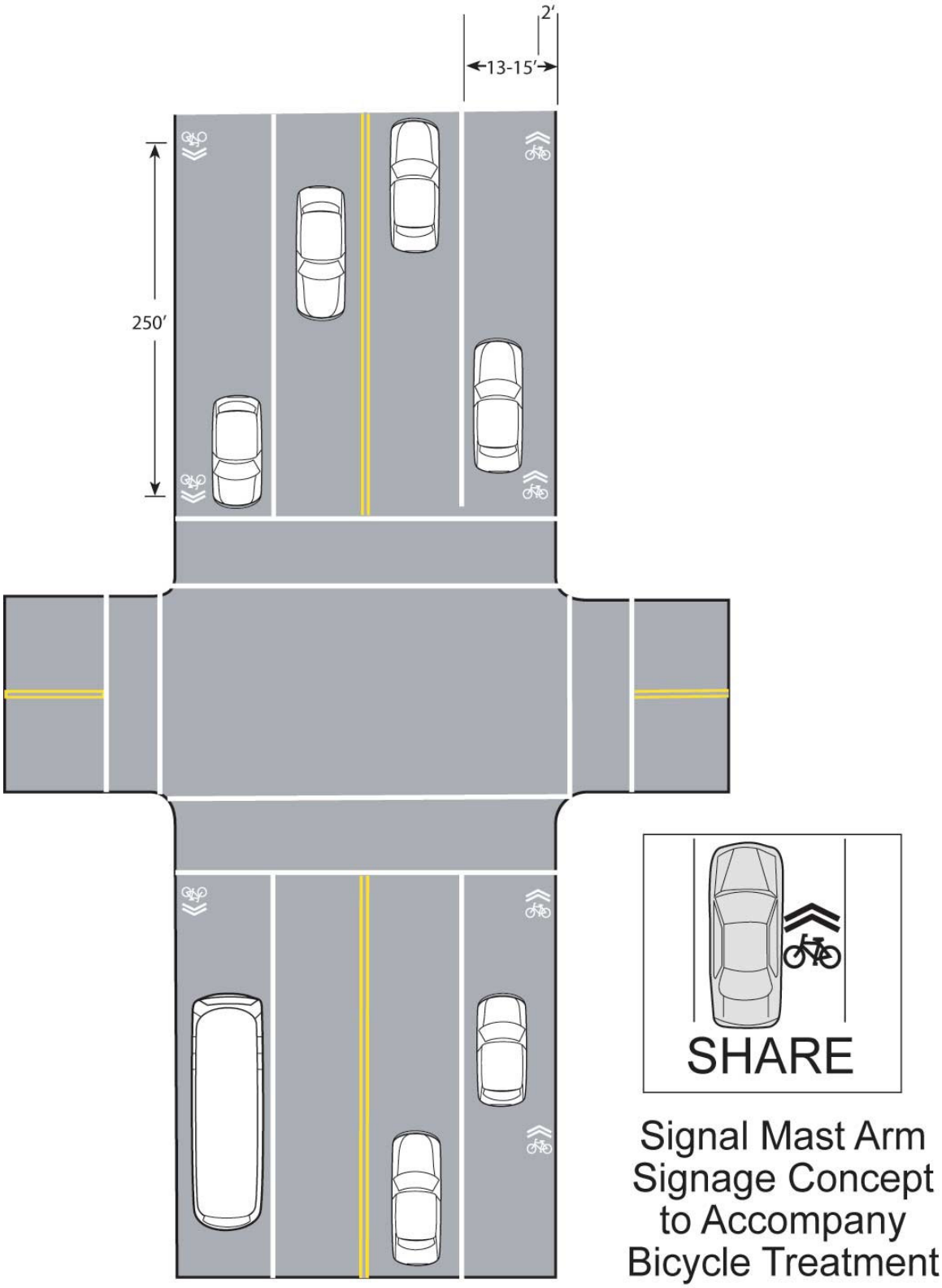

Figure 13: Shared Roadway Lane Configuration

Lincoln Blvd

Lincoln is currently configured as a four lane arterial with no center median or turning lane. In addition there is curbside parking on both sides serving residences along the corridor. Considerable momentum has grown in recent years in cities across America for a roadway reconfiguration called a "road diet". "Road Diets" are often conversions of four-lane undivided roads into three lanes (two through lanes and a center turn lane), as shown in figure 14[7]. The fourth lane may be converted to bicycle lanes, sidewalks, and/or on-street parking. Moreover, existing space is reallocated however the overall area remains the same. Studies have shown this reconfiguration to have slight overall safety benefits and provide little to no loss to vehicle capacity because left-turning vehicles are moved into a common two-way left-turn lane. Lincoln Blvd is a perfect candidate for a road diet, especially in its residential sections where the road diet acts as a traffic calming device improving the feel of the neighborhood. The cost of installation would also be inexpensive as it would only be based on re-striping and signage.

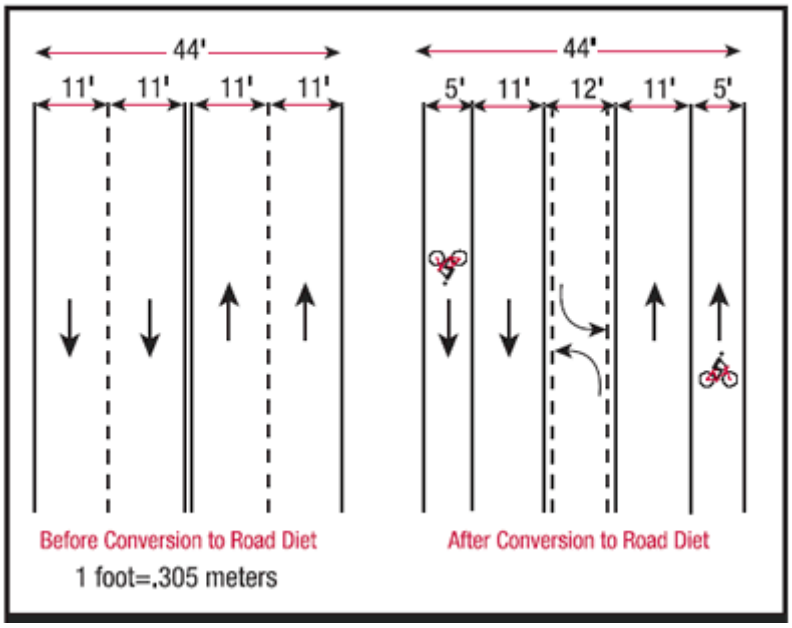

Figure 14: "Road Diet" Lane Configuration

"Road diets" can offer potential benefits to both vehicles and pedestrians. On a four-lane street, drivers change lanes to pass slower vehicles (such as vehicles stopped in the left lane waiting to make a left turn). In contrast, drivers' speeds on two-lane streets are limited by the speed of the lead vehicle. Thus, "road diets" or reduction in lanes to achieve equal or better vehicular function while adding Class II bike lanes, may reduce vehicle speeds and vehicle interactions during lane changes, which potentially could reduce the number and severity of vehicle-to-vehicle crashes. Pedestrians may benefit because they have fewer lanes of traffic to cross, and because motor vehicles are likely to be moving more slowly. Roadways treated with a Road diet have easily carried traffic amounts of more than 25,000 vehicles per day with no capacity issues.

[7] Federal Highway Administration "Evaluation of Lane Reduction "Road Diet" Measures and Their Effects on Crashes and Injuries," 2003.

Corral Hollow Road
This roadway is one of the most important streets for cyclists in all of Tracy. Like, Tracy Boulevard, it is a major north-south connector and contains many shopping centers along its length including the West Valley Mall. Corral Hollow also has significant regional importance as it connects to the California Aqueduct Class I path, and serves regional connections to Alameda County and Stockton (Unincorporated San Joaquin County Bikeway Plan). Corral Hollow has the lowest recorded number of accidents for the major arterials, however additional improvements would make the corridor more continuous to cyclists. This plan recommends that two segments of the roadway be improved. The first section serves the West Valley Mall under the 205 freeway. The second involves a Class II roadway from Linne Rd to the California Aqueduct Bicycle Path, with the installation of a Class I as new development and road improvements occur. Middle sections of the roadway will be upgraded to Class I or II by developers as Tracy grows.

Grant Line Road
This roadway is a major east-west corridor and one of the only roadways in the older parts of Tracy that is capable of supporting full Class II bike lanes. The roadway is currently very discontinuous with many sections needing significant curb realignments and widening. Because of the significant work needed to bring this arterial up to standards this improvement will be expensive, however, vehicle circulation will also improve so funding could come from other sources.

Holly Drive
Holly Drive is a natural route for cyclists to downtown. The roadway is two lanes wide with curb parking. Measurements have found Holly drive may have ample room for bike lanes to be striped with a minimum of disruption to vehicular traffic. Much of Holly Drive is 48 feet wide making 5 foot bike lanes inexpensive and easy to include. Further evaluation of this opportunity should be made by the City.

W Linne Road
This roadway is currently very narrow and carries heavy truck traffic. In the future, W Linne Rd. may serve a significant bicycle need and should be considered for improvement. Linne Rd. is currently outside of the City limits, however if the area is annexed in the future and redeveloped, bicycle lanes should be included.

MacArthur Road
This roadway is one of Tracy's main truck routes; however it also serves as an important link for bicyclists. The roadway has been improved where new development has occurred to provide new bicycle lanes. MacArthur Road should be upgraded as development occurs to maximize linking opportunities and safety.

Mt. Diablo Road
This road should be signed as a Class III bikeway to complete the bikeways system. This project will have a low cost and may be implemented quickly.

Class I Trails

City of Tracy Class I Path Signage
Many of the existing Class I bicycle paths in Tracy are not signed in accordance with Caltrans standards. A signage program should be developed from objective 9.5 to sign existing and planned Class I bicycle routes for consistency and conforming to the Manual of Uniform Traffic Control Devices.

Corral Hollow Road Gap Closure
An existing Class I facility exists from Adams Park up to Lowell Avenue, with the exception of a segment between W Eleventh St and Byron Road. This section does have a sidewalk, however it needs to be widened to conform to Caltrans Class I design standards. New Class I development along W Eleventh St and Byron Road and future connections along the railroad corridor further exaggerate this need and make it a critical gap in the bikeway system. As in other recommended projects, certain elements will need to be addressed such as right of way and landscaping irrigation.

Rail Trail (SW/NE)
Tracy has enormous untapped potential for bicycle circulation within its existing railroad rights-of-way. The railroad corridors not only serve direct connections between neighborhoods, but they feed into the 'Bowtie' area in downtown Tracy which will develop in the coming years to contain new business opportunities and a multi-modal center. This proposed segment runs along the south side of the railroad tracks and will connect with Class II lanes on Corral Hollow and Tracy Blvd in addition to the north-south Class I and II lanes on Schulte Rd. The intersection of this trail with Tracy Boulevard will require study to determine a safe crossing. Easements will need to be negotiated with the Union Pacific Railroad.

Rail Trail (NW/SE)
This trail will run along the north side of the tracks from the junction of two other existing Class I trails at Byron Road and Corral Hollow Road to the 'Bowtie' area in downtown Tracy. The proposed alignment is wide and could easily accommodate a bicycle facility and not impact the rail line that could serve a future passenger link to Livermore and Pleasanton. Easements will need to be negotiated with Union Pacific Railroad.

MacArthur Boulevard Connector
This link would connect the existing Class I and II facilities heading north without requiring a bicyclist to travel on Eleventh Street. The connector would travel along the north side of the tracks from the bowtie area and pass under the Eleventh Street overpass to tie into the existing bicycle facilities. Easements will need to be negotiated with Union Pacific Railroad. Additionally, there is a separate Residential Specific Plan (RSP) funded project involving realignment of MacArthur Boulevard.

N/S Spur Line
This railroad spur leaves the bowtie area of downtown Tracy and heads south roughly parallel with Central Ave. The right-of-way for this rail spur is 100 feet wide, leaving plenty of room for a Class I path. This path can connect with the proposed Westside Irrigation Canal (below) to provide a link to downtown Tracy. Easements will need to be negotiated with Union Pacific Railroad.

Westside Irrigation Canal
In addition to the railroad paths, an excellent opportunity exists for the City of Tracy to take advantage of the Westside Irrigation District's Canal through southern Tracy. The suggested alignment runs from the city limits at Lammers Rd to Chrisman Rd. Future options include extensions westward to Interstate 205 and eastward past Chrisman Rd. Easements will need to be negotiated with the Westside Irrigation District. Precedent has been set for a private irrigation canal company allowing a multi-use path along its banks in Turlock, CA.

3.5 Bicycle Parking and Other Support Facilities

The following recommendations will serve to expand upon the existing bicycle parking standards in Tracy's Municipal Code.

- Standardized bike parking installed at all public destinations, see figures 6 and 7.
- All renovations or new retail/office development in excess of 5,000 gross leasable square feet is required to provide one approved bicycle rack per 30 employees.
- Bicycle parking for should be implemented as part of the building permit process, when applicable.
- New multi-modal stations and park-and-ride locations should have adequate Class I and II bicycle parking.
- Encourage local school districts to construct, enhance and maintain new and existing bicycle corrals at all schools.
- Provide bike corrals (secured) at significant community events and fairs.
- Establish framework/program whereby existing businesses can request installation of a bicycle rack to serve customers.
- A minimum of 10 new Class II racks should be installed at the Tracy ACE station to meet current and future demand.

A site visit revealed that bicycle parking has been well provided in all recently constructed city parks, shopping areas and schools. Older areas should be audited to determine if bicycle parking is present. Tracy has recently undergone a downtown streetscape improvement project on Central Ave and 10th Streets in which 16 Class II bicycle racks were added. These new racks can accommodate up to 32 bicycles. Sections of downtown that did not receive infrastructure upgrades and typically have no bicycle parking at all. The City should work with businesses along 11th Street to identify and provide free of charge, suitable locations for bicycle racks to serve customers. Racks should also be installed on the premises of older shopping centers along Tracy Blvd. and Grant Line Road that do not currently have racks. Existing and proposed bicycle parking in Tracy can be found in Figure 15.

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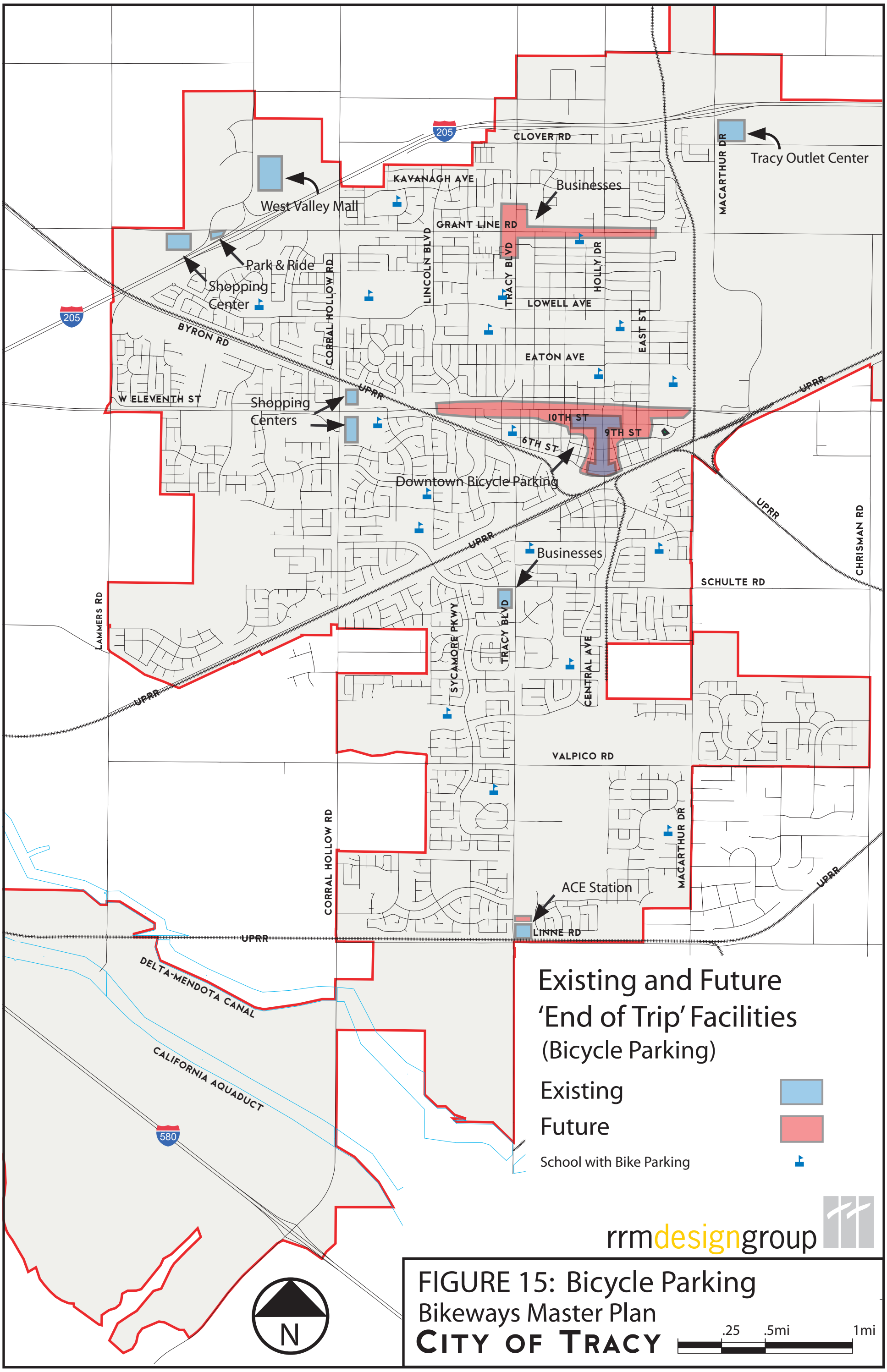
205
CLOVER RD
MACARTHUR DR
Tracy Outlet Center
KAVANAGH AVE
Businesses
West Valley Mall
GRANT LINE RD
LINCOLN BLVD
TRACY BLVD
HOLLY DR
Park & Ride
Shopping Center
CORRAL HOLLOW RD
LOWELL AVE
EAST ST
205
BYRON RD
EATON AVE
W ELEVENTH ST
Shopping Centers
UPRR
10TH ST
9TH ST
6TH ST
Downtown Bicycle Parking
UPRR
CHRISMAN RD
Businesses
SCHULTE RD
LAMMERS RD
SYCAMORE PKWY
TRACY BLVD
CENTRAL AVE
UPRR
VALPICO RD
CORRAL HOLLOW RD
MACARTHUR DR
ACE Station
UPRR
LINNE RD
UPRR
DELTA-MENDOTA CANAL
CALIFORNIA AQUADUCT
580
N
Existing and Future
'End of Trip' Facilities
(Bicycle Parking)
Existing
Future
School with Bike Parking
rrmdesigngroup
FIGURE 15: Bicycle Parking
Bikeways Master Plan
CITY OF TRACY
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3.6 Provision of Bike Facilities Through New Development

The City of Tracy has a comprehensive proposed General Plan that dictates how Tracy will evolve over the coming years. The Land Use, Community Character, Circulation and Open Space Elements of the General Plan provide guidance for new developments and on bicycle and pedestrian connectivity. Table 3 of this Bikeways Master Plan lists major segments of the Tracy bikeway system that should be provided through new development. Figure 16 shows a model neighborhood with excellent bicycle and pedestrian connectivity.

Every new neighborhood should provide direct pedestrian and bicycle connections both within the new neighborhood and to the citywide system including access to surrounding parks, schools, shopping centers and regional employment centers if applicable. On the exterior of the project new bike lanes along all adjacent arterial and collector streets should be provided including separate Class I bike paths adjacent to arterial streets as part of their projects where applicable. New development projects including commercial, office, multi-family residential, educational, recreational and transit park-and-ride land uses shall provide bicycle parking and/or storage facilities consistent with section 3.5 and Figures 5 and 6. Prior to project approval and through the project review process, city staff in appropriate departments should provide oversight and guidance to ensure new development projects satisfy the requirements of the Tracy General Plan and the goals and objectives of this Bikeways Master Plan.

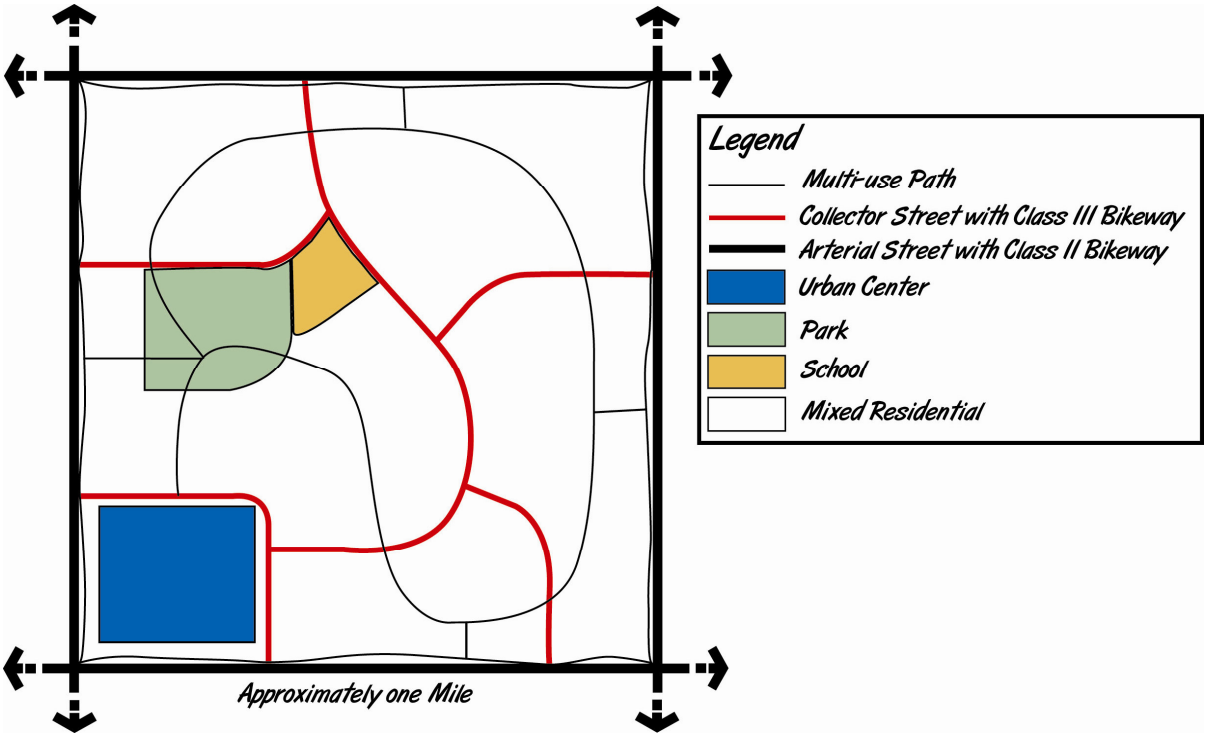

Figure 15: City of Tracy Neighborhood Model

3.7 Bicycle and Pedestrian Safety Education Programs

This section covers future efforts to educate bicyclists and motorists, and efforts to increase the use of bicycles as a transportation alternative.

3.7.1 *Education*

Educating children about bicycle safety, maintenance and the rules of the road can be effective in promoting safe riding practice. Juveniles were involved in over 1/3 of reported bicycle collisions in 2004. Reaching children in elementary school can create increased awareness and skill levels among young cyclists and increase the likelihood that these children will continue to ride bicycles safely as adults. Such youth education can thereby reduce the incidence of accidents both now and in the future. The Tracy Police Department has historically taught bicycle safety and held the occasional bike rodeo, however this program has largely lapsed. Police typically make good bicycle instructors to children as they are admired as role models and authority figures. The Tracy Police Department could establish a more regular program giving bicycle assemblies once a year to 3rd, 4th, and 5th graders for a relatively low cost. A police officer's time is billed at approximately $30/hr, with 14 elementary schools in the city and a 2 hour time commitment per school the program could be undertaken for a low cost. When including the cost of preparation time and materials a basic program could be undertaken for under $2,000 annually.

3.7.2 *Bicycle Information Resources*

The City of Tracy should make information about bicycling readily available to existing and prospective cyclists.

Bicycle/Facility Map
Tracy should ensure that adequate supplies of city bicycle map are made available at city hall, local bicycle shops, the city library and other sites of high public use. Information available on the map can help cyclists plan routes for local trips and educate readers on the rules of the road.

Tracy City Web Site
Many cities across the country use their Internet sites as informational resources for cyclists. The City of Tracy should make use of its World Wide Web resources to provide online information for cyclists. A downloadable version of the city bicycle/facility map should be available as well as information on bicycle commuting and traffic code. Efforts should also be made to coordinate with Commute Connection (a program of SJCOG), and the Altamont Commuter Express (ACE) to link to the bicycle information on Tracy's website.

3.7.3 Public Service Announcements / Bicycle Promotion

Getting information out to the public about bicycling doesn't have to be complicated or expensive. Some cities use their utility bills to distribute public service announcements. City Transit can also be an effective mobile billboard conveying messages to drivers, cyclists, and pedestrians alike all over the city. Government television channels through the local cable provider can also broadcast slideshow presentations providing driver and bicycle educational information at little or no cost.

3.8 Safe Routes to School

In addition to school based bicycle education programs Safe Routes to Schools (SR2S) is a popular program spreading across Canada and the U.S. designed to decrease traffic and pollution and increase the health of children and the community. The program promotes walking and biking to school through education and incentives that show how much fun it can be. The program also addresses the safety concerns of parents by encouraging greater enforcement of traffic laws, educating the public, and exploring ways to create safer streets.

An engineering component is part of a comprehensive SR2S program, and that means money for infrastructure. In 1999, California became the first state to pass legislation specifically designating a third of its federal (TEA-21) safety set-aside money, about $20 to $25 million per year, for construction projects that would make corridors leading to school safer. California faced $240 million worth of project requests in the first two years of the pilot SR2S program, considerably more than the $45 million available. As of this writing, the Federal Government is working on developing a new transportation funding bill to succeed (TEA-21). This bill is expected to drastically increase funding levels for SR2S projects when it is approved in 2005.

Tracy schools should be encouraged to examine their approaches for safety problems concerning bicycle and pedestrian circulation and contact Public Works if improvements are believed to create significant benefits. Individual projects can then be prioritized and submitted to Caltrans for funding through its Safe Routes to Schools Account (see section 5.2).

3.9 Community and Employer Outreach

Community support is essential to ensure implementation of the bikeways master plan over time. While the City may be responsible for designing and constructing physical improvements, strategies for community involvement will be important to ensure broad-based support--which can translate into political support--which can help secure financial resources. Involvement by the private sector can significantly raise the awareness of the benefits of bicycling and walking. Typically this is accomplished from a range of small incremental activities by non-profit groups, or efforts by the largest employers in the City.

3.9.1 Bicycle Facilities Map

Update existing city bicycle map as improvements are made that show existing and recommended touring and commuting bicycle routes, access to regional bike trails and key City facilities.

3.9.2 *Bike Fairs and Races*

Events could be sponsored by local businesses, and involve some promotion, insurance, and development of adequate circuits for all levels of riders. Such events are typically organized by a local cycling group or event promoter. As Tracy grows so to will the likelihood for interest in a bicycle fair or race. The City should also encourage events and tours that appeal to the less experienced cyclist, possibly including attractions such as bicycle repair and maintenance workshop for kids, short fun races for kids, and/or a tour route lead by experienced cyclists who could show less experienced riders how to safely negotiate City streets. Bicycle corrals could provide secure parking so that people are able to ride their bicycles from their homes to the event. Bicycle corrals could be staffed by volunteers or as a fundraising effort.

3.9.3 *Bike-to-Work and Bike-to-School Days*

Tracy has supported bike-to-work each May with free rides on TRACER busses for commuters with bicycles. Bike to work week in Tracy is supported by Commute Connection (a program of SJCOG), The City of Tracy and the California Bicycle Coalition. The City of Tracy should encourage additional or strengthen the local bike-to-work days in combination with over events of opportunity to help promote bicycling as a commute alternative. Bike-to-school days could be jointly sponsored with the School District, possibly in conjunction with bicycle education programs.

3.9.4 Workplace Bicycle Facilities

Tracy may allow employers within the city limits to request that standard city bicycle racks be installed at their places of business to promote bicycle commuting. As per Tracy Municipal code, new commercial development is required to add bicycle parking, this program could help equip older businesses. Tracy could also provide guidance on other end-of-trip facilities such as lockers, shower and changing facilities. Tracy businesses are also encouraged to explore voluntary Travel Demand Management (TDM) programs to help mitigate traffic impacts.

4.0 Maintenance and Security

4.1 Maintenance

The current total annual maintenance cost of the primary bikeway system is estimated to be approximately $180,000 when fully implemented. All of the maintenance costs are associated with the proposed off-road bike paths, as bike lanes and routes are assumed to be maintained as part of routine roadway maintenance. Roadway resurfacing projects should provide for bicycles where possible and limit hazards such as steep or wandering pavement edges. Class I bike path maintenance costs are based on $8,500 per mile annually, which covers labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping, and bi-annual resurfacing and repair patrols. Class I bike path maintenance also includes cleaning, resurfacing and restriping the asphalt path, repairs to crossings, cleaning drainage systems and landscaping. Underbrush and weed abatement should be performed once in the late spring and again in mid-summer. All proposed designs should be closely examined to minimize future maintenance costs. (All costs are expressed in 2004 values)

4.2 Security

Security may be an issue along portions of the Class I bike paths. Enforcement of applicable laws on the bike path should be performed by the City of Tracy Police Department. Enforcement of vehicle statutes relating to bicycle operation will be enforced on Class II and Class III bikeways as part of the department's normal operations. No additional staffing or equipment is anticipated for Class II or III segments.

Normal bike path hours of operation should be Dawn to Dusk, unless otherwise specified.

5.0 Implementation Strategy

This section identifies costs for the proposed bicycle improvements, plus strategies on funding and financing.

5.1 Cost Breakdown

Costs are separated between bicycle facilities and programs. A complete breakdown of costs for publicly funded bicycle projects is presented in Table 5. The total cost over 20 years is estimated at approximately $7 – $10 million, not including such items as right-of-way acquisition costs and national economic factors. This estimate does not include right-of-way acquisition costs for some Class I bicycle paths because alternatives from leases to outright land purchase exist. Detailed cost estimates for these projects will be undertaken with preliminary engineering. The overall amount will need to be found through a combination of local, state and federal funding. Of the total project cost over 20 years, it is projected that the City will be responsible for about 13% of the installation costs. The average cost per year to the City would be about $50,000. It is important to note that while many of the projects can be funded with federal, state, and regional transportation, safety, and/or air quality grants, developer fees and others are recreational in nature and must be funded by local or private sources. This estimate is given in 2004 dollars and most likely will increase over time.

Short term improvements are recommended to be implemented over the next 20 years, or as funding is available. It also presents a 'best case' scenario for Tracy, providing a network of bicycle and pedestrian facilities and programs within the short term. Some of the more expensive projects may take longer to implement. Projects in Table 4 are ranked by category based on their estimated effectiveness and contribution to Tracy's bikeways system. It is important to note that many of the funding sources are highly competitive, and therefore impossible to determine exactly which projects will be funded by which funding sources. Timing of projects is also difficult to pinpoint exactly, due to dependence on competitive funding sources, timing of roadway and development projects, and the overall economy.

Table 5: Prioritized Bikeway Segment Costs (Publicly Funded) [8]						
Gap Closures						
	Road	**From**	**To**	**Facility Type**	**Distance**	**Cost**
1	Tracy Blvd.	I-205	Existing CII Bike lane	CIII	1.91 miles	$95,000
2	9th St Bypass	10th (11th?) St.	MacArthur	CIII	1.38 miles	$25,000
3	Lincoln Blvd.[9]	Kavanagh Ave	Eleventh St.	CII	1.3 miles	$65,000
4	Corral Hollow Rd	Lowell	West Valley Mall	CII	.5 miles	$100,000
5	Grant Line Rd.	Lincoln	Tracy Blvd.	CII	0.45 miles	$135,000
6	Grant Line Rd.	Parker	Existing CII	CII	0.73 miles	$220,000
7	Grant Line Rd.	Naglee Rd.	Toste Rd.	CII	0.3 miles	$20,000
8	Holly Dr.	I-205	11th St.	CII	2.0 miles	$10,000
9	Mt. Diablo Ave.	Tracy	Central Ave	CII	0.5 miles	$25,000
10	Schulte Rd.	Central Ave.	MacArthur Dr.	CII	0.55 miles	$25,000
11	Linne Road	Corral Hollow Rd	MacArthur Dr.	CII	2.0 miles	$500,000
Class I Trails						
	Corridor (direction of rail/trail)	**From**	**To**	**Facility Type**	**Distance**	**Cost**
1	Corral Hollow Road	11th St.	Existing CI	CI	0.18 miles	$50,000
2	Rail Path (SW/NE)	Corral Hollow Rd	Central Ave.	CI	3.0 miles	$1,500,000
3	Rail Path (NW/SE)	Corral Hollow Rd	Tracy Blvd.	CI	1.5 miles	$750,000
4	SW/NE	6th Ave	Existing CI along MacArthur	CI	0.9 miles	$450,000
5	N/S Spur Line	Bowtie	West Side Irrigation Canal	CI	1.1 miles	$550,000
6	West Side Irrigation Canal Bicycle Path	Lammers Rd.	Schulte Rd.	CI	4 miles	$2,500,000
7	West Valley Mall Connector	Corral Hollow Rd.	Naglee Road	CI	1.1 miles	$750,000

[8] Cost estimates do not include right-of-way acquisition.
[9] Improvements are part of a 'Road Diet' plan described on page 46.

Table 6: Programs and Maintenance			
	Description	**Cost**	**Notes**
1	Class I Maintenance	$8,500/mi	
2	Class II Maintenance	$2,000/mi	
3	Children's Education		
	Salary	$1,300/yr	Based on 14 schools, 2 hours per school.
	Materials	$500/yr	Literature, and other supplies
4	Bicycle Map Production	$14,200	Currently under contract
5	Bicycle Map Printing	$10,000	Estimate for 15,000 maps
6	Tracy Website Development	$500	Staff time
7	Public Service Announcements	$500	Staff time
8	Safe Routes to School	Unknown	Cost varies depending on participation
9	Bicycle Fairs and Races	Unknown	Varies depending on external interest
10	Bike-to-Work activities	$1,000	Staff time and promotional activities
11	Workplace Bicycle Facilities	$2,000/yr	Purchase and installation of bicycle racks

Cost estimates are provided in the following chart. Although the cost estimates are based on actual costs experienced in various California communities, more detailed cost estimates should be developed after preliminary engineering.

Table 7: Conceptual Unit Cost Estimates for Bikeway Construction[10]	
Facility Type	**Cost per mile***
Class III Bike Route	
signing only	$1,000
signing plus minor roadway improvement	$40,000
signing plus moderate roadway improvement	$150,000
signing plus major roadway improvement	$300,000
Class II Bike Lane	
signing and striping only	$5,000
signing and striping plus minor roadway improvement	$50,000
signing and striping plus moderate roadway improvement	$300,000
signing and striping plus major roadway improvement	$500,000
Class I Bike Path	
construct asphalt path on graded right-of-way with drainage and new sub-base	$500,000
construct asphalt path on un-graded right-of-way with drainage and new sub-base	$1,000,000

*Estimates are based on 2002 dollars

*Does not include right-of-way

[10] Source: "Unincorporated San Joaquin County Bikeway Plan", San Joaquin Dept. of Public Works, July 2002.

5.2 Funding

There are a variety of potential funding sources including local, state, regional, federal funding programs and developer fees that can be used to construct the proposed bicycle and pedestrian improvements. Many of the federal, state, and regional programs are competitive, and involve the completion of extensive applications with clear documentation of the project need, costs, and benefits. Local funding for bicycle projects typically comes from Transportation Development Act (TDA) funding, which is prorated to each community based on gasoline taxes. Funding for many of the programs would need to be funded either with TDA, general fund (staff time), or possibly private grants.

Local sales taxes, fees, and permits may be implemented and volunteer programs may substantially reduce the cost of implementing some of the proposed pathways. Use of groups such as the California Conservation Corp (who offer low cost assistance) may be effective at reducing project costs. Local schools or community groups may use the bikeway or pedestrian project as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right of way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations 'adopt' a bikeway and help construct and maintain the facility.

Other opportunities for implementation will appear over time that may be used to implement the system.

Table 8: Summary of Funding Programs

Funding Program	Description	Granting Source	When Available	Capital Improvements	Education /Training	Facilities Maintenance / Operations	Projects Previously Funded
Transportation Community and System Preservation and Pilot Program	Funds traffic calming measures and other transit projects that attempt to reduce the need for future investments.	U.S. DOT	Fall of each year				Escalon High School Linkage Project
Federal Demonstration Projects	Funds transportation projects that Congress deems are of special importance.	Congress	No Pre-set schedule				Route 99/120 interchange, Altamont Commuter Express Service
Hazard Elimination Safety Program	Funds highway and roadway safety improvement projects	Caltrans	Allocations made during Fall/Winter of Even Years				Various Projects
Safe Routes to School Account	City and county projects to improve safety for children around school zones. 10% Local match required. $450,000 max.	Caltrans	Funds allocated annually (applications released February/ March)				None
Bicycle Transportation Account	City and county projects that improve safety and convenience for bicycle commuters	Caltrans	Funds allocated annually				Various Projects
Interregional Improvement Program	Funds interregional improvement of people via projects.	California Transportation Commission (CTC)	Allocations made every two years during the Fall				I-205 Widening, Route 99 Widening (Crosstown freeway to Hammer Lane)
Environmental Enhancement & Mitigation Program	Environmental Enhancement and mitigation projects that exceed current mitigation requirements for transportation projects.	California Transportation Commission (CTC)	Allocations made annually every Fall				Habitat Preservation for Kit Fox and Swainson's Hawk

Table 9: Summary of Funding Programs (Continued)

Regional Surface Transportation Program	Federal-aid highway projects, transit capital projects, intracity and intercity bus terminal, public road/bridge projects. 20% non-federal match required.	SJCOG	SJCOG issues cycle every 3 years, next cycle 2006.				Downtown Transit Center, I-5 Ben Holt Interchange Project, March Lane / Union Pacific Railroad Underpass Project.
Congestion Mitigation & Air Quality Improvement Program (CMAQ)	Transportation projects that reduce emissions and improve air quality in non attainment & maintenance areas. 20% non-federal match required.	SJCOG	SJCOG issues cycle every 4 years, next cycle 2008.				Purchase of 8 buses, Operating Assistance for Altamont Commuter Express Service
Transportation Enhancements	Aesthetic and environmental improvement projects (Bicycle, pedestrian, transit, landscaping) linked to transportation. 20% non-federal match required.	SJCOG	SJCOG issues cycle every 3 years, next cycle 2006.				Charter Way Beautification Project, Lodi Multimodal Station
Transportation Development Act (TDA) Article 3	Provides funding for bicycle and pedestrian facilities and for safety programs	SJCOG	Allocations made annually every Fall				Lower Sacramento Road Bicycle Lanes
Regional Improvement Program	Funds regional capital improvement projects (ex. Freeway interchanges, rail extensions, road rehabilitation	SJCOG	Allocations made every two years during the Fall				Route 99/Arch Road Interchange, Route 99/Jack Tone Interchange, Route 12 Passing lanes on Bouldin Island.
San Joaquin County Measure K	Provides funds for highways, local streets, new bicycle facilities, and other projects	SJCOG	No Pre-set schedule				Route 99/ Kettleman Interchange Project, I-205 widening in Tracy, Tidewater Bikeway, I-5/Marsh Lane Interchange

Federal

TEA-21 and future transportation bill funding is administered through the state (Caltrans or Resources Agency) and regional governments (San Joaquin Council of Governments). Most, but not all, of the funding programs are transportation versus recreational oriented, with an emphasis on (a) reducing auto trips and (b) providing an inter-modal connection. Funding criteria often includes completion and adoption of a bicycle master plan, quantification of the costs and benefits of the system (such as saved vehicle trips and reduced air pollution), proof of public involvement and support, CEQA compliance, and commitment of some local resources. In most cases, TEA-21 provides matching grants of 80 to 90 percent--but prefers higher percentages of local matching funds.

With an active and effective regional agency such as the San Joaquin Council of Governments, Tracy should be in a good position to secure its fair share of TEA-21 funding. It can be helpful to get the local state assemblyman and senator briefed on these projects and lobbying Caltrans and the California Transportation Commission.

State

TDA Article III (SB 821)

Transportation Development Act (TDA) Article III funds are state block grants awarded annually to local jurisdictions for bicycle and pedestrian projects in California. These funds originate from the state gasoline tax and are distributed to local jurisdictions based on population.

AB 434

AB 434 funds are available for clean air transportation projects, including bicycle projects, in California.

Bicycle Transportation Account

The State Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. In FY 2002/2003 the Bicycle Transportation Account contributed nearly $7.2 million to state bicycling projects. Since the inception of the BTA, no funding has been awarded within San Joaquin County. Tracy may apply for these funds through the Caltrans Office of Bicycle Facilities.

Safe Routes to School (AB 1475)

The Safe Routes to School program is a newly created state program using funds from the Hazard Elimination Safety program from TEA-21. This was a new program in 2000 and is meant to improve school commute routes by eliminating barriers to bicycle and

pedestrian travel through rehabilitation, new projects, and traffic calming. A local match of 11.5% is required for this competitive program, which will allocate $18 million annually in California. Planning grants are not available through this program.

Regional

Measure K

In 1990, the voters of San Joaquin County passed the Measure K sales tax initiative. The Measure calls for a ½ cent countywide sales tax to be collected for 20 years, to pay for much-needed transportation projects throughout the county. Approximately $20 million is collected annually, of which about $250,000 is directed towards bicycle projects in the County, and is distributed to jurisdictions by population.

Local

New Construction

Future road widening and construction projects are one means of providing bike lanes. To ensure that roadway construction projects provide bike lanes where needed, it is important that an effective review process is in place to ensure that new roads meet the standards and guidelines presented in this Transportation plan.

Impact Fees

Another potential local source of funding are developer impact fees, typically ties to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site bikeway improvements that will encourage residents to bicycle rather than drive. In-lieu parking fees may be used to help construct new or improved bicycle parking. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

Mello Roos

Bike paths, lanes, and pedestrian facilities can be funded as part of a local assessment or benefit district. Defining the boundaries of the benefit district may be difficult unless the facility is part of a larger parks and recreation or public infrastructure program with broad community benefits and support.

5.3 Financing

Proposed improvements and programs to be developed over the next 20 years in Tracy have been analyzed to determine the annual financing requirements, and to allow the City to budget its resources and target funding applications. It is important to note that the majority of funding for bicycle projects is expected to be derived from federal sources, TEA-21. These funding sources are extremely competitive, and require a combination of sound applications, local support, and lobbying on the regional and state level.

Annually, the City of Tracy has historically invested approximately $15,000 in bicycle facilities, in the form of bike lane and bike path construction and maintenance. Often these items are included in larger construction and maintenance projects, and specific line item accounts are not kept. Therefore, the annual expenditure figure is an estimate based on the City's Public Works Department review.