3.0 Needs Analysis

On August 15, 2006, a public workshop was held in Folsom to help identify the bicycling needs of residents. Attendees were asked to comment and show on a large-scale map of the City their current riding habits and their views on bicycling opportunities and constraints in Folsom. Results of the workshop, public surveys, and subsequent correspondence and field review are presented below:

- Key bicycling routes are fragmented.
- High auto speeds are a danger to cyclists on major arterial streets.
- Movement along Blue Ravine Road including turning and travel through intersections is especially difficult.
- There is a high incidence of debris on road shoulders and in bike lanes.
- Traffic signals either are not equipped to detect bicycles, and/or green light lengths do not allow safe travel through intersections.
- Grade separations are preferred where trails intersect major streets.
- The Humbug-Willow Creek Trail has a few gaps that need to be completed to improve route connectivity.
- Cyclists would like to regain access to the Folsom Dam, if a new bridge is constructed across Lake Natoma.
- Both commuter and recreation cyclists would like a comprehensive map detailing facilities available for use.
- Cyclists would like to see the trails around Lake Natoma connected.
- Conditions on East Bidwell Street are difficult to negotiate. The East Bidwell/Scott Road/Old Placerville intersection is especially challenging to cyclists.
- There is a lack of adequate short or long-term secure bicycle parking.
- The freeway interchanges are a major barrier for cyclist to negotiate. There are few alternatives to crossing the freeway by bicycle.
- Utility trenching routinely degrade pavement in on-street bike lanes.

A survey of bicycle use was also conducted with the following results:

Bicycle Survey Results

1. Bicycle ownership:	0 bicycles	0%
	1	0%
	2	27%
	3+	73%
2. Type of Bicycle:	BMX	8%
	Mountain Bike	38%
	Road Bike	31%
	Cruiser	23%
3. Bicycling levels:	1x or more per day	36%
	1-6x/week	55%
	1-3x per month	8%
	Very rarely	0%
	Never	0%
4. Trip purpose:	Recreation	63%
	Shopping	18%
	Work	27%
	School	0%

5. Reason why you don't ride or ride more often:

Safety	36%
Lack of bike parking	22%
Weather/darkness	18%
Need access to car	12%
Lack of places to ride	12%

6. Top constraints:

Debris in bike lanes	14%
Noncontiguous routes	14%
Lack of enforcement on trails	9%
Safety/Excessive auto speeds	9%
Intersections – safety	9%
Blue Ravine Rd. corridor	6%
Intersection - detection loops	6%
Signals timing too short	6%
Folsom Blvd under HW-50	6%
Security of bike trails	3%
Conditions on E. Bidwell	3%
Finish Humbug-Willow Creek	3%
Improve trail access/egress	3%
Lake Natoma Trail to Sutter St.	3%
Lack of bike parking	3%
Access to Folsom Dam	3%
Natoma St./Green Valley Rd.	3%

Educational Signage (nature) 3%

* We did not receive any surveys from school age children (ages 7-12). This explains why school trip purpose came in at zero. Future surveys will be distributed to all the schools.

3.1 Commuter and Recreational Needs

Key general observations about bicycling needs in Folsom include:

- **Bicyclists are typically separated between experienced and casual riders.** The U.S. Department of Transportation identifies thresholds of traffic volumes, speeds, and curb lanes where less experienced bicyclists begin to feel uncomfortable. For example, on an arterial with traffic moving between 30 and 40 miles per hour, less experienced bicyclists require bike lanes while more experienced bicyclists require a 14 or 15 foot wide curb lane.

- **Casual riders include those who feel less comfortable negotiating traffic.** Casual riders such as children and the elderly may have difficulty gauging traffic, responding to changing conditions, or moving rapidly enough to clear intersections. Other bicyclists, experienced or not, may be willing to sacrifice time by avoiding heavily traveled arterials and using quieter side streets. In some cases, casual riders may perceive side streets (or sidewalks) as being safer alternatives than major through routes, when in fact they may be less safe. Other common attributes of the casual bicyclist include shorter trip distances than the experienced rider and unfamiliarity with many of the rules of the road.

  The casual bicyclist will benefit from route markers, bike lanes, wider curb lanes, and educational programs. Casual bicyclists may also benefit from marked routes which lead to parks, museums, historic districts, and other visitor destinations.

- **Experienced bicyclists include those who prefer the most direct, through route between origin and destination, and a preference for riding within or near the travel lanes.** Experienced bicyclists negotiate streets in much the same manner as motor vehicles, merging across traffic to make left turns, and avoiding bike lanes and shoulders that contain gravel and glass. The experienced bicyclist will benefit from wider curb lanes and loop detectors at signals. The experienced bicyclist who is primarily interested in exercise will benefit from loop routes that lead back to the point of origin.

- **Bicycles themselves range in cost from about $350 to over $2,000 for adult models.**

The most popular bicycle type today is the hybrid mountain bike or BMX. These relatively light-weight bicycles feature wider knobby tires that can handle both on-road and off-road conditions, from 10 to 27 gears, and up-right handlebars. Advanced versions have features such as front and rear shocks to help steady the rider on rough terrain. The 10-speeds of years past has evolved into a sophisticated ultra-light 'road bicycle' that is used primarily by the serious long distance adult bicyclists. These expensive machines feature very narrow tires, which are more susceptible to flats and blow-outs from debris on the roadway.

- **Who rides bicycles?** While the majority of Americans (and Folsom residents) own bicycles, most of these people are recreational riders who ride relatively infrequently. School children between the ages of about 7 and 12 make up a large percentage of the bicycle riders today, riding to school, parks, or other local destinations on a daily basis (weather permitting). The serious adult road bicyclist who may compete in races, 'centuries' (100 mile tours) and/or ride for exercise make up a small but important segment of bikeway users, along with serious off-road mountain bicyclists who enjoy riding on trails and dirt roads. The single biggest adult group of bicyclists in Folsom is the intermittent recreational rider who generally prefers to ride on pathways or quiet side streets.

Recreational Needs

The needs of recreational bicyclists must be understood prior to developing a system or set of improvements. While it is not possible to serve every neighborhood and every need, a good plan will integrate recreational needs to the extent possible. The following points summarize recreational needs:

- Recreational bicycling typically falls in to one of three categories: exercise, non-work destination such as a park or shopping, or touring.

- Recreational users range from adults to children to senior citizens. Each group has their own abilities, interests, and needs.

- Directness of route is typically less important than routes with less traffic conflicts, visual interest, shade, protection from wind, moderate gradients, or other features.

- People exercising or touring often (though not always) prefer a loop route rather than having to backtrack.

Commuter Needs

Commuter bicyclists range from employees who ride occasionally to work to a child who rides to school. Millions of dollars have been spent attempting to increase the number of people who ride to work or school, with moderate success. Bicycling is most effective for shorter commutes, which runs counter to our land use and transportation policies which encourage people to live further and further from where they work. Access to transit helps extend the commute range of cyclists, but transit systems also face an increasingly dispersed live-work pattern, which is difficult to serve. Despite these facts, Folsom has a great potential to increase the number of people who ride to work or school because of a) the small size of the city; b) several large employers within or near the City; c) a favorable topography and climate; d) a high percentage of work trips that are less than 15 minutes; and e) the addition of up to three new light rail stations.

Key commuter needs are summarized below.

- Commuter walking or bicycling typically fall in to one of two categories: adult employees and younger students.
- Commuter trips range from several blocks to one or more miles.
- Commuters typically seek the most direct and fastest route available, with regular adult commuters often preferring to ride on arterials rather than side streets.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles.
- Places to safely store bicycles, to shower, and lockers for storage are of paramount importance to all bicycle commuters.
- Major commuter concerns include changes in weather (rain), riding in darkness, personal safety, and security.
- Rather than be directed to side streets, most commuting cyclists would prefer to be given bike lanes or wider curb lanes on direct routes.
- Unprotected intersections in general are the primary concerns of all bicycle commuters.
- Many younger students use sidewalks for riding to schools or parks, which is acceptable in areas where pedestrian volumes are low and driveway visibility is high.

Where on-street parking and/or landscaping obscures visibility, sidewalk riders may be exposed to a higher incidence of accidents. Older students who consistently ride at speeds over 10 m.p.h. should be directed to riding on-street wherever possible.

- Students riding the wrong-way on-street are common and account for many recorded accidents, pointing to the need for education and enforcement.

3.2 Needs Analysis

The purpose of reviewing the needs of recreational and commuter bicyclists is twofold: 1.) it is instrumental when planning a system which must serve both user groups, and 2.) it is useful when attempting to quantify future usage and benefits to justify expenditures of resources. According to a May 1991 Lou Harris Poll, it was reported that *"...nearly 3 million adults--about one in 60--already commute by bike. This number could rise to 35 million if more bicycle friendly transportation systems existed."* In short, there is a large reservoir of potential bicyclists in Folsom who don't ride (or ride more often) simply because they do not feel comfortable using the existing street system and/or don't have appropriate bicycle facilities at their destination.

A common term used in analyzing the demand or need for bicycle or pedestrian facilities is 'mode split.' Mode split refers to the choice of transportation a person selects to move from home to work, to shopping, or to other destinations. One major objective of any bicycle improvement is to increase the 'split' or percentage of people who choose to ride rather than drive or be driven. Every saved vehicle trip or vehicle mile represents quantifiable reductions in air pollution. A summary of a needs analysis is presented below.

Traffic and Air Quality Benefits

A key goal of the Bicycle Master Plan is to maximize the number of bicycle commuters in order to support large transportation goals such as minimizing traffic congestion and air pollution. In order to set the framework for these benefits, national statistics and policies are used.

- Currently, nearly 3 million adults (about 1 in 60) commute by bicycle. This number could rise to 35 million if adequate facilities were provided (according to a 1991 Lou Harris Poll).

- The latent 'need" for bicycle and pedestrian facilities, versus actual bicyclists and pedestrians, is difficult to quantify; we must rely on evaluation of comparable communities to determine potential usage.

- Mode split refers to the choice of transportation people make whether for work or non-work trips. Currently, the average household in the U.S. generates about 10 vehicle trips per day. Work trips account for less than 30% of these trips on average.

- According to the 2000 U.S. census just less than .6 % of all employed Folsom residents commute primarily by bicycle. This does not include those who ride less than 50% of the time. Thus, the bicycle commute rate in Folsom is considerably lower than the rate of California and the United States as a whole. This figure is somewhat deceiving because it does not include students in Folsom, nor does it account for the rapid growth experienced since 2000.

The bicycle/walk commute mode share for Sacramento County employees as a whole is 3.7% (source: SACOG, 1997). The distances between residence and workplace, types of employment, climate, and available bicycle facilities, all influence these commute shares. As Folsom grows, additional local employment opportunities become available and better bicycle connections to Sacramento are provided, bicycle mode share in Folsom can be expected to increase to the state and national average.

The U.S. Department of Transportation, in their publication entitled "National Walking and Bicycling Study" (1995), sets as a national goal the doubling of current bicycling mode shares by the year 2010, assuming that a comprehensive bikeways system is in place. Since the national bicycle mode share is about 1%, this will translate into a bicycle commute mode share of 2% in Folsom or about 230 commuters. Add to this number commuters who bicycle occasionally and students at local schools, and the average number of daily bicyclists in Folsom increases to an estimated 850 bicycle commuters by 2010. These bicyclists will be saving an estimated 400 vehicle trips per day, 212,000 trips per year, and 318,000 vehicle miles per year. The combined benefit of these future bicycle commuters over the next 20 years is a reduction of about 7,632 lbs. of PM10, 20,670 lbs. of Nox, and 29,892 lbs. of ROG

Table 6
Demographics and Transportation & Air Quality Benefits

Population (2007)	58,696
Land Area (estimated)	12,902 acres
Estimated Folsom Residents who Bicycle for Pleasure	27,000

Current Bicycle Commute Mode Share (1997)	34
Projected Bicycle Commute Mode Share	276
School-related bicycle commuters	681
Total projected bicycle commuters	957
Reduced Vehicle Trips/Year	212,000
Reduced Vehicle Miles/Year	318,000
Reduced PM10/lbs./Year	7,632
Reduced NoX/lbs./Year	20,670
Reduced ROG/lbs./Year	29,892

Bicycling is one of the most popular forms of recreational activity in the United States, with 46% of Americans bicycling for pleasure. These figures indicate that about 27,000 residents over the age of 10 in Folsom do or would like to bicycle for pleasure. If nothing else, this indicates a latent demand for facilities and a potent constituency to push for better facilities.