



HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS
Regional Transportation Planning Agency
Humboldt County Local Transportation Authority
Service Authority for Freeway Emergencies
611 I Street, Suite B
Eureka, CA 95501
(707) 444-8208
www.hcaog.net

Humboldt Regional Bicycle Plan Update

**The comment period for the 2017 Humboldt Regional Bicycle Plan is now open through July 31, 2017.
The plan will be adopted Fall 2017.**

Check back with us on our website for updates throughout the year.

The purpose of the Humboldt Regional Bicycle Plan (Bike Plan) is to advance the development of a fully integrated active transportation (bicycling, walking, skating, and transit) network. The Bike Plan takes measurable steps toward the goal of improving every citizen's quality of life, creating a more sustainable urban, rural and natural environment, and reducing traffic congestion, vehicle exhaust emissions, noise, and fuel consumption. This is increasingly important as the County endeavors to grow its local economy, and support a growing population's demands for new housing, businesses, and roads in undeveloped areas. Developing an attractive and inviting regional bicycle system is a key element in preserving Humboldt County as a place where people want to live, learn, work, and visit.

Your opinion matters!

- The draft Bicycle Plan is available online at www.hcaog.net under "Projects"
- To obtain a copy, call or visit HCAOG's office at 611 I Street, Suite B, Eureka
- If you have any questions, please call (707) 444-8208

Please forward comments by July 31, 2017 to Oona Smith, Senior Planner, Humboldt County Association of Governments, 611 I Street, Suite B, Eureka CA 95501, oona.smith@hcaog.net.

HCAOG is a Joint Powers Agency comprised of the seven incorporated cities (Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, Trinidad), and the County of Humboldt. It is the designated Regional Transportation Planning Agency (RTPA), largely responsible for programming highway and road improvements, public transportation resources, the roadside call box program, and active transportation education. HCAOG is complemented by several committees, which include representatives from tribal governments, social service and transit organizations, education institutions, as well as stakeholders from the general public.



Regional Bicycle Plan Update

Humboldt County Association of Governments - June 2017



D R A F T
(maps not included)

A regional plan to make bicycling throughout Humboldt County a safe, convenient, and practical means of transportation



1. PLAN PURPOSE

The Fixing America’s Surface Transportation (FAST) Act authorizes surface transportation funding for federal fiscal years 2016–2020.¹ The FAST Act does not require an agency to have an adopted bike plan. Federal law does require long-range transportation plans; HCAOG, as a nonmetropolitan transportation planning agency, must have a Regional Transportation Plan (RTP). Federal guidance only specifies that the RTP should consider how to “increase the safety...and security of the transportation system for motorized and non-motorized users;...”² In search of more detail, we can borrow from the federal guidance for metropolitan transportation plans (Sec. 450.324(b)): “The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities),” but it is still broad.

A person on a bicycle:
“No other living thing
can expend so little
energy for so much
self-powered travel.”
– *Cycling Science*

At the State level, neither has the California Department of Transportation set rules requiring bike plans for California Active Transportation Program (ATP) funds. Even so, HCAOG is updating the *Regional Bicycle Plan* from 2012 because we believe it is still valuable to do so. As HCAOG’s RTP, *VROOM*, also attests, increasing the bike mode share (and all active transportation) is one of the region’s driving transportation goals.

This Humboldt Regional Bicycle Plan is foremost a regional plan, intended primarily to facilitate projects and programs that will help build a bikeway system that makes bicycling throughout Humboldt County a safe, convenient, and practical means of transportation for all residents and visitors. Priority infrastructure projects will link adjoining jurisdictions’ bicycle routes and thereby build a regional bicycle network. The Bike Plan’s recommended projects and programs have the potential to considerably increase the number of bicycle trips in Humboldt County.

SERVING A LARGER VISION

The purpose of the *Humboldt Regional Bicycle Plan* is to advance the development of a fully integrated active transportation (bicycling, walking, skating, and transit) network. Some



¹ Signed into law by President Obama on December 4, 2015.

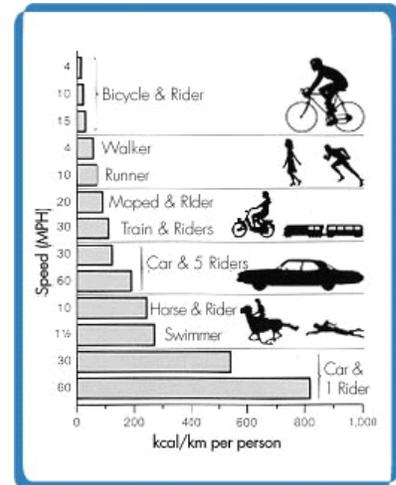
² 23 CFR 450.202 (published in the May 27, 2016 Federal Register.)

Humboldt REGIONAL BIKE PLAN - Update 2017
DRAFT for Public Review & Comment

of the important benefits of building for “active travel” are: to create safer, more livable communities; to promote physical activity and health; and to build a low-carbon economy. Bicycling is integral to active transportation, and a well-connected, user-friendly, safe, and convenient bicycling network is an important component for livable communities. By livable communities we mean places that are safe and comfortable to live in, that invite people to stroll, shop, recreate, socialize, and share public spaces with others, that provide people opportunities to prosper on a scale that is fortifying and sustainable for the whole community.

The *Humboldt Regional Bicycle Plan* (Bike Plan) takes measurable steps toward the goal of improving every citizen’s quality of life, creating a more sustainable urban, rural and natural environment, and reducing traffic congestion, vehicle exhaust emissions, noise, and fuel consumption. This is increasingly important as the County endeavors to grow its local economy, and support a growing population’s demands for new housing, businesses, and roads in undeveloped areas. Developing an attractive and inviting regional bicycle system is a key element in preserving Humboldt County as a place where people want to live, learn, work, and visit.

It has long been noted that the bicycle is the most efficient mode of human travel. For the energy input, bicycling is five times more efficient than walking, and 56 times more efficient than driving. On 100 calories, a person can go three miles on a bike, but a car can only go 280 feet (not even making it to the end zone of a football field!).³



About 40 percent of all U.S. trips are shorter than two miles.⁴ An able-bodied person can bike one mile, unhurriedly, in five to six minutes. For trips ranging from one to three miles, bicycling is overall the most efficient, economic, and sustainable mode of travel. And in many circumstances, urban or rural, short trips by bike can be the most convenient. But conditions have to be right. First and foremost, the landscape has to be built with bicycling (and walking) in mind. That is, land uses, roadways, and other infrastructure have to be designed to weave active transportation into the fabric of the transportation network. Having an up-to-date bicycle plan works towards this.

BIKE PLAN OUTCOMES

The presence of complete networks is fundamental to achieving...improved levels of safety, activity, and equity.
– FHWA Strategic Agenda, 2016

By developing and implementing the *Humboldt Regional Bicycle Plan* (Bike Plan), HCAOG endeavors to

go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. Transportation programs and facilities should accommodate people of all ages and

³ Human Power, www.exploratorium.edu/cycling/humanpower1.html

⁴ 2009 National Household Travel Survey (www.pedbikeinfo.org/data/factsheet_general.cfm).

Humboldt REGIONAL BIKE PLAN - Update 2017

DRAFT for Public Review & Comment

abilities, including people too young to drive, people who cannot drive, and people who choose not to drive. (U.S. DOT 2010).

The U.S. DOT articulates some of positive outcomes of active transportation: "...the numerous individual and community benefits that walking and bicycling provide—including health, safety, environmental, transportation, and quality of life" (U.S. DOT 2010). We expect many benefits to stem from the implementation of the Bike Plan over time:

❖ REACHING MODE-SHARE GOALS

Increasing active transportation and reducing per capita motorized travel, are national and state goals. The national goal is to "Increase," from a 20 percent share in 2009, "the percentage of short trips represented by bicycling and walking to 30 percent by the year 2025" (FHWA 2016b). The FHWA defines short bicycle trips as five miles or less, and short walking trips as one mile or less.

California has set a goal of tripling bicycle trips and doubling walking and transit trips by the year 2020 (from California's 2012 baseline levels) (Caltrans 2015). California's active transportation goals play a part in also meeting the State's goals to reduce greenhouse gas emissions to 40% below 1990 levels by 2030 (per Governor Brown's Executive Order B-30-15) and to 80% below 1990 levels by the year 2050 (per AB 32).

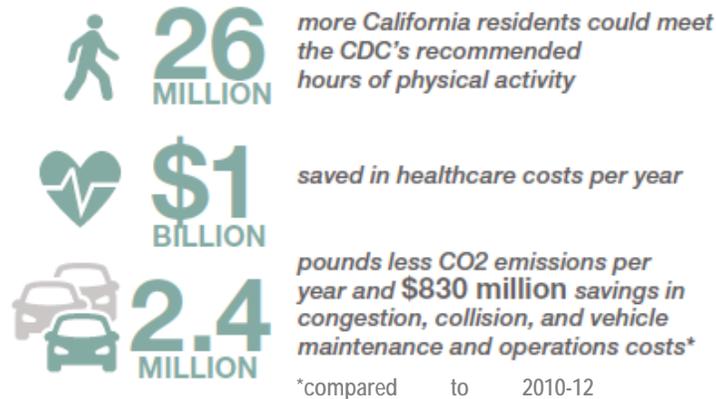
By identifying and providing needed facilities and services, the Bike Plan will help meet the existing demand for added and enhanced bicycle routes and facilities around the county. Current riders want more facilities and "latent riders" would ride if they had more access to comfortable bike routes, safety education, encouragement, and opportunities to gain riding experience.

Reaching the goals of the Bike Plan will also help build a new era of mutual respect between motorists and people on bicycle or on foot. Bike Plan objectives include outreach efforts to educate the general public on the rights of bicyclists, and on the importance of sharing the road and deferring to bicyclists when needed; similarly, efforts will call on bicyclists to police themselves and spread the word on the importance of obeying rules of the road.



Investment in active transportation
provides many benefits...

**IF CALIFORNIA MEETS ITS 2020 TARGETS
FOR WALKING AND BICYCLING**



Source: Caltrans

❖ **SAFETY**

Better bicycling networks save lives. Bicycle programs reduce the injury and fatality rate for bicyclists through design standards and guidelines, education, and enforcement. A well-connected bicycle transportation network reduces the public's fear of traveling by bicycle. Studies have shown that when bicycling rates increase, injury rates fall:

The principle of "safety in numbers" has been observed widely. Studies have shown that bicycling safety is greater in countries and cities with higher levels of bicycling, and that bicycling injury rates fall as levels of bicycling increase.⁵

and

A past belief has been that increases in numbers of cyclists will lead to proportionate increases in numbers of accidents. One study that evaluated this assumption in several population data sets (from California, Denmark, Europe, the United Kingdom, and the Netherlands) showed that there was "safety in numbers"; that is, there was an inverse relationship between an increasing number of cyclists and the likelihood of being struck by a motorist.⁶

❖ **HEALTH**

Implementing the Bike Plan will improve public health by providing more enticing opportunities for walking and bicycling, thereby promoting more active lifestyles. This will also help further national public health goals:

"Advancing the development of safe, accessible, and convenient bicycling and walking networks plays a fundamental role in achieving national public health goals to reduce illnesses related to sedentary lifestyles, as well as national policies to foster equitable access to Ladders of Opportunity for everyone" (FHWA 2016b).

⁵ Active Living Research, 2016.

⁶ P.L. Jacobsen, 2003.

❖ SAFE ROUTES TO SCHOOL & TRANSIT

The Bike Plan promotes and supports Safe Routes to School and Safe Routes to Transit by implementing infrastructure projects and non-infrastructure programs that employ the “5 E’s”—engineering, education, encouragement, enforcement, and equity. “Areas with more amenities for biking and walking, such as sidewalks, bicycle lanes, or paths are associated with more active commuting to school.”⁷

❖ SUSTAINABLE LAND USE & ENVIRONMENTAL QUALITY

Multi-modal design, such as complete streets, builds people-friendly streets, paths, and trails that are accessible to everyone, supporting sustainable community development. Land uses planned and developed at a human scale accommodate walking and bicycling for short trips. Increasing rates of non-motorized travel means less: traffic congestion, vehicle exhaust emissions, noise, and energy consumption, which helps preserve the environmental quality of Humboldt County.

❖ EQUITY

An equitable transportation system is one that provides affordable and reliable mobility to jobs, services, and social opportunities for all. Equity focuses on providing mobility options to populations that generally have less access to private automobiles, such as people in neighborhoods with high proportions of low-incomes, ethnic minorities, seniors, people with disabilities, people with limited English proficiency, as well as youth. A transportation network serves people more equitably when it has bicycle and pedestrian networks that are well-connected to the broader network, as well as to the transit system.

In 1969, nearly 50% of all children in the U.S. (and nearly 90% of those within a mile of school) walked or biked to school. Today, fewer than 15% do. During the morning commute, driving to school represents 10-14% of traffic on the road.
— www.saferoutespartnership.org/healthy-communities, 2017

Research seeks to determine what factors effectively increase people’s mobility choices. One study found the strongest predictor on increasing bicycle commuting was a higher ratio of bike lanes, “Specifically, they found that for every 1-mile increase in bicycle lanes per square mile, there was a 1% rise in the total number of bicycle commuters” (Dill and Carr cited in Pedroso et al 2016).

PLANNING APPROACH

This *Humboldt Regional Bicycle Plan* is foremost a regional plan, intended primarily to facilitate projects and programs that will help build a bikeway system that makes bicycling throughout Humboldt County a safe, convenient, and practical means of transportation for all residents and visitors. Priority infrastructure projects will link adjoining jurisdictions’ bicycle routes and thereby build a regional bicycle network. The Bike Plan’s recommended projects and programs have the potential to considerably increase the number of bicycle trips in Humboldt County. In Chapter 4, section 4.1 describes the regional priority bicycle projects and programs, which are:

- I. Regional Bicycle Parking Program
- II. Regional Active Transportation Education & Outreach Program

⁷ [ibid.](#)

Humboldt REGIONAL BIKE PLAN - Update 2017
DRAFT for Public Review & Comment

- III. Regional Bicycle Guide & Map
- IV. Humboldt Bay Trail
- V. Regional Bicycle Facility Projects by Jurisdiction

The primary countywide system calls for implementing approximately 515 miles {TBD} of bikeways to connect all cities and unincorporated areas in Humboldt, as well as adjacent counties. The estimated cost is approximately \$27.26 million {TBD} over the Bike Plan's 20-year life (2017/18 to 2037/38). The *Bike Plan* as updated in 2017 recommends implementing five priority regional projects in the short-term (five fiscal years, 2017 through 2021/22).

Overall, this is a long-range plan with a 20-year planning horizon. The projects identified as regional priorities are for securing funding for and/or implementing within the next five years. HCAOG performs an annual progress report to monitor implementation of the Bike Plan.

As part of updating the Bike Plan, HCAOG staff, committees, and board members review the state of the regional bicycle system and reassess system needs as well as opportunities for funding, partnerships, and collaboration. Active input from our local communities helps HCAOG stay informed about what is getting better, what is getting worse, and what the greater bicycle community wants done first. Proposed bicycle projects are then ranked. The top-ranked regional bicycle projects become the Bike Plan's priority projects. During the Bike Plan's five-year planning term, those identified regional priority projects will have priority for potential State and Federal funding sources that are programmed through HCAOG.

The health benefits of active transportation exceed its risks of injury and exposure to air pollution.
— Active Living Research, 2016

In sections 4.2 through 4.10 of Chapter 4, the Bike Plan also identifies projects that HCAOG member and committee entities have prioritized for their respective jurisdictions/governments. Individual agencies have the opportunity to adopt the Bike Plan and pursue financing and project implementation within their respective jurisdictions. HCAOG member agencies will achieve the Bike Plan's goals through individual and combined actions. One of the intended outcomes of the Bike Plan is to improve interagency coordination. Implementing the Bike Plan should facilitate local, State, tribal and other entities to coordinate developing

regional non-motorized transportation facilities, including local links that feed into the regional network. The Bike Plan also recommends to local planners and developers guidelines for bicycle improvements and standards.

The Bike Plan does not diminish any jurisdiction's option or ability to separately develop and approve its own bicycle plan. Any jurisdiction may utilize some or all relevant portions of this Bike Plan for its own bicycle planning and financing. They are also free to adopt and fund local transportation projects that are not included in this Bike Plan.

Lastly, the adopted *Regional Bicycle Plan* helps maximize our regional and local eligibility and readiness for funding opportunities. The Bike Plan reflects proactive planning, coordinating, and prioritizing of projects to build and maintain an integrated, multi-modal transportation network region-wide. A current plan, developed with community input, helps equip HCAOG and its member agencies to compete successfully for State and federal funding.

SUPPORTING PLANS & POLICIES

Throughout Humboldt County, communities have defined goals and set plans for building a stronger bicycle system and becoming more “bicycle-friendly,” both locally and regionally. Below, we summarize the long-range regional, State, and federal policies and plans that support the Bike Plan’s goals and objectives. The Bike Plan is coordinated and consistent with local and regional transportation, air quality, or energy conservation plans. (*Note: For a more comprehensive survey of regional and local plans that support bicycle and pedestrian trails and supporting facilities, refer to the Humboldt County Regional Trails Master Plan (HCAOG, 2010).*)

Note that studies and plans for proposed trails are summarized in Chapter 4.

REGIONAL BIKE PLANNING

Regional Transportation Plan Update (HCAOG, 2017)

The *Regional Transportation Plan: Variety in Rural Options of Mobility (VROOM)* is HCAOG’s long-range plan for developing and maintaining the regional transportation system over the next 20 to 25 years. The “Complete Streets Element,” “Commuter Trails Element,” and “Public Transit Element” identify policies and projects that support bicycle transportation and encourage intermodal transportation connections. Moreover, the *Regional Bicycle Plan* is part of VROOM (incorporated by reference).

Humboldt County Regional Trails Master Plan (HCAOG, 2010)

The *Regional Trails Master Plan* takes a comprehensive approach to planning non-motorized transportation with connectivity between communities. The plan combines all “active transportation” modes that may be served by a regional trail network—bicycle, pedestrian, and equestrian travel—and considers commuting, utilitarian, and recreational trips.

Humboldt People Powered Pathways (RCAA, 2009)

Humboldt People Powered Pathways (HP3) is a vision “to get more people traveling by healthy, environmentally beneficial means... (b)y connecting pedestrian, bicycle and multi-use trail routes and establishing collaborative education and encouragement campaigns.” The HP3 vision was crafted by a coalition of the County of Humboldt, cities, tribes, Caltrans, and community organizations, and the report was produced by the Natural Resource Services Division of RCAA. The HP3 coalition, with the Humboldt County Department of Public Works serving as the lead agency, submitted a proposal for \$50 million in federal transportation funding in 2010 to implement HP3. HP3’s target is to increase non-motorized transportation in Humboldt by at least 10% in seven years.

Regional Pedestrian Needs Assessment Study (HCAOG, 2008)

The study focuses on pedestrian improvements, and identifies several multi-use trails that will serve as local or regional routes that connect to and expand the regional bikeway.

Humboldt Bay Area Bicycle Use Study (1999)

To date, the *Humboldt Bay Area Bicycle Use Study* has been the largest undertaking to collect bicycle data in the Humboldt Bay Area. Over the course of one year, volunteers collected 791 hours of data on bicycle ridership in Eureka, Arcata, and McKinleyville, including the Pacific Coast Bike Route, the Hammond Trail, and other popular bike routes.

General Plans & Community Plans

In addition to the plans above, which expressly address bicycling or active transportation, there are more general plans that include policies and/or projects for bicycling. For instance, in all the cities' and in the County's General Plans, such policies included in the "Circulation Element" (or "Transportation Element") chapter. Similarly, the *McKinleyville Community Plan (2002)* includes a "Circulation Plan" that includes bicycle policies such as design standards for new roadway and intersections to incorporate bikeways; and favoring funding priorities for safe pedestrian and bicycle access to schools. The *McKinleyville Parks and Recreation Plan*, (prepared by McKinleyville Community Services District in 2008) has policies to support non-motorized transportation facilities, and proposes trail facilities for trails under their jurisdiction as well as the County of Humboldt's. The *Willow Creek Community Action Plan (2003)* identifies building bicycle trails as one strategy to increase tourism in the area. The *Manila Community Transportation Plan (Manila CSD, Phase I (2003); Phase II (2005))* documents the community's vision for improving bicycle safety and access. Two strategies identified were to place "Share the Road" signs along Highway 255, and to develop a multi-use trail utilizing the NCRA rail corridor through Manila.

Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems.

– U.S. DOT Policy Statement on Bicycle & Pedestrian Accommodation, 2010

Particulate Matter (PM10) Attainment Plan (NCUAQMD, 1995)

The North Coast Unified Air Quality Management District—encompassing Humboldt, Del Norte, and Trinity Counties—is classified as a non-attainment area for particulate matter under 10 microns (PM10). Under the California Clean Air Act, air quality districts must develop control measures to achieve and maintain ambient air quality standards. NCUAQMD has identified control measures such as programs to accommodate pedestrian and bicycle use and land use development practices that encourage walking to more destinations and reducing automobile use.

NEIGHBORING COUNTIES

The *Del Norte County and Crescent City Bicycle Facilities Plan Update (2010)* and the *Mendocino County Regional Bikeway Plan (2012)* both identify only the Pacific Coast Bike Route on Highway 101 for connecting to Humboldt County by bicycle. The *Trinity County Bikeways Master Plan (2015)* proposes Class III bicycle routes on Highway 299, Highway 36, and Zenia Bluff Road to connect Humboldt County and Trinity County. The Trinity County plan also recommends "Share the Road" signage along these routes to increase awareness of and respect for bicyclists.

FEDERAL AND STATE PLANS & POLICIES

Policies on Greenhouse Gas Emissions

California was the first state in the nation to adopt an enforceable statewide emission target, with the passage of the **Global Warming Solutions Act of 2006** (California Assembly Bill 32) (since then at least 20 other states have passed targets and goals). AB 32 requires California to reduce greenhouse gas emissions to 1990 levels by the year 2020, and to 20% of 1990 levels by the year 2050. The California Air Resources Board (CARB) is charged with creating the mechanisms for reaching this goal. Improving bicycling transportation infrastructure is a key strategy to reducing the State's greenhouse gas emissions.

The CARB's "Climate Change Scoping Plan" (2008) states,

The key to addressing the (vehicle miles traveled) challenge is providing people with more choices through diversified land use patterns, greater access to alternative forms of transportation including transit, biking and walking, and promoting development patterns where people can live, work and play without having to drive great distances.

California's **Sustainable Communities and Climate Protection Act of 2008** (Senate Bill 375) is part of AB 32's implementation strategy, aims to reduce greenhouse gas (GHG) emissions by discouraging sprawl development, fostering land use patterns that reduce the need to drive, and by promoting alternative transportation options.

In August 2008, the Senate amended the bill to apply only to federally-designated metropolitan planning areas, thus eliminating some small counties. Therefore, the bill only requires California's 18 MPOs to prepare a "sustainable communities strategy" to reduce vehicle miles traveled (VMT) in their respective regions, and to demonstrate ability to attain Air Resource Board targets.

"...go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities..."

— USDOT Policy Statement on
Bicycle & Pedestrian
Accommodation, 2010

Governor Brown establishes a mid-range goal to meet before 2040 with the signing of **Executive Order B-30-15**. It sets the State a year 2030 goal to reduce greenhouse gas emissions to 40% below 1990 levels. One of Governor Brown's key strategies to meet the 2040 target is to reduce petroleum use in vehicles by fifty percent.

Complete Streets Policies & Plans

California Complete Streets Act of 2008 (California Assembly Bill 1358)

Per AB 1358 (Leno), when a city or county is substantively revising the circulation element of the general plan, the respective legislative body is required to modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, in a manner that is suitable to the rural, suburban, or urban context of the general plan. "All users" is defined as motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation. By requiring new duties of local officials, this bill would impose a state-mandated local program.

Complete Streets—Integrating the Transportation System (Caltrans, 2014)

Deputy Directive 64-R2, originally passed in 2001 and renewed in October 2014, directs Caltrans staff to implement complete streets. The directive addresses bicycle, pedestrian and transit modes, energy efficiency, climate change, and “context sensitive solutions.” The policy reads, in part:

The (California Department of Transportation) views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California, recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

The Department develops integrated multimodal projects in balance with community goals, plans, and values. Addressing safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian, and transit travel is facilitated by creating “complete streets” beginning early in system planning and continuing through project delivery and maintenance and operations.

Following Caltrans’ DD-64, the State legislature passed **Assembly Concurrent Resolution No. 211** (Nation, 2002), which promotes “integrating walking and biking into transportation infrastructure.” The resolution encourages all cities and counties to implement the policies of Caltrans DD-64 and the U.S. DOT design guidance document when building local transportation infrastructure.

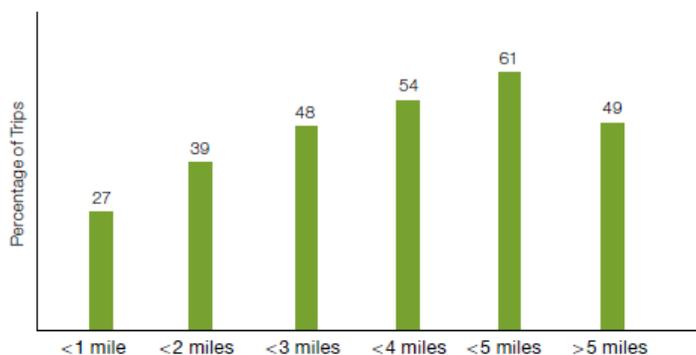
Caltrans released its **Complete Streets Implementation Action Plan 2.0** (CSIAP 2.0) in November 2014. The “2.0” update added 109 action items for Caltrans to further integrate complete streets into its projects delivery. Caltrans treats the Action Plan as a living document, monitoring and reporting on action items twice yearly, and adding new activities through an Action Item Addendum.

Active Transportation Planning

The Federal Highway Administration, with the adoption of the “**Strategic Agenda for Pedestrian & Bicycle Transportation**” in September 2016, adopted these national goals for active transportation:

- ◆ By the year 2025, increase the percentage of short trips made by bicycling and walking to 30 percent. This will achieve 50 percent increase over the 2009 rate of 20 percent. Short trips are defined as trips five miles or less for bicyclists and one mile or less for pedestrians.
- ◆ In 15 years, reduce pedestrian and bicycle fatalities and serious injuries by 80 percent
- ◆ In the next 20 to 30 years, reduce pedestrian and bicycle fatalities and serious injuries to zero.

FIGURE 2 Most Daily Trips in U.S. Are Within Easy Walking or Biking Distance³



Source: Active Living Research 2016 (data from 2009 National Household Travel Survey)

The federal Department of Transportation provided the “**U.S. DOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations**” (March 2010) to “reflect the Department’s support and encouragement for transportation agencies and local communities to develop fully integrated active transportation networks.” It states,

The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide—including health, safety, environmental, transportation, and quality of life—transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

The DOT’s policy encourages State and local governments and other stakeholders (professional associations, community organizations, public transportation agencies) to adopt similar policy statements to reflect “their commitment to accommodating bicyclists and pedestrians as an integral element of the transportation system.” The policy recommends actions for creating safe, sustainable, convenient bicycling and walking networks.

The **U.S. Bicycle Commuter Act of 2008** added bicycle commuting to the list of qualified transportation fringe (QTF) benefits, or reimbursements, allowed by the Internal Revenue Service Code. The National Indian Gaming Commission also began offering the bike subsidy. Under the Act, employers may voluntarily reimburse employees, tax free, for allowable expenses: purchase, maintenance, repair, and storage expenses related to bicycle commuting.

The legislation allows \$20 bike benefit per month, much less than the \$130 pre-tax income benefit allowed for mass transit, and smaller still compared to the \$250 per month subsidy made available for qualified car parking. Employees may be reimbursed for only one type of QTF in the same month. “The total anticipated cost of the bicycle commuter provision, estimated by the Joint Committee on Taxation, is \$1 million per year, compared to an annual cost of \$4.5 billion for parking and transit benefits,” according to the National Center for Bicycling and Walking (www.bikewalk.org/bca.php).

Economic Benefits

The cost of owning and operating a car, currently estimated at \$10,374¹ per year, can account for almost 19 percent² of a typical household’s income. Compare that with the \$308² yearly operating cost of owning a bicycle, or essentially free travel by foot, and it is clear that walking and bicycling can provide options for those who would like to save money.

¹ Your Driving Costs, AAA Exchange.

² League of American Bicyclists

The *Caltrans Strategic Management Plan 2015-2020* (Caltrans 2015) has as one of its goals “Sustainability, Livability and Economy.” Performance target for this goal are to, by 2020:

- Triple bicycle mode share in California;
- Double pedestrian mode share in California; and
- Double transit mode share in California (using the 2010-12 California Household Travel Survey data as baseline).

The *California Transportation Plan 2040* (adopted in 2016) is the State’s long-range transportation plan. The CTP 2040 has a vision of having “a fully integrated, multimodal and

Humboldt REGIONAL BIKE PLAN - Update 2017
DRAFT for Public Review & Comment

sustainable transportation system in California that delivers on the ‘3 E’s’—a prosperous economy, a quality environment, and social equity.” One of the Plan’s goals, for sustaining a prosperous economy, is to “improve multimodal mobility and accessibility for all people.” An underlying policy is to “provide viable and equitable multimodal choices, including active transportation.” The CTP 2040 integrates Caltrans’ long-range modal plans, which include the *California State Bicycle and Pedestrian Plan*, “Toward an Active California” (Public Review Draft, February 2017. [to be updated when adopted](#).)

Towards Zero Deaths

Both the U.S. DOT and Caltrans have established goals towards zero pedestrian and bicycle fatalities and serious injuries. The U.S. DOT’s *Strategic Plan 2014-2018* articulates the goal of “working toward no fatalities across all modes of travel,” encapsulated in the Toward Zero Deaths vision. To this end, in October 2016, three DOT agencies (administrations) and the National Safety Council launched the Road to Zero coalition, whose initiative is to end traffic fatalities and serious injuries on the nation’s roads within the next 30 years. For the next three years, the U.S. DOT’s National Highway Traffic Safety Administration (NHTSA) has committed \$3 million annual funding for to provide Safe System Innovation grants. The grants are to be awarded to “organizations with innovative approaches to making roadways safer and eliminating preventable roadway deaths” (NSC 2017).

Part of the Caltrans current *Strategic Management Plan* (Caltrans 2015) is to adopt a “Toward Zero Deaths” practice in order to reduce fatalities and injuries related to surface transportation. The corresponding performance targets are:

- 0.5 or less auto travel fatalities per 100 million (auto) vehicle miles traveled on the State Highway System every year;
- 10% reduction in number of fatalities in a calendar year for car, bicycle, pedestrian, and transit modes of travel; and
- to be determined for reducing the number of injuries for car, bicycle, pedestrian, and transit modes of travel. Baseline and targets will be established based on best industry practices.



Three Feet for Safety Act

Drivers in California must maintain a minimum three-foot buffer when passing a bicyclist, pursuant to the “3 feet” law that became operative on September 16, 2014 (California Vehicle Code section 21760—Driving, Overtaking, and Passing). If there is not a three foot buffer due to traffic or roadway conditions, “the driver shall slow to a speed that is reasonable and prudent, and may pass only when doing so would not endanger the safety of the operator of the bicycle, taking into account the size and speed of the motor vehicle and bicycle, traffic conditions, weather, visibility, and surface and width of the highway.” The law set very modest infraction fines of \$35 for violations, and \$220 if the violation causes a bicyclist bodily injury.

BICYCLING AND WALKING DOUBLED FROM 2000 TO 2010*

REFERENCES

Active Living Research, 2016. “Moving Toward Active Transportation: How Policies Can Encourage Walking and Bicycling.” *Active Living Research: Research Review*. January 2016.

Caltrans 2015. *Caltrans Strategic Management Plan 2015-2020*, March 2015.

Caltrans 2017. *California State Bicycle and Pedestrian Plan: Toward an Active California*. Public Draft, Feb. 2017.

“Cycling Science: 7 Fascinating Facts About Bikes” by Max Glaskin, *Popular Mechanics*, December 3, 2012. Accessed 3/10/17 at

www.popularmechanics.com/adventure/sports/g1034/cycling-science-7-fascinating-facts-about-bikes.

FHWA 2010. FHWA U.S. DOT *National Walking and Bicycling Study: 15-Year Status Report*. Prepared for FHWA by the Pedestrian and Bicycle Information Center (PBIC), May 2010.

FHWA 2016a. “Pursuing Equity in Pedestrian and Bicycle Planning,” prepared Laura Sandt, T. Combs, and J. Cohn for the U.S. DOT, FHWA. April 2016. Accessed 3/10/17 at www.fhwa.dot.gov/environment/bicycle_pedestrian/resources/equity_paper/.

FHWA 2016b. FHWA U.S. DOT “Strategic Agenda for Pedestrian and Bicycle Transportation.” Sept 2016.

NSC 2017. (National Safety Council) “NSC, U.S. DOT’s National Highway Traffic Safety Administration Announce Safe System Innovation Grant Recipients,” March 15, 2017. Accessed 3/23/17 at www.nsc.org/Connect/NSCNewsReleases/Lists/Posts/Post.aspx?ID=183

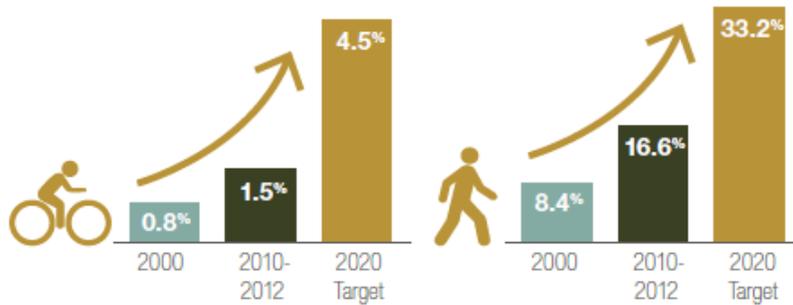
Pedroso, Angriman, Bellows, and Taylor 2016. “Bicycle Use and Cyclist Safety Following Boston’s Bicycle Infrastructure Expansion, 2009-2012” *American Journal of Public Health*, 2016 Dec;106(12); Epub Oct 13, 2016.

Works cited:

..... **Jacobsen, P.L.** 2003. *Injury Prevention*, 2003; 9(3).

Dill, J. and Carr, T. “Bicycle commuting and facilities in major U.S. cities: if you build them, commuters will use them – another look.” Available at: http://www.ltrc.lsu.edu/TRB_82/TRB2003-002134.pdf.

U.S. DOT 2010. “United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations.” Signed on March 11, 2010. (www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/policy_accom.cfm; accessed February 2017)



*Data from 2010-2012 California Household Travel Survey. Figures are as a percent of all trips.

While bicycling and walking continue to increase in California, some of our peer states are doing better.



Data from American Community Survey for 2014

Source: Caltrans 2017

BIKE NETWORK GOALS & POLICIES

2.

As the regional transportation planning agency, HCAOG wants Humboldt's transportation infrastructure to provide access for all, a real choice of modes, and safety in equal measure for each mode of travel.¹ Having a robust active transportation system that includes a comprehensive regional bicycle network is one part of achieving this goal. To this end, HCAOG fully considers the needs of bicyclists in all programming, planning, and project development activities.

HCAOG shall program, plan for, and help develop the regional transportation system consistent with these policies:

- The design and development of transportation infrastructure shall improve conditions for bicycling through: planning projects for the long-term; addressing the need for bicyclists to cross corridors as well as travel along them; and consistently providing timely review periods for the public.
- In all urbanized areas, bikeways shall be established in new construction and reconstruction projects unless bicyclists are prohibited by law from using the roadway or the cost of establishing bikeways would be excessively disproportionate to the need or probable use; or where sparse population or other factors evidence an absence of need.
- In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to travel.

"If we are to meet the goals of doubling the current levels of bicycling and walking in the United States while decreasing by 10% the number of crash-related injuries and deaths, coordinated and committed effort must be put forth at every level of government."

-National Cycling and Walking Study, Federal Highway Administration 1994

Five Things Cyclists Want:

- Space
- Low vehicle speed
- Low traffic volume
- Smooth surfaces
- Minimal conflicts at intersections

¹ From US DOT Policy "Accommodating Bicycle and Pedestrian Travel: A Recommended Approach."

VISION, GOAL & OBJECTIVES

The vision is what we aspire to achieve.

***Vision:** Create a regional bicycle network in which people of all ages and abilities feel safe bicycling, bicycle within and between communities, and choose bicycling as an attractive and practical mode of travel for more trips.*

Goal: Create the safest conditions for bicyclists by providing infrastructure and non-infrastructure projects that eliminate barriers to bicycle travel.

OBJECTIVES:

- ◆ Increase the percentage of people in Humboldt who commute by bicycle.
- ◆ Increase the annual number of non-recreational bicycle trips in Humboldt.
- ◆ Increase the number/miles of regional bikeways that connect Humboldt communities.
- ◆ Increase the number of major destinations and public transportation stops that can be accessed directly via a designated bikeway.
- ◆ Increase the number and quality of bicycling amenities.
- ◆ Decrease the number of injuries and fatalities from bicycle collisions towards zero deaths.
- ◆ Increase the number and reach of bicycle education and encouragement programs.

POLICIES

The policies below include policies from VROOM, HCAOG'S Regional Transportation Plan, that are especially pertinent to the goals and objectives of the Regional Bicycle Plan. Although we are retaining the original VROOM policy numbers, the policies also apply to the Bike Plan.

I. DEVELOP COMPREHENSIVE REGIONAL BICYCLE NETWORK

Policy 1.1 HCAOG will work with and support local jurisdictions and local Native American Tribes to plan, install and maintain local bikeway networks, as well as to collaborate to build a comprehensive regional bicycle network linking cities, unincorporated areas, counties, the California Coastal Trail, and the Pacific Coast Bike Route. Humboldt's regional bicycle network shall have:

- regional bikeways that link communities and connect to local bicycle networks and facilities;
- local bikeways that link to major activity centers, public transportation, recreation, and other destinations;
- bicycle-friendly streets, as consistent with "Complete Streets"² policies, designed with best current practices, and innovative treatments where appropriate;
- comprehensive facilities that support bicycle travel, including, but not limited to, directional signage, bike maps, sheltered parking, and changing stations; and

² See Chapter 1, California Complete Streets Act of 2008 (California Assembly Bill 1358).

- bicycle facilities integrated to access other modes of transportation (e.g. driving, carpooling, public transit)

VROOM Policy CS-2 HCAOG recognizes the planned Humboldt Bay Trail as a regional priority multi-use trail and supports multi-jurisdictional, public, and private efforts to develop it.

Policy 1.2 HCAOG encourages local jurisdictions to adopt the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide as the primary guide for designing innovative bicycle facilities.

VROOM Policy PT-6 HCAOG encourages and will work with transit providers to promote and accommodate bicycles on transit vehicles, and to provide secure bicycle parking facilities at transit stops and transportation centers.

VROOM Policy CS-12 To advance Safe Routes to School and Safe Routes to Transit initiatives, HCAOG shall support jurisdictions to establish and maintain safe pedestrian paths and designated bikeways (Class I, II, or III) within one mile of all public schools and public transit connections.

Policy 1.6 HCAOG will coordinate local and regional bicycle signage and amenities to be consistent with a regional trails signage and amenities plan, when adopted, per Regional Trails Master Plan-Goal 4.5.

Policy 1.7 HCAOG encourages and will assist local jurisdictions to adopt ordinances that require bicycle facilities in new development and redevelopment. Recommended ordinances include:

- Onsite bicycle parking and/or storage in all new public, multi-family residential, commercial, industrial, and mixed-use development and redevelopment.
- Installing and maintaining safe bicycle links to the existing bikeway network and/or to other modes.
- Shower and locker facilities for new developments and redevelopments over 15,000 square feet.
- Incentives for large-scale developments and employers to provide indoor bicycle parking and on-site bike share systems for tenants and/or employees.

HCAOG encourages local jurisdictions to use HCAOG's "Countywide Bicycle Parking Guidelines" and "Bike Parking Sourcebook" (both 2015) as references for codifying bike parking standards

VROOM Policy Trails-1 HCAOG shall coordinate and support local jurisdictions in developing a regional trails network. HCAOG shall support lead agencies in completing a contiguous California Coastal Trail (CCT) in Humboldt County. HCAOG supports implementing "Complete Streets" projects and policies for the California Coastal Trail (CCT) along the shoreline of Humboldt's coastal communities.

II. BICYCLE EDUCATION, PROMOTION, & SAFETY

Policy 2.1 HCAOG will collaborate with organizations and grassroots efforts countywide to provide incentives and support to promote bicycling and its benefits. HCAOG will promote

bicycling as a healthy transportation choice that benefits physical and environmental health and enhances community interactions.

Policy 2.2 HCAOG will help coordinate and collaborate with local jurisdictions and stakeholders across agencies and disciplines to improve safety and awareness through bicycle skills and safety education to students, bicyclists, and motorists.

Policy 2.3 HCAOG will support programs that promote and enforce legal and respectful bicycling and driving.

III. FUNDING COMMITMENTS

Policy 3.1: HCAOG shall fund projects and programs that plan, build, maintain, and promote Humboldt's comprehensive regional bicycle network. HCAOG shall include in the annual Overall Work Plan staff time and funding to implement the Regional Bicycle Plan. HCAOG shall prioritize funds for Complete Streets projects that eliminate barriers to bicycle travel, such as widening roadway shoulders, closing gaps, improving access on bridges, and designating bikeways within one mile of public schools and between transit stops and nearby public facilities.

Policy 3.3 HCAOG shall encourage local jurisdictions to include bikeway improvements in their Capital Improvement Plans, consistent with adopted Complete Streets policy in the Regional Transportation Plan VROOM.

VROOM Policy CS-4 HCAOG shall include Complete Streets improvements in regionally-funded transportation system projects to the extent feasible, as consistent with California Complete Streets Act of 2008 (AB 1358) and Caltrans Deputy Directive 64-R2.

VROOM Policy CS-# HCAOG will accelerate programming for regional projects that retrofit existing roads to provide safe and convenient travel by all users.

VROOM Policy CS-3 HCAOG shall pursue grants and public-private partnerships to augment funding for infrastructure and non-infrastructure projects and planning for pedestrian, bicycle, and transit facility improvements. HCAOG shall identify and help secure the financial resources necessary to accommodate HCAOG's Complete Streets and active transportation policies adopted in the *Regional Bicycle Plan*, *Regional Transportation Plan (VROOM)*, *Regional Master Trails Plan*, and *Regional Pedestrian Plan*.

IV. BICYCLE PLANNING & MONITORING PROGRESS

Policy 4.1 HCAOG shall coordinate planning documents and updates to consistently support building a comprehensive regional bicycle network. The adopted Regional Bicycle Plan may serve as the Bicycle Element of the Regional Transportation Plan at least annually in the years between updates, HCAOG shall review the status of implementing the Regional Bicycle Plan. HCAOG shall

facilitate an ad hoc bicycle advisory committee to participate in this annual monitoring and progress report.

Policy 4.2 HCAOG will assist local jurisdictions and agencies in developing and implementing active transportation plans.

Policy 4.3 HCAOG shall use the Bicycle Level of Service and Quality of Service (BLOS/BQOS) and the Bicycle Compatibility Index or Bicycling Level of Traffic Stress as tools for assessing bicycle facility needs and prioritizing projects.

Policy 4.4 HCAOG will support and offer assistance to local jurisdictions, Native American tribes, and agencies in planning and conducting bike and pedestrian audits to improve project planning, design, community input, and funding competitiveness.

Policy 4.5 HCAOG shall lend staff support and leverage funds as feasible to institute a bike count program with the goal of conducting annual counts. *(From 2015-16 Bike Plan Progress Report)*

Policy 4.6 HCAOG shall support and facilitate jurisdictions in surveying bike parking needs in central business districts, commercial areas, or other high-use destinations. HCAOG staff's primary role will be as resource coordinator. *(From 2015-16 Bike Plan Progress Report)*

Policy 4.7 HCAOG Performance measures based on Bike Plan objectives may include, but are not limited to, the following.

Performance measures	Data
Increase the percentage of people in Humboldt who commute by bicycle by _____% by year _____	<u>TBD</u>
Increase the annual number of non-recreational bicycle trips in Humboldt by _____% by year _____	
Increase the number [miles?] of regional bikeways that connect Humboldt communities by _____% by year _____	
Increase the number of major destinations and public transportation stops that can be accessed directly via a designated bikeway by _____% by year _____	
Increase the number and quality of bicycling amenities by _____ by year _____	
Decrease the number of injuries and fatalities from bicycle collisions by _____% by year _____	
Increase the number and reach of bicycle education and encouragement programs by _____% by year _____	

3. BICYCLE SYSTEM DESIGN FACTORS

This chapter discusses the major factors to be considered when designing a bicycle system. The chapter describes the relatively recent typology describing bicycle riders, and the typical needs of commuter and recreational cyclists. The chapter then defines standard bikeway classifications and lists resources and references of design guidelines that are leading the practice today. Lastly, the chapter summarizes constraints and opportunities for increasing the number of people who bicycle for transportation in Humboldt County and the number of automobile trips they replace with bicycle trips. [Public comments to be updated after public review.](#)

Five things bicyclists want:

- ◆ Space
- ◆ Low vehicle speed
- ◆ Low traffic volume
- ◆ Smooth surfaces
- ◆ Minimal conflicts at intersections

– Local Government
Commission

TYPES OF RIDERS

Roger Geller, the Bicycle Coordinator for the Portland Bureau of Transportation (Oregon), circa 2006 began developing a typology to describe how people feel about riding a bicycle for transportation (Geller, 2009). The typology and data were based on surveys of Portlanders, and has been corroborated with national and international data. The typology describes people's typical willingness to bike as a mode of transportation (not recreation). The four categories are:

- 🚲 **“Strong and Fearless”** – Experienced riders who prefer direct routes. They tend to like riding relatively fast; therefore, they typically choose more direct roadway connections over shared-use paths or other separated bicycle facilities.
- 🚲 **“Enthused and Confident”** – People who are fairly comfortable riding on all types of bikeways; they tend to prefer riding on low-traffic streets or shared use paths when available. Includes people who bike for commuting, recreation, racing, and utilitarian trips.
- 🚲 **“Interested but Concerned”** – People who ride on low-traffic complete streets and multi-use trails built “for all ages and abilities.” They are discouraged from riding more often due to safety concerns; they opt not to ride in traffic, or in wet or cold weather. People who



JENNIFER DILL AND NATHAN MCNEIL, UNDERSTANDING TYPES OF CYCLISTS
NATIONAL LSC, 2006

Types of Bike Riders in the U.S.

Image source: Caltrans 2017

are “Interested but Concerned” may become “Enthusied & Confident” given more encouragement, education and experience.

- 🚲 **“No Way, No How”** – People in this category do not ride bicycles and will likely never ride. They are not interested for various reasons, such as they are not physically able to bike, they do not enjoy riding a bicycle, or they do not feel safe riding under any conditions.



BICYCLE TRAVEL NEEDS

COMMUTER NEEDS

Bicycle commuters include people who ride to work or school, either daily or occasionally. Commuter bicyclists have obvious and straightforward needs that primarily concern safety, with comfort and convenience being close (if not interrelated) seconds. Common concerns of commuting cyclists are: inclement weather (rain, high winds), riding in the dark, personal safety, and bike security (e.g. from theft). Approaching and riding through unprotected or high-volume, multi-lane intersections is a concern for most, if not all, bicycle riders.

Key commuter needs include the following.

- **TRIP RANGE** – Bicycle commuting requires shorter distances than motorized commuting. For bicycle commuting to be viable and appealing, the cyclist’s residence needs to be relatively close to the work place, commercial areas, other services, and recreational places. Viable bicycle commute distances can be problematic when land use and transportation policies support the construction of sprawling neighborhoods that are far apart from employment centers. It is also a problem for bicycle commuting when neighborhoods connect only via wide roadways that are built for large traffic volumes and high speeds. Most bicycle commute trips in Humboldt County are local rather than regional. Most bicycle commuters’ trips are less than five miles (eight kilometers). However, many cyclists commute between Arcata and Eureka, a distance of at least six miles.
- **MULTI-MODAL COMMUTING** – Bicycle commuters can extend their trip range by combining bicycling with public transit and carpools/vanpools. Bike-transit trips are more convenient, appealing, and perhaps more feasible when bicycles are allowed on public transit, and when there are bicycle lockers and changing facilities at transit stations. Bike-carpool trips can be encouraged by providing park-and-ride lots with bike lockers and changing facilities.
- **PREFERRED COMMUTE ROUTES** – Bicycle commuters typically seek the most direct and fastest route available. Most would prefer to have bike lanes or wider curb lanes on a direct route than

be directed to side streets. Traffic signals and imbedded detectors at busy intersections also tend to be favored, as do routes where the pavement is in good condition and regularly maintained (e.g, even and swept). However, if the route is shared with high volumes of traffic and car speeds it is less appealing, particularly to people who are “Interested but Concerned” about riding.

- **BIKE-TO-SCHOOL ROUTES** – Routes to school must accommodate younger riders, who should not be expected to choose arterial or collector streets without separated bikeways. It is generally acceptable for children and youth to ride on sidewalks where there are not many pedestrians and where driveways are easy to see. If parked cars, landscaping, or structures block views of cars pulling out of driveways, sidewalk riders may be at greater risk for colliding with cars. Youth who ride at speeds over 10 mph should be directed to ride on the street wherever possible.
-
- **BICYCLE STORAGE** – Commuters also need bicycle parking and, ideally, bicycle storage and showers at their destinations. A safe place to store bicycles is important to all bicycle commuters. Unfortunately, bicycle commuters are not regularly provided with secure, covered bicycle racks that are conveniently located. Showers and lockers for cyclists are even more rare.
- **SAFETY EDUCATION** – Students riding the wrong direction down the street are involved in many reported accidents, which indicates a need for effective bicycle education programs.

RECREATIONAL NEEDS

Recreation is a major part of the lifestyle in Humboldt County and one of the top attractions for tourists. While we emphasize bicycling for transportation in the *Regional Bicycle Plan*, we still cover bicycling for recreation, as some infrastructure serves both purposes. Moreover, developing a robust regional network will benefit from integrating recreational bicycle trails. (Recreational bike trails are covered more fully in the *Humboldt County Regional Trails Master Plan* (HCAOG 2010) than here.) Additionally, the major source of state grant funding for bicycle projects, California’s Active Transportation Program (ATP), is the source for recreational trails grants.



Studies have identified tangible benefits that come to communities that provide recreational opportunities. Local access to recreation generally increases property values, often boosts tourism, increases local recreation expenditures and destinations, and can spur new business opportunities. Recreational paths also provide additional transportation choices.

Recreational bicycling covers those who bicycle for exercise, for sport, or make longer bicycle touring trips. Recreational users range from mountain bikers to Sunday riders, from children to senior citizens. Each group has its own abilities, interests, and needs, such as:

- For recreational bicycling, directness of route is typically not as important as routes with fewer traffic conflicts, greater visual interest, shade, wind protection, or moderate grades (except for hardy mountain bikers who like steep hills).
- Bicyclists exercising or touring often prefer a loop route rather than having to backtrack.
- Mountain bikers, a fast growing segment of recreational users, prefer off-road trails. Developing long-distance trails between cities will satisfy many off-street needs.
- Bicycle touring is popular on the Pacific Coast Bike Route in Humboldt (predominantly southbound) and, increasingly, statewide. Bicycle touring packages for groups is a growing tourism business, and self-contained touring is a growing eco-tourism offering. Campsites and rest stops are important amenities for touring cyclists.

Humboldt County offers several excellent recreational bicycle routes for different types of bicycle riders. For less experienced riders, there are bike paths such as the Class I Hammond Trail. For more experienced and long-distance riders, there are scenic back roads such as Westhaven Drive and Scenic Drive in the ~~Westhaven-Trinidad area, Fickle Hill and Maple Creek Road in the Arcata-to-Korbel area, and Old Arcata Road in Arcata-Bayside-Eureka.~~ For touring cyclists, there is the Pacific Coast Bicycle Route, including the Avenue of the Giants.

The region's recreational offerings for bicyclists can be expanded upon. Two apparent deficiencies are (1) the public's lack of awareness of bicycling opportunities, and (2) poor connectivity to regional recreation facilities such as parks and rest stops. Also, many roads outside of developed areas lack shoulders or sufficient width for bikeways which inhibit most riders ~~other than the "Strong and Fearless" or "Enthused and Confident."~~

Humboldt residents have expressed their demand for additional bike paths where families, children, and others can ride close to home without having to worry about motorized traffic. To serve their needs, HCAOG member agencies have to create better local and regional connectivity and more Class I multi-use paths. Two common issues on multi-use trails are (1) conflicts between bicyclists, equestrians, walkers, skaters; and (2) interfaces where the trail and roadways intersect. When a multi-use trail will exceed 200 people per hour, the trail can be designed to diminish conflicts with appropriate design, signage, and adequate enforcement. Regardless of the design, however, many experienced cyclists choose not to use multi-use trails because of the unpredictability of other users. (In fact, studies have shown that the incidence (although not the severity) of most bicycle-related accidents involve other bicyclists or pedestrians rather than automobiles. As such, multi-use trails should be designed to separate users as much as possible and the system should not depend on multi-use trails for critical connections to serve all riders.

FACTORS FOR BICYCLE FRIENDLINESS

What is “bicycle friendliness”? It could be explained by repeating how the FHWA defines an active transportation network in their “Strategic Agenda for Pedestrian and Bicycle Travel”: having “interconnected pedestrian and bicyclist transportation facilities that allow people of all ages and abilities to safely and conveniently get where they want to go” (FHWA, 2016b). The hallmarks of effective, connected networks that support safe, convenient, and attractive non-motorized travel include the following characteristics:

- **Accessibility:** How well does the network accommodate travel for all users, regardless of age or ability?
- **Cohesion:** How well does the network connect to a concentration of destinations and link together paths and routes?
- **Directness:** Does the network provide direct and convenient access to destinations?
- **Alternatives:** Is only one transportation option available, or does the network enable a range of mode and/or route choices?
- **Safety and Security:** Does the network provide routes that minimize risk—real or perceived—of injury, danger, or loss of property?
- **Comfort:** Is the network appealing to a broad range of age and ability levels? Is consideration given to user amenities? (Ibid).

We can answer these questions to analyze gaps and evaluate the overall bicycle network.

“If we are to meet the goals of doubling the current levels of bicycling and walking in the United States while decreasing by 10% the number of crash-related injuries and deaths, coordinated and committed effort must be put forth at every level of government.”

- Federal Highway Administration, 1994

BICYCLE NETWORKS

To function properly, a bikeway network must connect neighborhoods and communities so that people feel safe biking from home to their destination, and the distances must not be too great (most utilitarian bike trips are one to three miles). Typical bikeway destinations include:

- downtowns, commercial districts, and shopping centers
- civic buildings, libraries, hospitals, medical offices
- schools, universities, and colleges
- employment centers
- transit hubs and transfer points for multi-modal trips
- residential neighborhoods
- parks, beaches, and other recreational destinations.

Ideally, long-range regional planning can enable local jurisdictions to design bicycle infrastructure at four levels, in the right order:

- 1) network
- 2) road sections/corridors
- 3) intersections
- 4) road surface
- 5)

Developing networks in this order, generally speaking, will achieve the best bicycle networks for the end user, and for cost savings and land use efficiency. Key factors for successful bike facilities, at all levels, is having routes that are direct in terms of both distance and time, and that users feel safe from traffic hazards and threats to their own safety. Other key design factors include:

Network level:

- Bikeways avoid conflicts with cross traffic, especially with motorized vehicles.
- Where it is undesirable or unfeasible to segregate cars and buses from bikes and pedestrians, physical elements serve to reduce speeds wherever different modes share the same infrastructure. And vice versa: where speeds and/or volumes of motorized traffic cannot or should not be reduced, different modes are physically separated (e.g., by means of paths, underpasses, overpasses, or physical barriers).

Road section/corridor level:

- Bike facilities separate cyclists from other vehicles where there are high traffic volumes and major speed differences.
- Designated routes do not expose cyclists to a lot of noise, debris, or fumes, especially from trucks, buses.

Intersection level:

- Where modes interact, appropriate design brings speeds down to reduce motor vehicles' speed.
- Where different modes inevitably meet each other, maneuvers are designed to be simpler, not more complicated.
- Stops and wait times are minimized.
- Cyclist are always visible to motorists.
- Curves are designed to reduce motorized traffic speeds where bicyclists/bicycles and motor vehicles will be close to each other.

Road surface level:

- Pavement/paving is even; surfaces are swept.
- Bike facilities are spaced appropriately from rumble strips, grooves, and other uneven surfaces. (ICE and GTZ, 2009)



SAFETY

There is a myriad of strategies to harness for increasing the safety of bicycling. As with other active transportation planning, we promote a “6 Es” approach to improving bicycle safety: Engineering, Education, Encouragement, Enforcement, Evaluation, and Equity. The following discusses approaches and factors that influence bike safety.

Engineering, Infrastructure: When sharing the road, cyclists are vulnerable because they are sharing space with motorized traffic despite major differences in mass and speed (and protective covering). Although bicycle infrastructure cannot eliminate this inherent vulnerability, it can address and influence these physical discrepancies to create safer conditions for bicycling. A key point is that where there are significant differences in speed, encounters should be avoided as much as possible by means of a separation in time or space. Thus, where there are significant differences in speed, different types of vehicles should be physically separated to eliminate the conflict. Where this is not feasible, motorized traffic speeds should be reduced at potential conflict locations to ensure that, if a crash occurs, the severity of the injury is likely to be lower.

Bicycle safety also depends on infrastructure being maintained in good condition. Disrepair such as broken or uneven surfaces, paths blocked by branches, roots or overgrowth, and poor lighting create potential hazards.

Education, Enforcement: Unsafe driver, bicyclist, or pedestrian behavior causes unsafe conditions. When any user fails to obey the rules of the road it causes hazards for all. Unsafe driver behavior includes operating vehicles aggressively or negligently, such as speeding and driving or stopping too close to other users. Unsafe bicyclist behavior includes riding the wrong way on streets and ignoring stop signs. Driving or bicycling while impaired is obviously unsafe, as is driving, walking, or bicycling while distracted by texting or dialing. Breaking people of these bad habits can be reinforced with traffic enforcement as well as education. Education works in school programs as well as general public campaigns.

One recent advancement for education and enforcement is the California 3-foot passing law, which applies specifically to motor vehicles passing bicyclists from behind. The Three Feet for Safety Act (2014) improved the State vehicle code, which had required drivers to pass bicyclists at a “safe distance,” by enacting a clear and distinct three-foot minimum passing distance.



BICYCLE LEVEL-OF-SERVICE CONCEPT

Generally, cyclists choose their routes—or whether to ride at all—based on how they perceive hazardous conditions. (For some local perspectives, see *Humboldt Bay Area Bicycle Use Study*, RCAA

1999)....Therefore, one strategy for increasing bicycle ridership is to prioritize projects that will eliminate or minimize perceived hazards to bicyclists.

In the transportation field, it is common practice to evaluate roadway traffic conditions based on the “level of service” concept, or LOS. For automobiles, the LOS “grade” (A to F) indicates the typical delay a driver would experience on a particular roadway or intersection. Practitioners and stakeholders in the transportation field are interested in ways to evaluate the level of service for bicyclists, i.e. the “bicycle friendliness” or “bikability” of a facility. Bicycle LOS modeling helps predict what conditions a cyclist would experience in a given bikeway facility, such as the speed of bicycles and motorized vehicles, and density of users..

Table 3.1. Level of Service (LOS) Characteristics for Bikeways

Bicycle Level of Service						
Characteristics	A	B	C	D	E	F
Flow Rate ^a (bikes/minute/feet)	<4.4	4.4–6.6	6.7–10.0	10.1–11.9	12.0–13.2	Variable
Density (bikes/square feet)	<0.005	0.005– 0.007	0.008– 0.012	0.013– 0.017	0.018–0.025	>0.025
Cycling Speed	≥11.0	10.5 –11.0	9.5–10.4	8.0–9.4	6.0–7.9	<6.0

^a Minimum bike path or bike lane width for which these figures apply are: LOS A-8.0 ft; LOS B-7.5 ft; LOS C-3.5 ft; and LOS D-3.2 ft. The greater widths shown for LOS A and B are necessary to allow free overtaking.

Source: *Fundamentals of Traffic Engineering*, 13th Edition. Institute of Transportation Studies, University of California, Berkeley.

Bicycle Compatibility Index (BCI)

The Bicycle Compatibility Index (BCI) is another model for measuring conditions for bicyclists. The BCI methodology uses variables such as curb lane width, traffic volume, and vehicle speeds to assess the “bicycle friendliness” of a roadway. Appendix C has detailed information (excerpted from FHWA reports) on how to develop and implement the BCI model for bicycle level of service.

Bicycling Level of Traffic Stress

The Bicycling Level of Traffic Stress (LTS) evaluation tool is used to measure bicyclists’ level of discomfort or stress on subject routes or facilities of a bicycle network. The goal is to design low-stress bicycle networks, i.e. where bicyclists can ride without having to use any “unacceptably stressful links” to reach their destinations. The LTS method was developed by the Mineta Transportation Institute (San José, CA) based on Dutch standards for bicycle facility design. It can also be used for evaluating pedestrian and multi-modal networks.

The LTS method classifies streets and intersections from a rank of one to four. “LTS 1” is for facilities that offer the lowest stress to use; LTS 1 streets are suitable for children, for example. On the other side of the spectrum, LTS 4 streets will usually have no designed or designated bike facility, and are generally suitable only to bicyclists who fit the “strong and fearless” rider type. The design standard for typical streets in the Netherlands is LTS 2, which has been shown to increase

bicycling rates in the overall population. The typical standard for bike facilities in U.S. is LTS 3 (Fehr and Peers).

Classifications of Level of Traffic Stress (LTS) with 1 being lowest stress:

LTS 1	LTS 2	LTS 3	LTS 4
<ul style="list-style-type: none"> - Physically separated from traffic or low-volume, mixed-flow traffic at 25 mph or less. - Bike lanes 6 feet wide or more. - Intersections easy to approach and cross. - Comfortable for children. 	<ul style="list-style-type: none"> - Bike lanes 5.5 feet wide or less, next to 30 mph auto traffic. - Unsignalized crossings of up to five lanes at 30 mph. - Comfortable for most adults. 	<ul style="list-style-type: none"> - Bicycle lanes next to 35 mph auto traffic, or mixed-flow traffic at 30 mph or less. - Comfortable for most current U.S. riders. 	<ul style="list-style-type: none"> - No dedicated bicycle facilities. - Traffic speeds 35-40 mph or more. - Comfortable for “strong and fearless” riders.

Source: <http://asap.fehrandpeers.com/wp-content/uploads/2014/08/MMLoS-Tool-Level-of-Traffic-Stress.pdf>

For more discussion of LTS, see “Report 11-19: Low-Stress Bicycling and Network Connectivity” by the Mineta Transportation Institute at the College of Business, San José State University, San José, California (authors: M. C. Mekuria, P. G. Furth, and H. Nixon), May 2012.

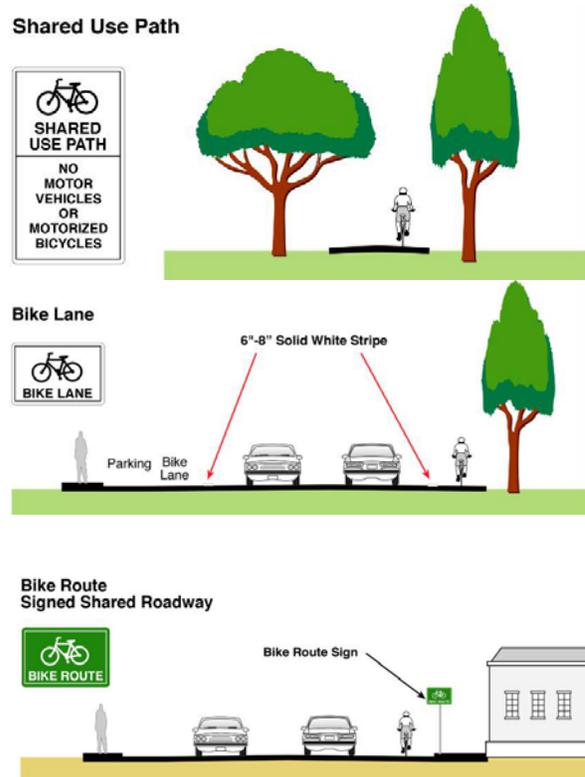
TYPES OF BIKEWAYS

Caltrans classifies bikeways into four primary classifications, described below.

SHARED USE PATH (Class I Bikeway) – Shared use paths, also called multi-use paths, are shared by bicyclists and pedestrians, and in some cases equestrians. They are paved and separated from streets and highways, and motor vehicles are prohibited. They are popular with novice cyclists; experienced bicyclists may avoid these paths to avoid conflicts with multiple users.

BIKE LANE (Class II Bikeway) – Bike lanes dedicate an area specifically for one-way bicycle travel on a street or highway. The lane must be painted with lane stripes and “Bike Lane” on the pavement. When properly designed, bike lanes make motorists more aware of bicyclists.

BIKE ROUTE (Class III Bikeway) – Bike routes are signed to indicate that bicyclists share the roadway with motor vehicles, and sometimes



pedestrians (not recommended). Designated Bike Routes are recommended if a Class I or II facility is not possible, especially to connect gaps between existing bikeways.

In addition to Caltrans' standard Class III bikeway design, the Bike Plan proposes two modified classifications for Class III bike routes, one "enhanced" and one "rural route."

ENHANCED BIKE ROUTE (Enhanced Class III Bikeway) – Enhanced bike routes augment the standard "Bike Route" (Class III) signs with pavement markings and/or additional signage. Roadway space requirements are the same as for other Class III facilities. Pavement marking might be, for example, fog lines, which are painted between the edge of the travel lane and the parking zone or shoulder. Fog lines visually constrict the travel lane, which makes some drivers slow down. Another pavement marking is the *shared-use arrow* (commonly called "sharrow") in the roadway painted outside the parked cars' "door zone." Enhanced signage might be "Share the Road" signs.



Fog lines striped on 11th Street in Arcata

RURAL ROUTE CLASS III BIKEWAY – This augmented Class III Bikeway is intended for rural, two-lane roads that cyclists frequently use, but whose width and/or sight distances make them poor candidates for a standard designated bike route. Placing "Bike Route" signs on these roads can potentially attract more cyclists where engineering cannot improve roadway conditions to accommodate more bicycle traffic. In these cases, "Share the Road" signs can be installed to increase motorists' awareness that cyclists are riding on the roadway.

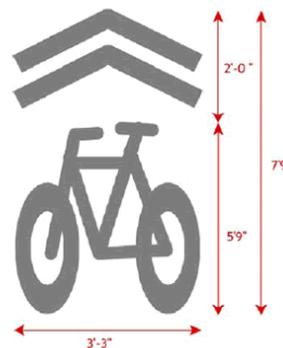


W16-1

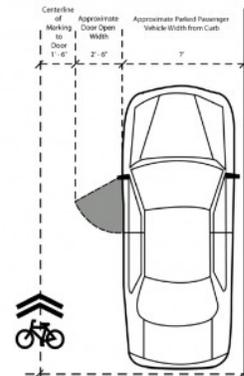


W16-1, W16-1
 Share the Road with bicyclists assembly

SEPARATED BIKEWAY or CYCLE TRACK (Class IV Bikeway) – The Class IV bikeway (sometimes called "protected bikeway") was added to the *California Streets and Highway Code* in 2014. They "provide a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which are protected from vehicular traffic" (Assembly Bill 1193, Ting). That is to say, a bike lane physically separated from motor vehicle travel lanes, parking lanes, and sidewalks. These bikeways may be grade-separated from motorized traffic, or may be separated by flexible posts, inflexible physical barriers, or on-street parking, for example.



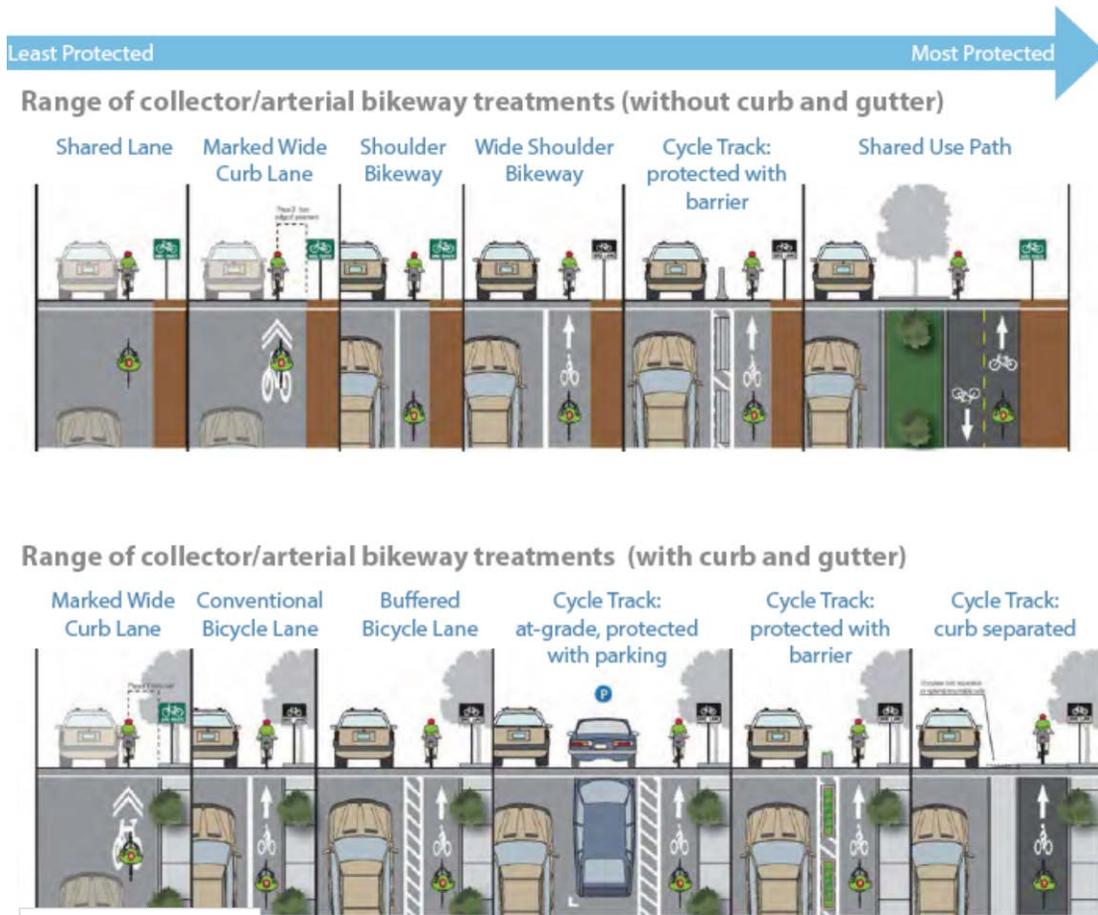
A standard image for a shared use arrow ("sharrow").



Sharrows are painted on the road, outside of the "door zone."

BICYCLE BOULEVARD – Bicycle boulevards are designated and designed to give priority to bicycle travel. Bike Boulevards are installed on streets with low volumes and low speeds of motorized traffic. They are designed to maximize

insert photo of Arcata's B.B.



Source: GOBike Buffalo

convenience for bicycle riders over automobiles, and to discourage motor vehicles from making through trips on these routes. Bicycle Boulevards use signs, pavement markings, and traffic calming designs to create routes that bicyclists will prefer.

PATHS AND TRAILS – Jurisdictions have the option to construct bike paths that do not conform to Caltrans standards. If a pathway is intended primarily for recreational use and will not be built using State or federal transportation funds, it may be constructed to meet local conditions and needs.

When a path or trail project will serve *both* transportation and recreation needs, funding opportunities can be sought for both uses.

SHOULDERS & TRAFFIC LANES – Where there is no bikeway, bicyclists ride on the roadway’s shoulder or in the traffic lane. On streets with limited motorized traffic (often the case in residential neighborhoods), bicycling in the street can be comfortable and safe. In these instances, installing a bikeway is not necessary. In Humboldt County, often a wide shoulder on high-traffic streets or highways is the best (only) option for a bicyclist. This is the case when topography, narrow rights-of-way, or other physical features leave no room for a class I, II, III, or IV bikeway.

DESIGN GUIDELINES

The Bike Plan provides recommended design standards and guidelines for developing a uniform and consistent regional bikeway system. The recommendations include standards set forth by the Federal Highway Administration and Caltrans, and, by reference, the NACTO and AASHTO design guides. The Bike Plan also incorporates the recommended *Countywide Bicycle Parking Guidelines: Recommended Policies and Requirements*, developed by HCAOG (2015).

On a case-by-case basis, local agencies may seek design exceptions to established State and Federal standards, based on local conditions and environmental and economic issues. All projects must be approved by the community's Public Works Department, and in some cases Caltrans.

"Let's not design to minimum standards. Let's propose, design, and build to optimal dimensions and reduce only when absolutely necessary to meet constraints."

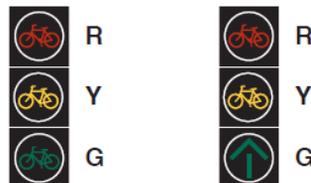
– Brett Gronemeyer,
public comment on
2012 Bike Plan

California Department of Transportation Manuals

All of the Bike Plan's recommended projects will adhere to Caltrans' *Highway Design Manual* design guidelines and the *California Manual on Uniform Traffic Control Devices (MUTCD)*, as applicable, for developing on-street and off-street bicycle facilities. The following bicycle treatments have interim approval for experimental use:

- Buffered bicycle lanes (Bike lanes with added feature of buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffer pavement is painted with diagonal cross hatching or chevron markings.)
- Contraflow bicycle lanes (Bike lanes wherein bicyclists can ride in the opposite direction of the flow of motorized traffic.)
- Bicycle boxes (An area for bicyclists at the head of a traffic lane at a signalized intersection that allows bicyclists to be at head queue during the red signal phase. Designated by pavement markings.)
- Bicycle lane extensions through intersections
- Two-stage turn queue boxes (An area, designated with pavement markings, to hold queuing bicyclists and formalize two-stage turns.)

- Bicycle signal faces (at right)



- Green-colored pavement for bike lanes

- Green sharrows Share the road arrows, an icon of a bicycle with chevrons above (pictured above).
- Alternative design for U.S. bicycle route sign (shown at right)

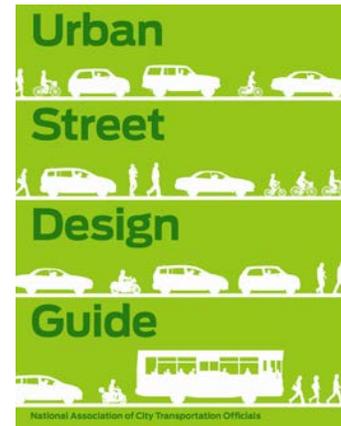
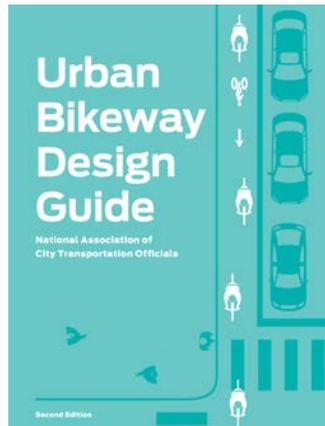


National Association of City Transportation Officials (NACTO) Guides

The Smart State Transportation Initiative (SSTI) team produced the report “California Department of Transportation: SSTI Assessment and Recommendations” (January 2014) after studying and interviewing Caltrans’ management, organization, and operations. It recommended that the “department should support, or propose if no bill is forthcoming, legislation to end the archaic practice of imposing state rules on local streets for bicycle facilities.” The report specifically recommended that Caltrans adopt “modern guidance as laid out in the NACTO Urban Street Design Guide” (AB 1193 Bill Analysis). Caltrans officially endorsed the NACTO guidelines in April, 2014. AB 1193 allows local jurisdictions to follow NACTO for local bikeways, as long as the jurisdiction has been explicit in the public record that the NACTO guidelines will serve as their design standards, and has given the public an opportunity to comment.

NACTO released the *Urban Bikeway Design Guide* (2nd Edition) in 2012. The Guide provides design standards for “innovative treatments for bike boulevards, signs, pavement markings, and intersections.” NACTO states,

Most of these treatments are not directly referenced in the current version of the *AASHTO Guide to Bikeway Facilities*, although they are virtually all (with two exceptions) permitted under the *Manual on Uniform Traffic Control Devices*.¹

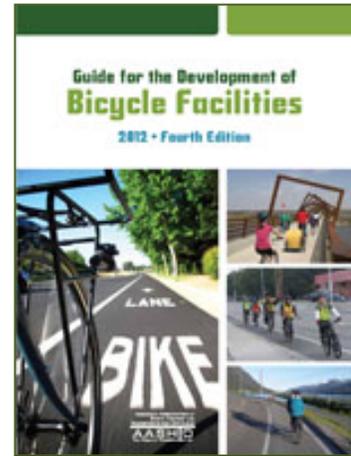


NACTO released the *Urban Street Design Guide* in September, 2013. It covers design for streets, intersections and design controls. (It is available free online at nacto.org/usdg).

¹ <http://nacto.org/publication/urban-bikeway-design-guide>. Accessed February, 2017.

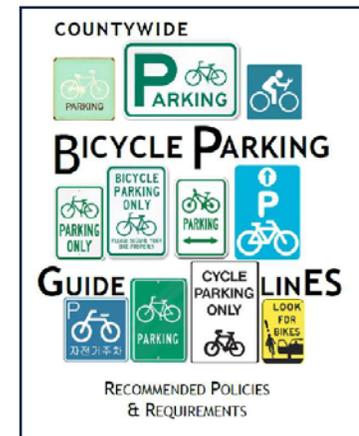
American Association of State Highway and Transportation Officials (AASHTO) Guide

AASHTO's fourth edition of the *Guide for the Development of Bicycle Facilities* came out in 2012.



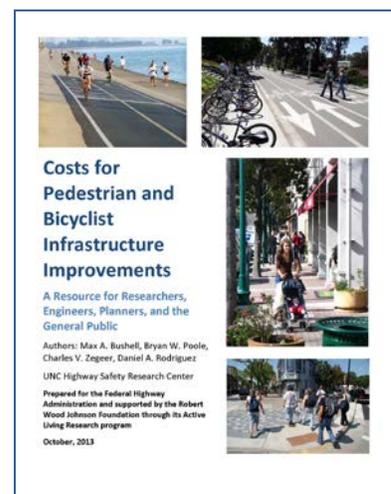
HCAOG Bicycle Parking Guidelines

HCAOG's "Countywide Bicycle Parking Guidelines: Recommended Policies and Requirements" show recommended requirements for bike parking site locations, dimensions, and clearance, as well as bike racks. The Guidelines also discuss bike parking for large events. The guidelines are born from HCAOG's *Bike Parking Sourcebook: Sample Policies, Municipal Codes & Programs*, which references the "APBP Bicycle Parking Guidelines" (2nd edition, Association of Pedestrian and Bicycle Professionals) for comprehensive, detailed design requirement. The Sourcebook was developed as part of implementing the *Regional Bicycle Plan Update 2012*. HCAOG staff developed both the Sourcebook and Guidelines with direction from the ad-hoc Bicycle Advisory Committee in 2015. (Available at www.hcaog.net/library or (707) 444-8208.)



Costs for Pedestrian and Bicyclist Infrastructure Improvements

The "Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public" (October, 2013) was prepared for the FHWA and supported by the Robert Wood Johnson Foundation through its Active Living Research program. The authors are professionals from the University of North Carolina Highway Safety Research Center. The guide is available on the Pedestrian and Bicycle Information Center (PBIC) website. <http://www.pedbikeinfo.org/data/library/details.cfm?id=4876> or http://www.pedbikeinfo.org/cms/downloads/Countermeasure%20Costs_Report_Nov2013.pdf



CONSTRAINTS AND OPPORTUNITIES

There are numerous constraints that impact bicycling and bicycle planning activities in Humboldt County:

- Limited local funds for bicycle facilities
- Limited dedicated bicycle facilities/routes
- Limited inter-city routes for bicycle travel
- Limited number of suitable roadway shoulders
- Frequent roadway failures resulting from extreme weather conditions
- Mountainous terrain outside of the County's coastal zones

Despite the challenges, Humboldt County has an opportunity to increase the number of people who bicycle to work and school by taking advantage of the following:

- The increasing availability of dedicated non-motorized funding sources.
- Access to competitive source non-motorized funds.
- Collaborative efforts to plan and implement multi-jurisdictional bicycle projects.
- Active and supportive public and elected officials.
- Existing corridors in the county where off-street bicycle paths (Class I facilities) could be located. Some of the best opportunities for off-street, long-distance, multi-use trail systems are in unused railroad corridors. The Hammond Trail is a successful rail-to-trail project. Other railroad rights-of-way with potential for trail use are: the Annie & Mary rail corridor between Manila and Arcata; the rail corridor along the South Fork of the Eel River; and the North Coast Railroad Authority railroad corridor along the Humboldt Bay (between Arcata and Eureka).

Constraints and opportunities were also identified by Humboldt County residents, as described in the following section.

REFERENCES

AB 1193 Bill Analysis (Assembly Bill 1193, 2014 Ting), Senate Rules Committee.
http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_1151-1200/ab_1193_cfa_20140822_115629_sen_floor.html

Buehler, Ralph, and Götschi, Thomas. “Moving Toward Active Transportation: How Policies Can Encourage Walking and Bicycling” *Active Living Research Review*, , January 2016. Published by the Active Living Research Program of the Robert Wood Johnson Foundation.
http://activelivingresearch.org/sites/default/files/ALR_Review_ActiveTransport_January2016.pdf
Accessed March, 2017.

Caltrans, 2017 *California State Bicycle and Pedestrian Plan* (draft). February 2017.

Fehr and Peers. (No date given.) “Multi-modal Level of Service Toolkit: Bicycling Level of Traffic Stress.”
<http://asap.fehrandpeers.com/wp-content/.../08/MMLOS-Tool-Level-of-Traffic-Stress.pdf>. Accessed March 2017.

FHWA, 2016a. “Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts.” August 2016.

FHWA, 2016b. “Strategic Agenda for Pedestrian & Bicycle Transportation.” September 2016.

Geller Roger, 2009. “Four Types of Cyclists in Portland,” City of Portland Bureau of Transportation.

GOBike Buffalo, 2016 *Buffalo Bicycle Master Plan, Final Report*. Prepared for the New York Energy Research and Development Authority, New York Dept. of Transportation, and the City of Buffalo. (Consultants ALTA Planning + Design et al.)

ICE and GTZ, 2009. (Interface for Cycling Expertise (The Netherlands) and German Technical Cooperation (GTZ, Germany) on behalf of Federal Ministry of Economic Cooperation and Development, The Netherlands.) *Cycling-Inclusive Policy Development: A Handbook*, April 2009. [pnSUTP_Cycling-inclusive-Pol...pdf.]

4 IMPLEMENTATION PROGRAMS & PROJECTS

This chapter presents the regional priorities for implementation programs and projects. The priorities are categorized by (1) bicycle parking, (2) education and promotion, and (3) bicycle route network. These regional priorities are planned for pursuing funds and implementing within the next five years. In addition, under the subsequent section entitled “Local Jurisdictions’ Future Projects,” this chapter inventories the long-term (six to 20 year) projects and programs that individual HCAOG member and committee entities identified for their respective jurisdictions. First, however, this chapter starts off briefly describing the interrelated relationship between transportation systems and the region’s land use settings.

REGIONAL & LOCAL INTERSECT

The Bike Plan is foremost a regional plan; its goal is to develop a unified, connected, and accessible regional bicycle transportation network throughout Humboldt County. Thus, the Plan’s priority programs and projects are those that will directly serve a regional purpose. In addition, the Bike Plan has a function for the local level. For one, the Plan includes projects that the Cities, County, and Tribes have proposed for bicycle facilities and programs in their own jurisdictions. Some of those projects have regional significance because they will provide connectivity that will enable a fully regional network. Other local projects or programs that are proposed may serve only localized needs, but that is also significant for increasing bicycle trips across the population countywide. Secondly, local governments can use the *Regional Bike Plan*, customized to their own purposes, should they choose to adopt their own bike or active transportation plan, or apply for an ATP grant.

TRANSPORTATION & LAND USE SETTING

HCAOG’s overall purpose is to facilitate local jurisdictions in developing a transportation system that is accessible and efficient for all users, and that seamlessly integrates an active transportation network into the fabric of the land. The scope and range of what is achieved depends largely on the existing land use patterns that a community inherits, and how they choose to build from there. Those choices dictate what prospects communities, and the region as a whole, will have for integrating active transportation choices with other land uses.

Humboldt County’s historic land-use patterns offer opportunities and constraints for integrating bicycling networks throughout the region (see Humboldt County Map {to be inserted}). Topography alone has determined part of Humboldt’s settlement pattern, resulting in higher population densities in the low, level lands around Humboldt Bay. Consequently, population centers, urban areas, and services are concentrated in the greater Humboldt Bay Area (central coastal area). The communities clustered in this general area are: the seven cities (Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Dell, and Trinidad), and unincorporated Fieldbrook, McKinleyville, Loleta, Manila, Samoa, and the Table Bluff-Wiyot Reservation. The Blue Lake and Trinidad Rancherias have tribal lands in those respective communities, as does the Bear River Band of the Rohnerville Rancheria in Loleta. In general, integrating bike connections in the Humboldt Bay area will be relatively easier due to the higher population densities, more extensive infrastructure, and flatter topography.

Unincorporated communities outside of the Humboldt Bay area extend north to Orick, northeast to Orleans-Somes Bar, east to Willow Creek, and southward to Shelter Cove on the coast and Garberville-Redway inland. Native American Tribal lands include Karuk (government offices in Happy Camp, Siskiyou County), Yurok (governmental offices in Klamath), and the Hoopa Valley Reservations. These communities in eastern Humboldt are more dispersed and rural, have smaller populations, and are generally situated in more rugged terrain. Inland areas also experience more seasonal weather than on the coast, commonly reaching 100° F temperatures in summertime and getting snow in the wintertime. These characteristics—distances, steep topography, inclement weather—can reduce the range of what people consider practical bicycle trips. Long regional bike trips may not seem viable to most; nevertheless, there are opportunities to build better regional bicycle facilities that can increase bicycle riding for shorter regional trips as well as local trips.

The incorporated cities account for one percent of the total 3,570 square miles in Humboldt County. A majority of the entire county is devoted to agriculture and timberland uses (60.2%). Another dominant use is open spaces and parks, which account for 25.7 percent of the unincorporated land use. National and State Parks account for a majority of the park land.

REGIONAL PRIORITY PROGRAMS & PROJECTS

The Bike Plan recommends implementing five priority regional programs/projects for the short-term (five fiscal years, 2017 through 2021/22). The following programs are proposed to support and enhance bicyclist safety and to encourage more people to utilize the bicycle for transportation.

I. BICYCLE PARKING

Regional Bicycle Parking Program

II. EDUCATION & PROMOTION

Regional Active Transportation Education & Encouragement Program

Regional Bicycle Guide & Map Program

III. BICYCLE ROUTE NETWORK

Humboldt Bay Trail

Short-Term Regional Priority Projects by Jurisdiction

****Note: new proposed programs may be added in the course of review/public input**

**IV?

Following the regional priorities, this chapter also updates the inventory of projects that HCAOG member and committee entities have prioritized for their respective jurisdictions/governments. These inventories are listed by jurisdiction and summarize each locale's existing bicycle facilities and

in table format, list both short-term and long-term future projects. Local projects are valuable for coordinating with and connecting to a regional system.

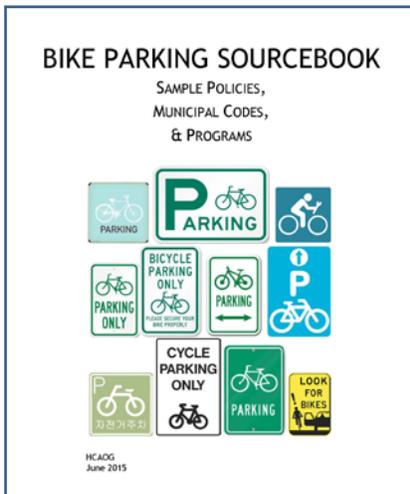
I. BICYCLE PARKING

REGIONAL BICYCLE PARKING PROGRAM

Responsibility:	HCAOG, member agencies, Caltrans District 1, local business, school districts, developers
Type:	Parking (Infrastructure & non-infrastructure)
Approximate Cost:	\$250- \$1,000 per installation; staff time
Potential Funding Sources:	ATP, OTS, RPA
Required Actions/Studies:	Survey of localized parking needs in commercial districts and other high-use areas...

The Regional Bicycle Parking Program has been designed to identify and meet the need for bicycle parking, which will enhance the overall bike network. Bicycle parking surveys are recommended to facilitate jurisdictions, and communities and neighborhoods, to prioritize their bicycle parking needs.

Existing Resources



HCAOG prepared bicycle parking guidelines, in June 2015, as part of implementing the *Regional Bicycle Plan*. HCAOG staff prepared two reports, under the direction of the 2015 ad-hoc Bicycle Advisory Committee, to assist local jurisdictions and communities plan for long-term bicycle parking, and facilitate setting standard practices for bicycle parking.

The *Bike Parking Sourcebook: Sample Policies, Municipal Codes, & Programs* (HCAOG 2015) samples from adopted plans and guidelines from around the country. It includes more design recommendations by way of referencing the standards set out comprehensively in the *APBP Bicycle Parking Guidelines* (Association of Pedestrian and Bicycle Professionals, 2010). After reviewing the Sourcebook, the ad-hoc Bicycle Advisory Committee (2015) selected design guidelines best suited to our region, presented in the *Countywide Bicycle Parking Guidelines: Recommended Policies & Requirements* (HCAOG 2015).

Recommended Policies & Requirements (HCAOG 2015).

Implementation Strategies

There are a variety of strategies to implement bicycle parking. Bicycle parking can be funded through competitive sources such as Air District Grants, California's Active Transportation Program, and TDA sources. Costs can also be subsidized by or private donations and/or small advertisements on the racks themselves. Cooperative efforts can be formed to share costs. For example, in some locations, redevelopment funds have purchased the infrastructure and the public works department installed the bike facility. The Humboldt Bay Bicycle Commuters Association has joined such cooperative installations, splitting the cost of the rack with a local business while the City of Eureka took on the task of installing the rack adjacent to the business...

An annual budget of \$5,000 to \$10,000 for installing bike racks and lockers can make a noticeable difference in just a few years. The cost of installing bike racks and lockers is generally low, particularly compared to costs for car parking. A "U" bike rack costs around \$250 (with installation) and accommodates two bikes. Bike lockers range from approximately \$1,500 to \$2,500. The cost of providing shelters for covered parking increases the cost; however, these costs can be planned into new buildings or redevelopment and other public projects.

Program Implementation

The program will further three main objectives through the following tasks:

- ◆ **Objective:** *Acquiring and installing bicycle parking in public places such as city halls, libraries, parks, schools, etc.*

Each community should survey bicycle parking to inventory assets and needs, and to identify installation sites for meeting current and future demand. Bicycle parking should be provided at all public destinations, including transit centers and bus stops, community centers, parks, schools, downtown areas, and civic buildings. All bicycle parking should be in a safe, secure, covered area (if possible), conveniently located to the main building entrance. These improvements will be incremental and as demand warrants.

Individual or groups of local agencies could seek funding to purchase and implement bicycle parking. The bicycle parking could be strictly on public property, or also available to private entities on an at-cost basis.

HCAOG staff will continue to coordinate with the Technical Advisory Committee and others to assist with surveying bike parking in central business districts, commercial areas, or other high-use areas/destinations. HCAOG staff's primary role is to serve as a resource coordinator, helping compile data and enlisting volunteers, as appropriate...

- ◆ **Objective:** *Encouraging local businesses to provide bicycle parking for their customers and employees.*

Efforts to encourage and improve bicycle parking should include communicating and building cooperative relationships with residents, business owners, renters, property owners, and other stakeholders in the subject neighborhood. For instance, member agencies should find innovative...

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

ways to work with employers where employees have expressed an interest in bike lockers. For example, lockers could be sold to businesses at a discount with air quality or other grants making up the difference.

Required bicycle parking for existing non-residential uses should be implemented as part of the building permit process.

◆ **Objective:** *Updating ordinances or policies to ensure bicycle parking is provided in new developments.*

HCAOG recommends that jurisdictions and other entities refer to the *Bike Parking Sourcebook: Sample Policies, Municipal Codes, & Programs* to plan for long-term bicycle parking. HCAOG also encourages local jurisdictions to follow the *Countywide Bicycle Parking Guidelines: Recommended Policies & Requirements* when planning and installing bicycle parking.

As a general parking standard, all new commercial development or redevelopment in excess of 5,000 gross leasable square feet should be required to provide an approved bicycle rack at the rate of a minimum of one bike-parking space per 10 employees.

HCAOG staff will continue disseminating the *Regional Bicycle Parking Guidelines* to more entities around the County, and assist jurisdictions in codifying bike parking standards, as requested.

II. EDUCATION & PROMOTION

REGIONAL ACTIVE TRANSPORTATION EDUCATION & OUTREACH PROGRAM

Responsibility:	HCAOG, member agencies, Caltrans District 1, school districts, local bicycle organizations, community members
Type:	Education and encouragement (Non-infrastructure).
Approximate Cost:	\$1,000 - \$5,000 per year plus staff time
Potential Funding Sources:	ATP, OTS, RPA, TDA, school safety grants, private sources
Required Actions/Studies:	None identified.

Bicycle ridership does not necessarily happen by infrastructure alone. In fact, perceptible gains in bicycling may not come true without some sort of outreach or education campaign. To affect change in people's behaviors long-term, non-infrastructure programs are generally required. Safe Routes to School and other active transportation programs have learned (and proved) this all across the country. Bicycle programs can be cost-effective ways to increase bicycle ridership. Effective programs can meet one or a number of goals: engage the community; enhance safety; educate bicyclists and motorists; and improve mobility. Bicycle programs need not burden agency staff or local funding resources. Many programs can be implemented and maintained by citizenry in partnership with local advocacy groups and a sponsoring agency.

Education and awareness campaigns are important components of successful active transportation programs, which incorporate all of the "6 E's":

Education – bicyclists and drivers of all ages, but particularly elementary and middle school students, are taught safety skills.

Encouragement – Programs and events encourage individuals, schools, and neighborhoods to walk and bike more.

Engineering – infrastructure improvements to make school commute routes safer.

Enforcement – various techniques are employed to ensure traffic laws are obeyed.

Evaluation – programs and projects are measured to track impacts. Surveys, trip counts, and accident data are some measures to evaluate outcomes.

Equity – Communities across a region have equal opportunities in deciding how transportation impacts (benefits and costs) are distributed, with the end result being that resources are shared fairly across communities and users, including youth, the elderly, people with disabilities, and people of all races, ethnicities and incomes.

Key participants in a successful safety and education campaign include city and county departments and officials, school districts and individual schools, parent-teacher groups, public health and social service organizations, advocacy groups, local businesses, the media, and the community at large.

Existing Encouragement Programs (Non-Infrastructure)

Various jurisdictions in Humboldt have implemented active transportation education programs in the past, and have shown commitment to delivering consistent safety and education programs to children and adults, even with limited resources available. The success of these programs has hinged on several different entities working collaboratively and pooling resources. No doubt results would be even better with sustained funding for more regional, coordinated efforts. This section highlights several of the on-going programs already in place in various jurisdictions. Thereafter, it describes programs that can be implemented regionally to support and increase bicycling around the County.

There are a number of bicycle encouragement programs in place around the County. They aim to improve bicycle safety and boost ridership. Some programs are agency-funded, others are volunteer run; most are a combination of the two. Each entity should take advantage of the success of these existing programs and the benefits they provide to the community and tourists.

Bike-to-Work Month



Bike-to-Work Day has evolved to Bike-to-Work Month, thanks to a coalition of public and non-profit outfits and private businesses, the Bike Month Humboldt Coalition.

Bike Month Humboldt events include official Bike-to-Work Days in Eureka and Arcata, celebrated on following weeks. Each Bike-to-Work Day starts off with morning commuter “energizer stations” held at the respective North Coast Co-op. At noon the Humboldt Bay Bicycle Commuters Association spearheads noon rallies, with contests and prizes for things such as the longest bicycle commute and the fastest time for fixing a flat. Other recurring, or intermittent, or past or nascent events include: Bike Shorts video night, bicycle gear swaps, free bike clinics, scavenger hunt, bike rides, minimal mass rides, bike-buddy/group commute rides (“Wheelin’ Wednesdays), and “Pancake Rides”— weekend group rides to one of the local Granges for their monthly pancake breakfast.



The **Bike Friendly Business** project, started in 2015, is a way to champion the synergistic relationship between local businesses and their bike-riding patrons. During Bike Month, participating Bike Friendly Businesses offer their own perks to all customers who bike to their stores. A helmet is usually enough proof to earn your complimentary cookie, your 10% to 50% discount, your free bar of locally handmade soap, your half-off well drink, or...you get the picture. The Bike Month Coalition does the advertising for those businesses who opt in.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment



For the past several years the active coalition members have included HCAOG, the Humboldt Bay Bicycle Commuters Association, Redwood Coast Action Agency (Natural Resource Services Division), Caltrans District 1, Humboldt County Public Health Division, the North Coast Co-op, BikesThere.com, and individuals volunteering and donating their free time. Long-standing contributions have come from our local bike shops, the Redwood Coast Mountain Bike Association, Eureka Main Street, and the City of Arcata.

Library Bikes



Arcata Library Bikes evolved from the “green bikes” program in the 1990s. Grants, donations, and volunteers have made the program happen. Volunteers repair and rebuild bicycles from donated parts to maintain a selection of bicycles for use. In its first incarnation, the program loaned over 400 bicycles. People could check out bikes with a \$20 deposit. After six months, the borrower could renew his/her bike checkout, or return it and get his/her deposit back. Later, the program added “Promise Bikes,” which were higher quality that were loaned to people who vowed to give up their car for trips within Arcata or to students who moved to Arcata without an automobile. Since 2008, the incarnation is the unofficial and discreet Arcata Bike Library, with the bike inventory housed in a red shipping crate in downtown Arcata, located near the newly completed Class I bike trail at 10th and L Streets. Days and hours of operation vary.

Bike maps and guides are also effective encouragement tools; they are described in the next Education and Promotion program.

Existing Education and Safety Programs

Safety is a major concern of both existing and potential bicyclists. For those who ride, it is typically an on-going concern or even a distraction. For those who don't ride, it is one of the most compelling reasons not to ride.

In discussing bicycle safety, it is important to separate perceived dangers from actual safety hazards. People commonly perceive riding a bike on local roads (i.e. in traffic) as unsafe because cyclists must ride in proximity to heavier, faster cars, trucks, and buses. Actual accident statistics, however, show that, based on number of users and miles traveled, a bicyclist is only marginally more likely than a motorist to sustain an injury. Fatality rates are essentially the same for bicyclists and motorists. Bicycle-vehicle accidents are much less likely to happen than bicycle-bicycle, bicycle-pedestrian accidents, or those caused by physical conditions. And, the majority of reported bicycle accidents

Humboldt Regional Bike Plan – Update 2017 DRAFT For Public Review & Comment

show the bicyclist to be at fault; generally, this involves younger bicyclists riding on the wrong side of the road or being hit broadside by a vehicle at an intersection or driveway.

Bicycle Safety & Skills Programs

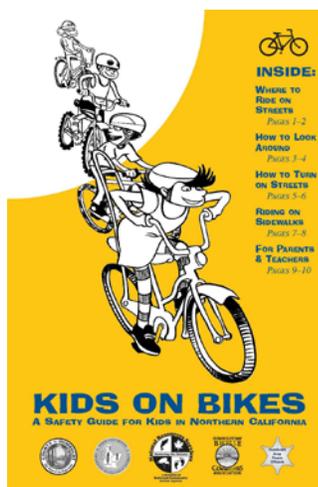
Coordinated bicycle safety events can have a positive effect on bicycle ridership because they address and appease safety concerns of potential riders and teach good riding habits. Without these programs, a forum does not exist to address safety concerns that are real or perceived. The following summarizes some of the bike education and safety programs in Humboldt County.



Commuting in Arcata on Car

Several elementary schools and middle schools are getting opportunities for bicycle and pedestrian education, from intensive one-week courses to semester- or year-long courses. Encouragement components include Walking Wednesdays/Trekking Tuesday programs, and participating in International Bike to School Days. There is even a bike mechanics class that Zane Middle School students can go to at lunchtime. Most of the bike (and pedestrian) education programs are available thanks to California Active Transportation Program (ATP) grants and/or other grants obtained by the County Department of Health and Human Services.

Local law enforcement departments are collaborative partners in several bike education and safety programs. Local police departments regularly assign officers to patrol traffic near schools during International Walk to School Day events, while students (and parents, teachers, and administrators) are traveling to school as “walking school buses” and “bicycle trains.” Some police departments have also led programs to give away bicycle helmets to youth. And, to reinforce safe habits, the City of Fortuna’s Police Department was “stopping” youngsters on bikes if they were wearing a helmet—and giving them gift coupons (e.g., for pizza) to acknowledge their smart, safe behavior.



Already established is the “**Bike Smart**” program available in Humboldt County courtesy of the Humboldt Bay Bicycle Commuters Association (HBBCA). For free, HBBCA provides a two-hour bicycle safety class for youth. Qualified HBBCA members—instructors certified by the League of American Bicyclists—teach the rules of the road with a short lecture/discussion and a bike-riding session on open streets. After completing the class, children without bike helmets can receive a free helmet courtesy of HBBCA. The “Bike Smart” program is generally offered in the summertime.



Many places are holding free **Kids’ Bike Rodeos** annually or bi-annually. In addition to mini-courses for skills practice, Bike Rodeos often include free bike helmets and helmet fittings, bike safety checks, and the crowd-pleasing bike blender smoothies. Annual bike rodeos regularly take place in Arcata (sponsored by the City of Arcata), Blue

Humboldt Regional Bike Plan – Update 2017 DRAFT For Public Review & Comment



Lake, Eureka (sponsored by Marshall Family Resource Center), Loleta, Rio Dell, and Willow Creek (sponsored by Saint Joseph Health System’s Community Resource Centers). In addition, both Eureka and Fortuna school districts have held family bike clinics to teach parents how to ride, how to ride with their children, how to adjust family bikes, and how to safely transport cargo—from children to groceries—by bicycle.

The “**Festejando Nuestra Salud/Celebrating Our Health**” Spanish-language health fair is a free event put on by the Humboldt County Department of Health and Human Services-Public Health Branch and the local Latino Community Providers’ Network (LatinoNet). The fair celebrates Binational Health Week in October. The all-day, Sunday event includes a bike safety lesson for kids (and their families) and free bike helmets and helmet fitting. The fair celebrated its tenth anniversary in 2016.

Safe Routes to School



Two task forces are proactively collaborating to continue working towards the goals of Safe Routes to School. One task force broadly covers school zones countywide, while the other concentrates on the Greater Eureka area. The Task Forces have representatives from schools (including teachers, risk managers, transportation directors, principals, parents), active transportation educators, public works departments, the County Public Health Department, HCAOG, and Redwood Coast Action Agency, which facilitates both task forces. Task Force members share information on grant funding, relevant State legislation, best practices, and the like. They also collaborate for collecting data (e.g. school surveys), and putting on active-transportation activities (e.g. bike rodeos, family bike clinics, health fairs, etc.).

Bike Books for Libraries

The ad-hoc Bicycle Advisory Committee recommended, as part of implementing the Bike Plan’s Education & Outreach Program, that HCAOG purchase bicycle-themed library books to encourage and educate children and adults to ride bicycles. Fiscal-year 2016-17 is the third year HCAOG has carried out this project, donating \$400 worth of books per year to Humboldt County Library branches. The books are for early, junior, and young adult readers, including books in Spanish.



The first **Ride for Reading** expedition in Humboldt was initiated in 2013 by BikesThere.com and has continued annually thanks to dozens of volunteers, including parents and elected officials. Ride for Reading’s mission is “to help children in low-income areas become healthy and literate.” During National Ride For Reading Week—which coincides with National Bike Month, volunteers deliver books by bike to local elementary schools, and

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

students pick a book(s) for their very own. The book deliveries are targeted to Title 1 schools.

Community Bike Kitchen



The Community Bike Kitchen opened in the summer of 2013 to be a hub of bicycle learning and activity for all ages. It is a safe, welcoming space to share bicycle knowledge, access to tools and knowledgeable mechanics, and used parts and bikes. The Earn-a-Bike program enables youth and adults alike to volunteer hours in exchange for their own bicycle—which they may have rebuilt themselves! The Kitchen is powered by volunteers, with committed leadership from a core steering committee, dedicated mechanics, and shop managers. Local residents, community groups, local bike shops and the Humboldt State University police department donate parts, tools, and used bicycles. The Bike Kitchen is in the Jefferson Community Center (an old elementary school) at 1000 B Street, Eureka.



Advocacy Groups

There are bands of biking enthusiasts and advocates throughout the county; some are official, others are informal; some are long-standing, others are ad-hoc. Mostly through volunteer efforts, these groups promote bicycle education, support local bicycle planning, and organize events ranging from races to elementary school education programs. These groups contribute significantly to promoting and enhancing the bicycling environment in Humboldt County. Partnerships with these groups can help to effectively implement many of the programs recommended in the *Bike Plan*. Collaborating with them can reduce agency staff time and related labor costs, provide sustained maintenance, and expand outreach and networking.

Cycling Associations



Humboldt Bay Bicycle Commuters Association has the primary goal of improving and encouraging bicycle commuting. The group has six meetings and newsletters (bi-monthly) each year and supports numerous bicycle-transportation-friendly endeavors in the greater Humboldt Bay region. HBBCA officers and members regularly provide feedback to local jurisdictions on planning, designing, and maintaining bicycle facilities. The HBBCA is a member of the Bike Month Humboldt Coalition, helping organize and sponsor annual Bike-to-Work events. HBBCA offers the Bike Smart training programs for youth (described above).



Formerly instituted as Bigfoot Bicycling Club the **Redwood Coast Mountain Bike Association** was formed and is sustained by a group of cyclists who ride recreationally and for transportation in the Humboldt County region. The club organizes mountain bike rides, races, and also works with local land managers to increase access, and helps by volunteering for trail building and trail maintenance. RCMBA also helps sponsor Bike Month Humboldt events.

Cycling Clubs & Rides

Informal, almost-monthly thematic rides are organized by **Bike Party Humboldt**. Rides are for all ages at a leisurely pace, with musical accompaniment. Ride venues change to different cities and different routes. The primary goal is fun, and lights and bling (and they aren't afraid of disco).

Local schools commonly serve as a venue and incubator for cycling groups, such as:

- **Humboldt State University's Cycling Team** is a campus club that organizes mountain bike rides and road races. The team competes in the Western Collegiate Cycling Conference, and has won regional conference and national championship titles in both downhill and cross-country mountain biking. In years past, HSU has also had a Cycle Learning Center campus club, which ran a mini shop staffed by volunteers dedicated to providing bicycle repairs and maintenance training.
- **South Fork High School Mountain Bike Team** – High school students and coaches compete in state competitions and advocate for improved bicycle recreation and transportation facilities.
- **Alice Birney Elementary School** established a bike club and bicycle safety



Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

education program in 2010, thanks to a champion teacher and local bicycle professionals. The program has taught 4th, 5th, and 6th graders on-bike safety skills training. The bike education is now focused on 5th graders in a year-long program. The bike club participates in National Bike-to-School Day every year.

- **Lafayette Elementary School** started its after-school bike club in 2016.

Implementation Strategies

Some barriers to implementing bicycle education and promotion programs exist. First, their implementation requires organizational leadership, funding, follow-through, and maintenance. Drawing on a variety of community resources and maintaining community support is essential to ensure that the policies, programs, and projects within the Regional Bicycle Plan are implemented over time.

Below are some strategies that will enhance or expand education and outreach efforts to make bicycling more accessible to more people in Humboldt County. Some of these implementation strategies are in effect and ongoing. Implementing fresh strategies is important for keeping on-going efforts alive and thriving.

Media Campaigns

Campaigns promoting non-motorized transportation aim to get people interested in bicycling and walking as means of transportation. Awareness is raised through literature and public service announcements. Examples of public service announcement slogans include, “See Humboldt County by the seat of your pants. Bike!” and “See Humboldt County on your feet. Walk!” Promotional slogans can be featured on bumper stickers and posters, bookmarks, book covers, etc. The print campaign can also include guides, brochures, and maps, such as the Humboldt Bay Area Bike Map (another regional priority Education and Promotion Program, described below). To offset the program costs, sponsors can be secured. Sponsors could have their logos added to the bottom of the promotional posters. Access to the materials would be promoted on sponsors’ web sites. The campaign literature and media would be distributed around Humboldt to businesses and community groups. Brochures would be provided to local law enforcement agencies to distribute to people when cited for moving violations. Brochures and posters would be distributed communitywide to reach a broad range of ages and income groups. Some possible locations are:

schools	city halls	Chambers of Commerce
libraries	tribal centers	visitor bureaus
community centers	retail sites	hotels and motels
worksites	social services	DMV offices
		government agencies

Education and Encouragement Programs for Children and Adults

Bike Fairs can offer a safe place for inexperienced bicyclists to get information and improve their bicycling skills. Bike clinics would discuss the rights and responsibilities of bicyclists, the laws governing bicyclists, bicycling conditions and facilities in Humboldt County. Practical training would

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

occur on an obstacle course. Once participants have mastered the basic skills, they would ride on the street with a qualified instructor. Fair booths would also showcase bike gear.

Bicycle Races. The region is well positioned to capitalize on the growing interest in on-road and off-road bicycle races and criteriums. Events would need to be sponsored by local businesses, and involve some promotion, insurance, and development of adequate circuits for all levels of riders. It is not unusual for these events to draw up to 1,000 riders and more spectators, who bring additional “tourist dollars” into the local economy. Local agencies can co-sponsor, possibly underwriting some of the expense, such as traffic control, street closures, or police time.

Local agencies should encourage event organizers to include events for less experienced cyclists. For example, in exchange for underwriting part of the costs of a race the local agency could require the event promoters to hold short, fun races or other activities for kids and families, or a bike tour for novice riders, or a bicycle repair and maintenance workshop.

Bicycle Rodeos. ~~There are Kids’ Bike Rodeos held annually in several communities in Humboldt (described under Existing Programs, above.)~~ Community-based rodeos can be conducted for families of school-aged children. Bike rodeos usually include: a safety skills course, a spectator area, helmet-fitting lessons, biking instruction, games. These community-based rodeos could be held annually in concert with major community events, such as the County Fair or Bike-to-Work Month. Members of local law enforcement agencies and volunteer community members—including parents, senior citizens, bike enthusiasts, and students—can help staff bike rodeos.

Safe Routes to School. The purpose of Safe Routes to School (SR2S) programs is to identify and improve school commute routes to increase the number of students who walk and bicycle to school. Identifying and improving routes for children to walk and bicycle to school is one of the most cost effective means of reducing school-related traffic congestion. ~~Humboldt County has had a Countywide SRTS Task Force and a Greater Eureka SR2S Task Force for over five years. Regular meetings are held at the Department of Public Health’s Community Wellness Center in Eureka, facilitated by Redwood Coast Action Agency–Natural Resource Services Division staff.~~

Education Curriculum. Curricula should be implemented in pre-schools, elementary schools, and middle schools throughout the County. Each grade-level program would include basic information, demonstrations, activities, and printed material. The basics of a model curriculum include the following lessons:

Pre-school, kindergarten, 1st, 2nd, 3rd grades: Stopping before crossing the street; recognizing physical barriers; model street crossing and visual barriers; neighborhood walks.

4th, 5th, and 6th grades: Benefits of bicycling as a viable mode of transportation; recognizing and avoiding common bicycle collisions; understanding motorists’ behaviors, rights, and responsibilities; knowing the California Vehicle Code governing bicyclists; choosing and fitting bicycle helmets; bicycle maintenance, and repair; physical, social, and economic consequences of bicycle collisions; traffic knowledge assessment and skills.

Middle School & High School: Topics outlined above, plus: benefits of bicycling as a mode of transportation and environmental, social, and economic benefits; how to safely share the road as a bicyclist, pedestrian, and motorist.

Education efforts include messages and trainings aimed at reducing the most common types of bicycle and pedestrian collisions. The most common reported bicycle incident in California involves a young person (between 8 and 16 years of age) riding on the wrong side of the road in the evening hours. Studies around California consistently show that the most incidents occur directly adjacent to elementary, middle, and high schools. Important bike skills to teach children and less-experienced adult bicyclists are how to negotiate intersections and make turns on city streets.

~~Adult/driver education lessons focus on laws for bicyclists, pedestrians and motorists. Awareness campaigns targeted to drivers often focus on raising motorists' awareness that bicycling and walking are accepted and legitimate modes of travel, and reinforce the message that drivers are responsible for operating their vehicles so as to not endanger non-motorized travelers. Awareness campaigns targeted to bicyclists and pedestrians often teach them to be aware of safety hazards, and how to safely navigate city streets, an environment that favors the automobile. Education for youth and adults may also include bike-riding skills courses and practice riding with traffic on local streets.~~

Program Implementation

The Bike Plan recommends new programs appropriate for the region. Recommended programs will require one or more project sponsors, organizational leadership, funding, follow-through, and maintenance to get even more residents bicycling (and walking) more often. ~~Funding programs can come from a number of potential sources, including Office of Traffic Safety Grants, ATP grants, school safety grants, public health partnerships, private grants, and the general fund.~~

Program implementation usually falls under the purview of a public agency, local non-profit organization, or in some cases a school. The best results are achieved when multiple organizations partner together, resulting in wider promotion, interest, and patronage. Although the cost of implementation for programs is relatively inexpensive, finding outside funding can be challenging. Many capital grant programs for construction projects allow a portion of expenditures on educational and promotional materials. Agencies can assist with planning and marketing resources, including the American Automobile Association, the League of American Bicyclists, Federal Highway Administration, ~~National Safe Routes to School Partnership, and the California Active Transportation Resource Center (ATRC, casaferoutestoschool.org).~~

The effectiveness of community safety and education programs can be measured by monitoring citywide bicycle and pedestrian collision data and mode split numbers for adult and school commuters. Jurisdictions around the state and nation have detected significant reductions in the number of bicycle and pedestrian accidents after the successful implementation of safety and education campaigns. Pre- and post-project surveys can also help identify target populations and responses to education campaigns.

~~HCAOG shall continue efforts to promote bicycling through education and encouragement activities, including, but not limited to, maintaining HCAOG's role in the Bike Month Humboldt Coalition, planning and implementing Bike Month Humboldt and leading the Bicycle-Friendly Business project and the Humboldt Bike Challenge fundraiser for the Humboldt Bay Trail; expanding outreach and education partnerships with other organizations and businesses; and~~

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

continuing the library book program. HCAOG will continue to participate with the State-level Active Transportation Program Technical Advisory Committee, whether as an appointed representative or as an active general participant.

REGIONAL BICYCLE GUIDE & MAP

Responsibility:	HCAOG, member agencies, Caltrans District 1
Type:	Education and encouragement (Non-infrastructure)
Approximate Cost:	\$5,000 - \$15,000 for map update and reprints as needed. \$10,000 to \$25,000 for expanded, web-based map.
Potential Funding Sources:	ATP, TDA, OTS, RPA, private sources
Required Actions/Studies:	Research available resources for mapping, designing, and maintaining web-based map/guide. Assess costs, accessibility, and maintenance needs.

Bicycle maps are an essential tool for informing residents and visitors of the region's bike network, and are valuable tools for promoting bicycling. Maps can persuade first-time riders to give bicycling a try, helping them plan routes compatible with their riding level and trip purpose, as well as offering safety tips and rules of the road.

Existing Guides



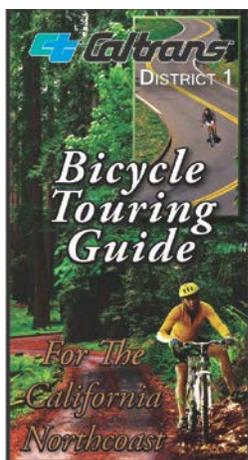
Humboldt Bay Area Bike Map

Humboldt Bay Area Bike Map is the region's most comprehensive guide to cycling routes and related safety information. As the name implies, the map covers the Humboldt Bay region: the areas of McKinleyville/Arcata and the Humboldt State University campus, to Eureka/Manila, College of the Redwoods campus, and Fortuna. The map clearly indicates the Pacific Coast Bike Route as well as local bicycle paths and bicycle lanes, plus the level of difficulty, and appropriateness for family bicycling. In addition, the map shares bike safety and transit tips, and highlights points of interest, local events, services, and other resources.

The bike maps are given away for free at local bookstores, bike shops, hotels, and visitor centers, and the map can be viewed on-line at www.naturalresourceservices.org/publications and www.hcaog.net/humboldt-bay-area-bike-map.

The Natural Resources Service Division of the Redwood Community Action Agency developed the original map through funding from the North Coast Unified Air Quality Management District. The 2012 edition was reprinted with funds from: the California Bicycle Transportation Account, Humboldt Area Foundation, PG&E, Humboldt County Public Works Department,

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment



City of Arcata, City of Eureka, Humboldt State University, St. Joseph Hospital System, Humboldt Bay Bicycle Commuters Association, Green Wheels, Pacific Outfitters and individual donations.

Caltrans' Bicycle Touring Guide

Caltrans District 1 offers a free 48-page Bicycle Touring Guide of the County's highways, with maps, points of interest, and elevation charts.

Program Strategies

Standard information to include in bike guides includes the following:

- Maps highlighting routes and sites
- Rules of the road and sidewalk
- Information/hotline number
- Available bike parking and facilities (showers and lockers)
- Share the Road (message)
- Where to rent/purchase bicycles
- Bike shop information

Keeping the *Humboldt Bay Area Bike Map* readily accessible and up-to-date are keys to maximizing its effectiveness. The map should be promoted regularly and continuously, and distributed countywide. Map marketing efforts could also be expanded, from print ads and PSAs to making stacks available at tabling events around the county. Print copies should be regularly available at local bike shops, bookstores, markets and other businesses, civic centers, recreation and visitor centers, and schools. The map could be posted at kiosks in public places and at transit facilities.

Keeping the map up-to-date technologically is also key to maximizing its use and benefits. The map should be available electronically in on-line and down-loadable applications that are user-friendly and widely accessible.

Program Implementation

The current Bike Map (2nd edition) was printed in 2012; HCAOG and other advocates are interested in keeping the map current. The Bike Map will be updated to a web-based version, which will also be print-friendly. In 2017, HCAOG initiated planning and researching resources and options for developing an online map, with the objective of upgrading the Bike Map into a more



Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

comprehensive active transportation guide. In addition to mapping the regional bicycle network, the conceptual “Humboldt County Bicycle Facilities & Trail Map” would include the regional transit network, recreational trails, and open space areas. Printed copies will also be produced, following funding strategies that were enlisted for the previous printings (i.e., grant funding, business and organization sponsorships, private donations, and other fundraising).

HCAOG budgeted \$6,80.0 (FY 2016-17) for initial research to identify existing GIS databases and mapping and to survey web-based mapping software and applications. Future funding will be required for next steps, including conceptual designs, mapping, software/application programming, developing funding strategy for both one-time and ongoing costs, pursuing funding, public outreach, and marketing.

III. BICYCLE ROUTE NETWORK

HUMBOLDT BAY TRAIL

Responsibility:	HCAOG, City of Arcata, City of Eureka, County of Humboldt, Caltrans District 1
Type:	Class I facility
Approximate Cost:	\$20.3 to \$23.9 million for ROW, construction, and environmental mitigation
Potential Funding Sources:	ATP, OTS, STIP, TDA, TIGER Grant, Coastal Conservancy, General Funds
Required Actions/Studies:	Development plans, regulatory permits (see below)

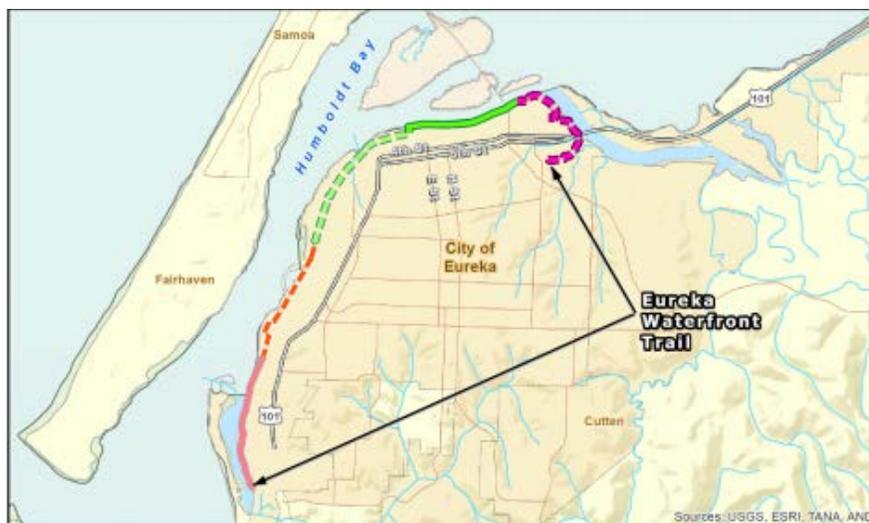
The Humboldt Bay Trail is a regional priority for creating a network of trails centered around the eastern/southeastern side of the bay. The original concept of the Humboldt Bay Trail focused on the “Arcata to Eureka segment,” a 6.25-mile Class I trail connecting the Cities of Arcata and Eureka. The Humboldt Bay Trail is now considered as three primary segments: Bay Trail North, Bay Trail South, and the Eureka Waterfront Trail. When fully constructed, the Humboldt Bay Trail will be a significant addition to the California Coastal Trail because it will close a significant gap where currently cyclists must ride on the shoulder of Highway 101.

The Bay Trail North and South follow the existing North Coast Railroad Authority’s railroad right-of-way and the Caltrans’ Highway 101 corridor on the east side of Humboldt Bay.

- **Bay Trail North** (Samoa Blvd in Arcata to Bracut Industrial Park) will connect to the Arcata Rail with Trail to the north and continue south to the City of Arcata’s southern boundary. The City of Arcata started clearing the site in early 2017 and plans to construct the trail through the fall. Caltrans will be implementing a large-scale wetland mitigation project; as part of Caltrans’ project, they have taken responsibility for incorporating, most—and possibly all—of the wetland mitigations required for the Bay Trail North segment.
- **Bay Trail South** (Bayside Cutoff to Eureka) is within the County of Humboldt jurisdiction. This segment will connect the trail to the Eureka Waterfront Trail. The County began working towards engineering and permitting in 2016-2017, and will soon begin addressing right-of-way at Bracut Industrial Park with the private landowner. The existing physical conditions and right-of-way make this a considerably complex project.

The **Eureka Waterfront Trail** will provide a continuous 6.3-mile coastal bicycle trail through the City of Eureka. The City completed construction of two of three phases in 2016, connecting the southern Hikshari’ Trail at Truesdale Street northward to Del Norte Street (phases A), and Del Norte Street north to C Street (phases B). The City began constructing the last segment from

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment



Eureka Waterfront Trail Map

Source: <http://www.ci.eureka.ca.gov/depts/pnr/trails.asp>, May 2017

Halvorsen Trail to Tydd Street (Phase C) in 2017, to complete the trail with a 600' boardwalk near Eureka slough. The entire trail is scheduled to be completed by October 2018.

Existing Studies

The *Humboldt County Bicycle Facilities Planning Project* in 1997 found substantial demand for a Class I facility between Arcata and Eureka, as well as for improving bicycling conditions on Old Arcata Road and State Route 255. The *Humboldt Bay Trails Feasibility Study* (2001) was developed to recommend projects and programs that would increase non-motorized access around Humboldt Bay. The Study recommended three top priority projects for the bicycle network, all of which have since been constructed or are in construction (Yeah!!):

- “Eureka’s Elk River Wildlife Sanctuary Access Project” — The Hishari’ Trail The multi-use (Class 1) Hikshari’ Trail stretches 1.5 miles along the Elk River and through the Elk River Wildlife Sanctuary.
- “Arcata-Eureka 101 Corridor Bicycle Path” — *The Humboldt Bay Trail Feasibility Study: Arcata to Eureka* (2007) examined the feasibility of a multi-use path (Class I) along the eastern edge of Humboldt Bay between the cities of Arcata and Eureka.
- “Waterfront Drive Pathway Project” — Two of the three phases of the Eureka Waterfront Trail have been built, connecting gaps between Hikshari’ Trail and Palco Marsh (behind Bayshore Mall).

Humboldt Bay Trails Feasibility Study also showed these projects had support and required more research:

- Expanding the California Coastal (Hammond) Trail south of McKinleyville (building segments between the Mad River and Table Bluff);

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

- Developing an Arcata Bay Levee Trail from Arcata to the Mad River Slough; and
- Improving bicycle and pedestrian access on the Samoa Bridge.

Implementation Strategies

The Bay Trail corridor runs through the jurisdictions of the County of Humboldt, and Cities of Arcata and Eureka. These three jurisdictions will have to review the project to ensure it is consistent with their General Plans and Local Coastal Plans. Several state and federal regulatory agencies will need to permit and oversee how the Bay Trail is planned, constructed, and/or maintained, including:

- **Public Utilities Commission:** setbacks from the centerline of the railroad to the trail edge, at-grade crossings, and separation or barriers between the railroad and multi-use trail.
- **Coastal Commission:** consistency with the Local Coastal Program for development within the Coastal Zone, and filling of any wetland areas (State Public Resource Code 30233).
- **U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service:** regulate project components that would potentially impact wetlands and rare and endangered species.

Multi-jurisdictional support is critical to develop a long-term management and financing structure for the Bay Trail. To proceed with planning, engineering, environmental review, and construction phases of the project, a “lead agency” will be required. A multi-jurisdictional management agreement between agencies with jurisdictional relationship to the project corridor could be brokered.

Adopt-A-Trail

Although there are few Class I paths in Humboldt County presently, the desire to build more is high. Once a trail is in place, maintaining the trail is essential to preserve the integrity of the investment. On-going trail maintenance can be a significant expense for local agencies; for instance, weed abatement, sweeping, trash removal, and other minor repairs can cost more than \$4,000 per mile annually. One strategy to reduce routine maintenance is to establish an “Adopt-a-Trail” program. Such programs have local businesses and organizations “adopt” a trail, similar to the way non-governmental entities adopt segments of the highway system. Small signs located along the pathway would identify supporters, acknowledging their contribution. Parks, community services, local employers, or other groups may administer this program. Support would be in the form of a commitment to perform some of the maintenance duties (weed abatement, trash removal) or pay for upkeep activities. The National Parks and the U.S. Forest Service routinely employ adopt-a-trail programs with great success.

Program Implementation

Jurisdictions continue to seek and secure funds. The ad-hoc 101 Corridor Bay Trail Committee meets regularly to plan and coordinate building the trail. (HCAOG facilitates the Committee’s meetings.)

Humboldt Bay Trail Fund

This fund was set-up at the Humboldt Area Foundation to accept donations for the future construction and maintenance of this regional trail. During Bike Month, the Bike Month Humboldt Coalition hosts the Humboldt Bike Challenge as part of the National Bike Challenge. The Coalition created a Bay Trail Challenge Team whose riders opt-in to fundraise for the Humboldt Bay Trail Fund. In its first year (2016), the 11-member team raised over \$1,500.

SHORT-TERM REGIONAL PRIORITY BICYCLE PROJECTS BY JURISDICTION

Communities throughout Humboldt have proposed multi-use paths and trails that would create, expand, or enhance a regional bicycle network. Some of the most popular (or more do-able) projects have had enough support to stimulate feasibility studies and other assessments. These proposed projects are summarized briefly below, with the most recent reports listed first.

Building and maintaining the 5-year priority projects calls for adding or redesigning approximately 37.5 [TBD](#) miles, with an estimated cost of approximately \$4.9 million [TBD](#).

{Bike projects' studies are moved here from Ch. 1 of the 2012 bike plan}

Proposed Regional Trails with New Studies

Projects with new studies (produced after the 2012 Bike Plan Update); most recent are listed first:

Prairie Creek Gateway Trail

The proposed Prairie Creek Gateway Trail would improve non-motorized access through Redwood National & State Parks at the former Orick Mill Site A, 1.5 miles north of the town of Orick. The Save the Redwoods League owns the property and envisions establishing a trail network and a new visitor center. The proposed project would create a new regional trail that would connect with the existing inland trail system at Lady Bird Johnson Grove in the Redwood National Park, and the Tall Trees Grove in Prairie Creek State Park. Of local, regional, and statewide importance, the Gateway Trail would fill a gap in the California Coastal Trail (CCT) and Caltrans' designated Pacific Coast Bike Route (PCBR). Under existing conditions, the CCT and PCBR traverse along Highway 101 in this area; "(h)owever, because this section of the highway is narrow and winding with inadequate safety margins, it is not ideal for either the PCBR or the CCT, and is therefore designated a 'gap' in the CCT" (California Coastal Conservancy, 2015).

This corridor concept was identified as a future preferred route and a priority project for the CCT in the "Humboldt County Coastal Trail Implementation Strategy" (2011). A proposed trail alignment is recommended in the *Prairie Creek Gateway Trail Plan (2017)*. It proposes a bike trail running approximately 1.2 miles long north-south that would become the new CCT alignment. The *Prairie Creek Gateway Trail Plan* also examines trail management strategies, next steps for developing the trail, and potential funding sources.

John Campbell Memorial Greenway and Strongs Creek Trail

This proposed greenway, or linear park, and trail would create a dedicated bicycle and pedestrian trail, allowing approximately 2.5 miles of non-motorized east-west connectivity from Riverwalk Drive near the Eel River to Rohnerville Road near Newburg Park. The City of Fortuna prepared the *John Campbell Memorial Greenway and Strongs Creek Trail Master Plan* in 2014. In it the City proposes a primary alignment that generally follows Strongs Creek. In addition, the Greenway & Trail Master Plan outlines additional connecting segments that would increase access to the main trail from nearby neighborhoods and to commercial retail centers, the River Lodge, and Newburg Park.

Eureka to Scotia Trail Corridor

The Eureka to Scotia Trail Corridor concept was borne out of the vision to extend the proposed Humboldt Bay Trail south to more communities, to create a fuller regional trail network. The Eureka to Scotia Trail Corridor would take up the existing southern terminus of the Eureka Waterfront Trail, and continue a trail southward along the east side of Humboldt Bay into the Eel River Valley. The “Eureka to Scotia Trail Corridor Assessment” (HCAOG, 2016) provides a preliminary evaluation (or a high-level overview) of potential trail connections. The assessment identifies conceptual alignments for a network of rail-with-trail projects, alternative separated trails, and on-street bikeway facilities to serve the communities from Eureka to Scotia.



Little River Trail

The Little River Trail (LRT) concept proposes to close the gap in the California Coastal Trail between the Hammond Coastal Trail and the communities of Westhaven and Trinidad by providing an active-transportation alternative to Highway 101. The LRT would create a safe corridor for pedestrians and bicyclists to cross the Little River, where currently Highway 101 is the only public right-of-way. The Redwood Community Action Agency developed “The Little River Trail Feasibility Study” in 2014 (with funding from the State Coastal Conservancy), assessing potential alignments for the trail to connect the Hammond Coastal Trail’s northern terminus at Clam Beach Road to Scenic Drive in Westhaven, and link Moonstone Beach and Little River State Beach.

Proposed Regional Trails Studied Previously

The following summarizes regional trail projects that have been studied and planned for, although no new studies have been prepared since the 2012 Bike Plan Update. Some are already partially built or designated, although gaps or other limits to access may remain. Trail projects are listed alphabetically.

Annie & Mary Trail

Known colloquially as the Annie & Mary Railroad, the Arcata and Mad River Railroad corridor traverses 6.8-miles from Arcata, through Glendale and Blue Lake, and ends in the town of Korbel.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Because trains have not run on this line since 1992 and may not run for some time, there is wide community and jurisdictional support for railbanking the railroad corridor for interim use as the Annie and Mary Trail. The *Annie & Mary Rail-Trail Feasibility Study* (prepared for HCAOG in 2003) recommended railbanking the corridor for it to be used for non-rail purposes. The *Annie & Mary Trail—Next Steps* study (prepared for HCAOG in 2008) concluded that the next two key tasks were: (1) Applicant must secure an “interest in the property”; and (2) complete environmental review to comply with CEQA/NEPA. HCAOG and the County of Humboldt have been proceeding with due diligence efforts to determine railroad right-of-way and assess environmental conditions. In 2016, the City of Blue Lake did project research and public outreach for the segment that would connect Blue Lake and Glendale. They applied for a California ATP-Cycle 3 grant; but were not awarded.

Avenue of the Giants— Redwood Pathways Trail Network

Residents of the nine rural communities along the Avenue of the Giants (SR 254) are interested in establishing a multi-use pathway parallel to the Avenue’s 32-mile scenic drive among redwood groves and along the Eel River. Most of the pathway would be located in Humboldt Redwoods State Park with some private property also involved (*Avenue of the Giants Community Plan, 2000*).

The pathway’s feasibility was studied in the *Redwood Pathways Implementation Strategy* (2002), which proposes 32 projects for enhancing non-motorized use and access along the Avenue of the Giants. The two “priority projects” are:

- The South Fork High Trail, approximately six miles in length, to stretch from Miranda to Myers Flat paralleling the west side of the Avenue (SR 254), along the river.
- The Garberville-Benbow River Trail to provide bicyclists a scenic alternative to Highway 101. The strategy outlines several options for the proposed route.

California Coastal Trail (CCT)



The vision for the California Coastal Trail (CCT) is a continuous interconnected public trail system along the California coastline, as close to the ocean as possible. The CCT primarily has access for walking and hiking, and, as opportunities allow, it accommodates wheelchair users, bicyclists, and equestrians. Where no other alternative path exists, the trail may continue along the road shoulder until it can connect to another path. The goal is for the CCT to connect to existing and proposed local trail systems as much as possible. The CCT implements policies of the California Coastal Act which promote non-motorized transportation.

The State of California Coastal Conservancy developed *Completing the California Coastal Trail* (2003). The State report envisions 154 miles of CCT in Humboldt County, with the status summarized as:

Improvements Needed to Complete the Coastal Trail (estimated linear mileage)

	Highway corridor improvements	Acquisition/construction on private lands	Construction on public lands	Current improvements adequate	Total CCT miles
Statewide	245	269	245	548	1,307
Humboldt	3	50	9	92	154

Source: <http://californiacoastaltrail.info/cms/pages/trail/done.html>, accessed February, 2017.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

The Coastal Conservancy funded local planning for the CCT, which was conducted collaboratively in 2010, and led by the Natural Resources Division of Redwood Coast Action Agency (RCAA). The culminating report is the *Humboldt County Coastal Trail Implementation Strategy* (January, 2011). The Strategy recommends trail alignments and design standards, and recommends actions by jurisdiction.

Hammond Coastal Trail

The Hammond Coastal Trail stretches 5.5 miles from the Hammond Bridge northward to Clam Beach County Park in McKinleyville. The multi-use trail is ADA-accessible and accommodates hiking, biking, and equestrians. The trail is a segment of the Pacific Coast Bike Route and the California Coastal Trail.

The *Hammond Coastal Trail Extension Analysis: From Trinidad to Fortuna* (2001) (prepared by RCAA NRS for the County of Humboldt) analyzed alternative routes to extend the trail northward to Trinidad, including crossing Little River (see Little River Trail, above). The *Hammond Coastal Trail–South Implementation Strategy Report* (2005) (prepared by RCAA for California Coastal Conservancy) explored how to extend the Hammond Trail through the Arcata Bottoms. The report recommended three alternatives: (1) a new trail following the abandoned railroad right-of-way south of the Hammond Bridge; (2) improving (widening) Mad River Road to accommodate a multi-use pathway; or (3) developing a trail along the Mad River south levee from a County-owned parcel and Highway 101. The three alternative routes were studied further in 2008 in the *Hammond Trail Extension–Next Steps* study (2008) (prepared by Alta Planning + Design for HCAOG). It concluded that the Mad River Road alternative would be the easiest to implement. Multi-jurisdictional coordination and support between the County of Humboldt, City of Arcata, Caltrans, HCAOG, State Coastal Conservancy, and California State Parks is critical for future Hammond Trail extensions.

In the near term, the County of Humboldt’s first priority is to replace the 540-foot Hammond Trail Bridge, which is deteriorating from corrosion. The County is seeking funding to replace the bridge circa 2021-2022, before the existing bridge must be taken out of service.



Pacific Coast Bike Route



In California, the Pacific Coast Bike Route, or PCBR, begins on Highway 101 at the California/Oregon State line, and ends 1,000 miles south, adjacent to Interstate 5 at the Mexican border. In our region, the PCBR travels along Highway 101 Humboldt County, the PCB

The *Pacific Coast Bike Route Study* was prepared in 2003 by HCAOG, MCOG (Mendocino Council of Governments) and LTOCO (Local Transportation Commission) to provide guidance and establish priorities for improving facilities for touring cyclists in the US 101 corridor within Caltrans District 1. The PCBR study recommends facility improvements and route alternatives through the county regions of Del Norte, Humboldt, and Mendocino.

State Route 255 through Manila

The *Manila Community Transportation Plan, Phase I (2003) and Phase II (2005)*, was prepared (by W-Trans) for the Manila Community Services District. Phase I focused on community outreach; Phase II then provided justification for improvements and recommended treatments for improving bicycle and pedestrian safety along Highway 255. The Plan proposes a potential project of developing a multi-use trail utilizing the NCRA rail corridor through Manila (between Pacific Avenue/Dean Street/Peninsula Drive intersection and just north of Ward Street). The NCRA corridor through Manila is approximately two miles (from Vera Linda Lane on the northern end to Peninsula Drive on the southern end).

SHORT-TERM REGIONAL PRIORITY PROJECTS BY JURISDICTION

Outlined below are the primary projects that local jurisdictions have identified for implementing in the short-term (next five years). Each jurisdiction's full complement of proposed bicycle projects are described in the next section.

Responsibility: CITY OF ARCATA

Previous priority project completed:

2016: Foster Avenue Extension (Sunset Ave. to Alliance Road) – Class I and Class II, 0.5 miles.

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2017 TBD \$s):	Required Studies:
11th Street Corridor from Janes Road to Bayview Street	II/III	1.5	22,500	Public input
F Street 7 th Street to 14th Street	I / II	0.4	7,000	Feasibility/impact analysis
Sunset Avenue (east) from LK Wood Blvd to Jay Street	I	0.25	137,500	Feasibility analysis
Samoa Boulevard from Union Street to Crescent Way	II	0.25	7,500	N/A
<u>New priority project – 2017 update:</u> <u>Humboldt Bay Trail North</u> <u>Samoa Boulevard (SR 255) to Bracut marsh</u>	<u>I / II</u>	<u>2.5</u>	<u>\$4.8M (in 2017 \$s) for permit, ROW, and construction</u>	<u>N/A</u>

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Responsibility: CITY OF BLUE LAKE

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2017 \$):	Required Studies:
Greenwood Road from Blue Lake Blvd to Railroad Avenue	III*	0.3	8,000	
Annie and Mary Rail Trail Pathway from Chartin to Hatchery Road	I	1.2	1,500,000	CEQA, design, trail crossing design, engineering

Responsibility: CITY OF EUREKA

Projects completed since last update:

2016: Eureka Waterfront Trail-Phase A (Del Norte to Truesdale Street). – Class I, approximately 1.2 miles.

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2017 TBD \$):	Required Studies:
H Street/Campton Road from Harris Street to City Limits	II	0.6	46,425	N/A
C Street from Henderson Street to Waterfront Dr.	III*	1.5	120,000	N/A

Responsibility: CITY OF FERNDALE

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2017 TBD \$):	Required Studies:
5th Street from Arlington Avenue to Ocean	III*	0.6	8,300	N/A
Arlington Avenue from Main Street to 5 th Street	III*	0.3	4,970	N/A

Responsibility: CITY OF FORTUNA

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2017 TBD \$):	Required Studies:
Main Street from US 101 to Rohnerville Road	II	1.2	\$61,553	N/A
Rohnerville Road from Main Street to South City Limits	II	3.3	\$165,720	

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Responsibility: CITY OF RIO DELL

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2012 \$):	Required Studies:
Center Street				
Wildwood Ave. to Ireland Ave.	II	0.3	\$5,840	Feasibility analysis
School Access Trail				
Pathway from back of school to Davis Street	I	0.2		Feasibility analysis, ROW, design, engineering, CEQA

Responsibility: TRINIDAD

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2017 \$):	Required Studies:
Main Street/West Haven Drive				
East city limit to Trinity Street	III*	0.2	\$1,200	N/A
Trinity Street				
From Main Street to Edwards	III*	0.2	\$1,200 (construction)	Feasibility analysis, ROW, design, engineering, CEQA
<i><u>New priority project – 2017 update:</u></i>				
Van Wycke Trail	I, II, & III	0.3	\$714,000	

Responsibility: COUNTY OF HUMBOLDT

5-Year Priority Projects:	Class:	Length (miles):	Cost Estimate (2017 TBD \$):	Required Studies:
Annie and Mary Rail Trail				
Arcata City Limits to Blue Lake City Limits	I	3.4	\$903,000	CEQA review, design, engineering
Humboldt Bay Trail South				
(Eureka–Arcata Corridor) Waterfront Drive (Eureka) to Indianola Cutoff/Bracut Marsh	I	6.4	\$3,520,000 (construction)	Feasibility analysis, ROW, design, engineering, CEQA
Hoopa Path (SR 96)	I	5.4	\$75,000	Design study
Central Avenue (McKinleyville)				
US 101 to Railroad Avenue	II	4.1	\$310,125	Feasibility analysis
Garberville – Redway Multi-Use Path Study	I	5.4	\$20,000	
<i><u>New priority project – 2017 update:</u></i>				
Manila Bike Path				
Separated bike-ped path west of Hwy 255 from Dean St/Pacific Ave intersection to Carlson Ave intersection	I	0.5	\$300,00 (2017 \$)	Environmental, ROW, design

LOCAL JURISDICTIONS’ FUTURE PROJECTS (LONG-TERM)

This section updates the regional bikeway system inventory. It includes regional routes that have been identified in previous planning efforts that remain un-constructed, as well as new routes identified through this Plan update.

Building and maintaining the desired regional bicycle system over the next 20 years (the Bicycle Plan’s planning horizon) calls for adding or redesigning approximately 515 miles {TBD} of bikeways to connect all cities and unincorporated areas in Humboldt, as well as adjacent counties. The estimated cost is approximately \$27.26\$18.5 million {TBD} (in 2017 dollars) over the Bike Plan’s 20-year planning horizon (2017/18 to 2037/38). (The 5-year priority infrastructure projects amount to 38 {TBD} miles of bikeways with an estimated cost of approximately \$4.9 {TBD} million.)

Project Ranking Criteria

The criteria that the respective jurisdictions used to rank their projects are defined in Table 4.1, below. The criteria are consistent with that used in HCAOG’s 2010 *Humboldt County Regional Trails Master Plan*.

Over time changes will occur that may impact opportunities to implement a project(s). Such changes may mean that projects that were not originally ranked high could be implemented in the short term in order to respond to an unforeseen opportunity, available new funding, political will, or other reasons.

Table 4.1. Criteria for Ranking Priority Projects

Criterion	Score Weights
Lead Agency Capacity Score based on the lead agency's capacity to design and implement the project.	3 = Local and/or regional agency has in place the necessary policy (clear adopted support), staff (person hours in work plan) and funding (programmed) to implement this project.
	2 = Local and/or regional agency has in place (or can reasonably establish within 5 years) the necessary policy, staff (person hours) and funding to implement this project.
	1 = Local and/or regional agency does not have in place (nor can reasonably establish within 5 years) the necessary policy, staff (person hours) and funding to implement this project.
Universal User Score based on the project's capacity to serve the widest range of users: - Experienced Bicyclists - Novice/Youth Bicyclists - Pedestrians	3 = Project serves all user types, which are typically Class I facilities.
	2 = Project serves primarily pedestrians and allows bicycle use, typically a soft surface trail at least eight feet wide.
	1 = Project serves one user type. Project may be a narrow soft surface trail primarily for hiking or an on-street bikeway.

Table continues on next page

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

<p>Land Use Connectivity Score based on how well the project connects to origin/destination points and level of transportation benefit in a regional context.</p>	<p>3 = Project connects to <u>two</u> regional origin/destination points including population or employment centers, school facilities and high use recreational facilities, and provides an active transportation benefit.</p> <hr/> <p>2 = Project connects to a regional origin/destination point including population or employment centers, school facilities and high use recreational facilities, and provides an active transportation benefit.</p> <hr/> <p>1 = Project does not connect to regional origin/destination points including population or employment centers, school facilities and high use recreational facilities, but may provide limited active transportation benefits.</p>
<p>Public Support Public support is measured using three subcriteria (one point for each):</p> <ol style="list-style-type: none"> 1. Project-specific advocacy efforts identified the project. 2. General public identified project through regional planning outreach. 3. An adopted agency plan identified the project. 	<p>3 = Meets all criteria</p> <hr/> <p>2 = Meets criterion #3 and one other criterion</p> <hr/> <p>1 = Meets one criterion</p>

SR2S Prioritization Tool

Another method that HCAOG has employed to prioritize projects is the “Regional Safe Routes to School Prioritization Tool” (HCAOG, 2012). The primary purpose of the SR2S Tool was two-fold: determine which proposed SR2S projects were already best poised to succeed in winning statewide competitive funding grants, and identify the level and type of assistance other schools needed to be competitive. Being assessed neither guarantees nor restricts any HCAOG funding sources or HCAOG support for projects.

HCAOG’s SR2S Tool combines GIS-based spatial data with a qualitative matrix to understand a school’s readiness to proceed with SR2S programs. The Tool uses three categories of criteria:

- (i) school readiness for SR2S projects/programs – information gathered from parent surveys and inventory calls to schools;
- (ii) school internal need – demographic factors indicating need, such as car-ownership, household income, free-lunch eligibility, health and fitness rankings;
- (iii) school external need – physical and socio-economic factors in the school’s immediate vicinity.

HCAOG’s Regional SR2S Prioritization Tool Final Report and Appendices can be accessed online from <http://www.hcaog.net/documents/safe-routes-school-whats-happening-humboldt> (under Resources).

CITY OF ARCATA

The City of Arcata also adopts its own bike plan, which the Arcata City Council last updated and adopted in April, 2010. To view the *Pedestrian and Bicycle Master Plan 2010*, contact the City of Arcata’s Engineering Department (707)825-2128, or www.cityofarcata.org.

The City of Arcata has a population of approximately 18,169 people. Arcata has a traditional grid street network and town center with outlying neighborhoods developed in a more contemporary suburban style. Humboldt State University is a significant non- motorized trip generator with the city. Significant challenges to cyclists within the city limits include navigating US 101 over-crossings and access from outlying neighborhoods such as Sunny Brae and Valley West.

Major destinations include:

Downtown Area:

Plaza
 Uniontown Shopping Center
 Northtown Shopping Area (H and G between 15th and 18th)

Civic Buildings & Community Centers:

City Hall
 Library
 Arcata Community Center
 Bayside Grange
 D Street Neighborhood Center
 Portuguese Hall

Schools:

Humboldt State University
 Three High Schools (all at Arcata High School campus)
 Two Middle Schools
 Four Elementary or K-8 Schools

Parks & Recreation:

Arcata Community Forest
 Redwood Park
 Sunny Brae Park
 Shay Park
 Arcata Marsh and Interpretive Center
 Arcata Skate Park
 Baseball Field

Arcata’s Existing Bikeways (2012)

Bikeway Class	Street Name	From	To	Length (miles)
I (multi-use path)	101 Overpass, 17th Street	G Street	L.K. Wood Blvd.	0.1
II (bike lane)	D Street	8 th Street	7 th Street	0.05
II	14th Street	F Street	L.K. Wood Blvd.	0.1
II	7th Street	L Street	Union Street	0.7
II	Alliance Road	Spear Avenue	11th Street	1.3
II	Bayside Road	Union Street	Buttermilk Lane	0.7
II	Eastern Avenue (NB only)	Sunset Avenue	Foster Avenue	0.1
II	G Street	Sunset Avenue	Front Street	1.3
II	Giuntoli Lane	Heindon Road	West End Road	0.8
II	H Street	Sunset Avenue	Samoa Blvd	1.0
II	Janes Road	Giuntoli Lane	Spear Avenue	1.0
II	L. K. Wood Blvd.	Redwood Avenue	14th Street	1.2
II	Old Arcata Road	Buttermilk Lane	Hyland Street	0.8
II	Samoa Blvd.	Union Street	Buttermilk Lane	0.4

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Bikeway Class	Street Name	From	To	Length (miles)
II	Spear Avenue	Janes Road	St. Louis Road	0.7
II	St. Louis Road	Spear Avenue	L. K. Wood Blvd	0.2
II	Sunset Avenue	H Street	L. K. Wood Blvd	0.2
II	Valley East Boulevard	Giuntoli Lane	Valley West Blvd	0.4
II	Valley West Boulevard	Giuntoli Lane	Valley East Blvd	0.3
III (bike route)	West End Road	Giuntoli Lane	Spear Avenue	1.2
III	11th Street	Janes Road	Redwood Park	1.6
III	11th Street	K Street	Samoa Boulevard	0.4

See Arcata Bikeways Map for existing and proposed bikeways, and Table 4.2 for proposed projects.

The City of Arcata’s standard bicycle rack design is the inverted “U.”

Arcata Bicycle Parking Locations	Covered	Existing	Proposed (new or additional)
City Hall and Library		×	
Inter-modal Transit Facility (bike racks and lockers)	X	×	
Arcata Plaza & downtown area – sidewalk & street locations		×	
Northtown commercial area - various sidewalk locations		×	
Uniontown Plaza (shopping center)	X	×	×
Sunny Brae Center		×	×
Valley West Shopping Center		×	×
Arcata Community Center and Sports Complex	X	×	
D Street Neighborhood Center (sidewalk location)		×	
Arcata Marsh Interpretive Center and Wildlife Sanctuary		×	
Arcata Community Pool		×	
Humboldt State University Campus		×	
Grade Schools		×	
Bayside Post Office			×
Westwood Shopping Center			×
California Welcome Center, Chamber of Commerce			×
Alder Grove Industrial Park			×
Bus stops		×	×
City Parks		×	×

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Table 4.2. City of Arcata – Proposed Bikeway Projects

Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 TBD dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Project Score (12 max) ²					Total score
								Agency Capacity	Universa I User	Conne- tivity	Public Support		
Annie & Mary Rail-Trail (A)	Alder Grove Industrial Park (West End Road)	Arcata Skate Park	I	3.5	\$4,000,000	×	R	1	3	3	3	10	
Annie & Mary Rail-Trail (B)	Aldergrove Industrial Park	Water Dist. Park I	I	1.0	\$1,200,000	×	R						10
Humboldt Bay Trail–North	Samoa Blvd (State Route 255)	Bracut Marsh	I/II	2.5	\$4,800,000		R	2	2	3	3	10	
Sunset Avenue East/West	H Street	Alliance Road	I	0.25	\$137,500		L						
11th Street	Q Street	Janes Road	II	0.3	\$22,727	×	R					9	
Alliance Road	Spear Avenue	14th Street	II	1.2	\$89,489	×	R					9	
Bayside Road	Buttermilk Ln.	Union Street	II	0.7	\$51,136	×	R					9	
Janes Road/Giuntoli Lane	U.S. 101	Spear Avenue	II	0.8	\$62,500	×	R					9	
F Street	4th Street	7th Street	II	0.2	\$12,675	×	R					9	
F Street	7th Street	14th Street	II and/or III	0.4	\$10,000		L						
Western Avenue	Sunset	Foster	II	0.1	\$6,300	×	R					9	
Spear Avenue	Janes Road	West End Rd.	II	0.7	\$53,977	×	R					9	
Samoa Boulevard	West City Limit	K Street	III*	0.8	\$4,000	×	R					8	
Samoa Boulevard	K Street	Buttermilk Ln.	II	1.1	\$85,940	×	R						
Samoa Boulevard	Union Street	Crescent Way	II	0.25	\$7,500		R						
10th Street Bike Boulevard	Q Street	L Street	III (B)	0.3	\$1,500	×	L						
11th Street corridor (incl. Park Avenue, Fickle Hill Road)	Q Street	East City Limit	III*	0.6	\$1,800	×	R						
14th Street	K Street	Union Street	III*	0.6	\$3,000	×	R						

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 TBD dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Agency Capacity	Universa I User	Conne- tivity Public Support	Total score
16th Street	M Street	G Street	III	0.3	\$1,500	×	L				
Baldwin Street	Cahill Park	Sunset Avenue	III	0.2	\$1,100	×	L				
Buttermilk Lane	Samoa Blvd.	East City Limit	III*	0.7	\$1,728	×	L				
D Street	11th Street	Ped trail south of 9 th Street	III	0.2	\$3,500	×	L				
Foster Avenue	Janes Road	Alliance Road	III	0.4	\$2,000	×	R				
G Street	H Street	Front Street	II	1.3	\$100,568	×	R				
South G Street	Front Street	US 101	III	1.0	\$5,000	×	R				
I Street Bike Boulevard	Samoa Blvd.	17th Street	III (B)	0.7	3,500	×	R				
South I Street	Samoa Blvd.	Arcata Marsh	III*	1.0	\$5,000	×	R				
K Street	4th Street	13th Street	III	0.7	3,500	×	R				
L Street Bike Boulevard	11th Street	7th Street	III (B)	0.2	\$1,000	×	L				
Old Arcata Road	Buttermilk Lane	South City Limit	III*	1.1	\$6,050	×	R				
SR 299 –Trinity River Bike Route	U.S. 101	North City Limit	III	1.6	\$8,000	×	R				
Stromberg/Maple	Janes Creek Linear Trail	Alliance Road	III	0.3	\$1,500	×	R				
Union Street	E. 17th Street	Samoa Blvd.	III*	0.9	\$4,500	×	R				
Westside Corridor (includes Janes Road, Vaissade Road, V Street)	Foster Avenue	Samoa Blvd.	III	1.9	\$9,500	×	R				
Bike Repair Stations	1. Arcata Intermodal Facility (F St.) 2. Arcata Rails with Trail north of Shay Park		NA	NA	\$10,000		L				
III* = Enhanced Class III III (B) = Bicycle Boulevard CITY OF ARCATA TOTAL								<i>New projects are shaded.</i>			

¹ Bikeway classifications are defined in Chapter 3.

² See Table 4.1 for the scoring criteria.

CITY OF BLUE LAKE

Blue Lake is a small, primarily residential community with around 1,287 residents. Most of the downtown core was constructed in the late 19th and the 20th centuries; small residential subdivisions built more recently surround the town center. There is one public school in town. Residents travel by bicycle both within the city and to neighboring communities for work, school and services.

Major destinations in Blue Lake include:

Civic Buildings & Community Centers:

- *Blue Lake City Hall
- *Library
- *Post Office
- *Mad River Grange

Arts & Leisure Centers:

- *Blue Lake Museum
- Blue Lake Casino & Hotel
- *Dell’Arte Theatre

Parks & Other Recreation Areas:

- Gymkhana Field
- *Perigot Park & Prasch Hall Roller Rink
- Mad River Fish Hatchery
- Mad River
- Tot Lot (I Street)

* = destinations in the downtown area

Health & Social Service Centers:

- *Blue Lake Elementary School
- *Dell’Arte School of Physical Theatre
- Blue Lake Family Resource Center
- *Chumayo Spa

Restaurants & Shops:

- Mad River Brewing Co.
- *Stardoughs Café

Employment Centers (not listed above):

- Blue Lake Industrial Park

Existing Bikeways in Blue Lake

Street	From	To	Class	Length
Chartin Road	Blue Lake Blvd	Casino	II (bike lane)	0.2

Blue Lake has no Class I or III bikeway facilities.

Bicycle Parking in Blue Lake

Location	Covered	Existing	Proposed
Blue Lake School		×	
Perigot Park		×	
City Hall		×	
Dell’Arte Theatre & School		×	
Post Office		×	

Note: Underlined text is updated/revised or new.

TABLE 4.3 CITY OF BLUE LAKE – PROPOSED BIKEWAY projects

								Project Score (12 max) ²				
Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Conne- tivity	Public Support	Total score
Annie & Mary Rail-Trail (within City limits)	Chartin Road	Hatchery Road	I	1.2	\$ 1,500,000	×	R	1	3	3	3	10
Blue Lake Boulevard	West city limit	Southeast city limit	III*	1.4	\$22,000	×	R	2	1	3	2	8
Greenwood Road	Blue Lake Boulevard	Railroad Avenue	III*	0.3	\$8,000	×	R	2	1	3	2	8
Railroad Avenue	Greenwood Road	City limit	III*	0.8	\$13,000	×	R	2	1	3	2	8
III* = Enhanced Class III				CITY OF BLUE LAKE TOTAL	3.7	\$ 1,543,000						

¹ Bikeway classifications are defined in Chapter 3.

² See Table 4.1 for the scoring criteria.

CITY OF EUREKA

Eureka is the seat of Humboldt County and the primary population center on the North Coast. The population is approximately 26,765 persons. The City is surrounded by rapidly growing unincorporated communities adding to traffic congestion and the need for bicycle facilities. The city is characterized by large residential neighborhoods, multiple small to moderately sized shopping districts, four large parks and large waterfront area along the north and west side of the City. The Eureka Bikeways Map shows land development patterns and some of the city's destinations, such as schools, parks, and shopping centers.

Major destinations include:

Commercial Districts & Shopping Centers:

Costco
*Downtown, Old Town
Waterfront, Boardwalk
Henderson Center
Harrison Street commercial district
Eureka Mall
Burre Shopping Center
Bayshore Mall

Schools:

Three elementary schools, one middle school, one high school, and one continuation school.

Arts & Leisure Centers:

Ink People Gallery
*Eureka Theater
*Morris Graves Museum
Broadway Theater

Civic Buildings & Community Centers:

*Eureka City Hall
*Downtown Post Office
*County Courthouse
*Main Library
Adorni Center
Eureka Municipal Auditorium
Humboldt Bay Aquatic Center
Senior Center
Veterans Hall
Wharfinger Building
Boys & Girls Club and Teen Center
County of Humboldt Clark Complex offices

Parks & Other Recreation Areas:

20-30 Park
Carson Park
Cooper Gulch Park
Elk River Wildlife Area
Eureka Boat Basin
Eureka (Palco) Marsh
Fort Humboldt
Halvorson Park
Hammond Park
Ross Park
Sequoia Park & Zoo
Hartman & Kennedy Ball Fields

Medical & Social Service Centers:

Food Stamp Distribution Center
St. Joseph's Hospital
Mental Health Services-Humboldt
Human Services Office
Multiple Assistance Center
*Rescue Mission

* = destinations in the downtown and Old Town area.

Note: Underlined text is updated/ revised or new.

The City of Eureka’s existing bikeways are listed below and are shown on the Eureka Bikeways Map.

Existing Eureka Bicycle Facilities

Bikeway Class	Trail or Street Name	From	To	Length (miles)
I (multi-use path)	Eureka Waterfront Trail	Pound Road	Hilfiker Lane	0.6
I	Eureka Waterfront Trail	Del Norte Street	Vigo Street	0.3
I	Eureka Waterfront Trail	L Street	T Street	0.5
I	Eureka Waterfront Trail	1 st Street	4 th Street	0.1
I	McFarlan Trail	Hillside Drive	Zane Middle School	0.3
I	McFarlan Trail	Hillside Drive	23 rd Street	0.2
I	Sequoia Park Trail	O Street	W Street	0.4
I	Sequoia Park Trail	Glatt Street	W Street	0.3
I	Cooper Gulch Trail	13 th Street	10 th Street	0.2
I	Cooper Gulch Trail	P Street	R Street	0.1
II (bike lane)	6 th Street	Commercial	Myrtle Avenue	1.1
II	7 th Street	Broadway	Myrtle Avenue	1.2
II	Fairway Drive	Herrick Road	F Street	0.9
II	Harris Street	Fairfield Street	R Street	1.8
II	Henderson Street	J Street	Fairfield Street	0.6
II	J Street	6 th Street	Harris Street	1.5
II	Myrtle Avenue	4 th Street	Harrison Avenue	2.2
II	Wabash Avenue	Railroad Avenue	C Street	0.9
III (bike route)	6 th Street	Myrtle Avenue	West Avenue	0.2
III	California Street	Harris Street	6 th Street	1.3
III	F Street	Harris Street	Oak Street	0.6
III	Harris Street	R Street	Harrison Avenue	0.6

Existing Eureka Bicycle Parking

Location	Rack Type	Number of Racks	Covered
1 st & F St – Boardwalk	Inverted “U”	4	
2 nd & F Street – Old Town Gazebo	Inverted “U”	2	
2 nd Street at Romano Gabriel	Inverted “U”	2	
2 nd & H Street – State Building	Double	2	
3 rd Street, D St to G St – Old Town	Pole Mount	12	
3 rd Street & N St – County Library	Wave, Cora	2, 1	
4 th Street, A St to I St - Downtown	Pole Mount	12	
4 th Street and B Street – Co-op	Inverted “U”	3	
4 th & I Street – County Courthouse	Cora	1	
5 th Street, A St to I St - Downtown	Pole Mount	36	
5 th Street and D Street – Bus stop	Cora Upright, Covered	1	
5 th Street near U Street – Bus stop	Cora Upright, Covered	1	

Continues on next page

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Location	Rack Type	Number of Racks	Covered
5 th Street, K St to L St – Bus stop	Inverted “U”	2	
5 th & I Street – County Courthouse	Cora	1	
5 th Street, F St to G St – Downtown	Double	1	
6 th & K Street – City Hall	Cora	1	
6 th & L Street – Newspaper	Inverted “U”	2	
11 th Street at M Street – Market	Inverted “U”	2	
12 th & F St – Municipal Auditorium	Cora	1	
Broadway and McCullens – Bus Stop	Inverted “U”	2	
Broadway at Bayshore Mall – 5 entrances	Wave, Comb	3, 2	
Carson Street at H Street – Carson Park	Cora	1	
Carson Street at I Street – Carson Park	Cora	1	
D Street, 5 th to 6 th St - Downtown	Pole Mount	3	
Dolbeer Street – Kennedy Ball Field	Cora	1	
E Street, 6 th to 7 th St - Downtown	Pole Mount	3	
E Street, 14 th St to 15 th St – Hammond Park	Double	2	
E Street at Henderson Street – Henderson Center	Double	1	
E Street, Harris St to Grotto St – Henderson Cntr	Double	1	
F Street, 3 rd St to 7 th St – Old Town	Pole Mount	30	
F Street at Grotto Street – Henderson Center	Double	1	
F Street at Russ Street – Henderson Center	Double	1	
F Street and 14 th St – Basketball Courts	Cora	1	
G Street, 2 nd to 3 rd St – Old Town	Double	1	
Glen Street at Highland Street – Highland Park	Inverted “U”	4	
H Street (between 3 rd and 4 th Streets)	Inverted “U”	2	
H Street, 5 th St to 6 th St - Downtown	Pole Mount	6	
Harris Street, E St to H St – Henderson Center	Double	1	
Harris Street at Eureka Mall	Double	1	
Harris Street at K St – Boys & Girls Club	Cora	1	
Harris Street at Union – Market	Inverted “U”	2	
Harrison Avenue at Harris St – Bus Stop	Inverted “U”	2	
Harrison Avenue at Hospital	Inverted “U”	2	
Highland Street at Glen – Highland Park	Cora	2	
I Street, 5 th St to 6 th St - Downtown	Pole Mount	3	
Myrtle Avenue at Office of Education	Comb	1	
R Street at 10 th St– Cooper Gulch	Cora	1	
Russell at Dolbeer – Washington School	Inverted “U”	2	
W Street – Hartman Ball Field	Cora	1	
W Street – Sequoia Park Zoo	Cora	2	
W Street – Washington School	Inverted “U”	4	
Wabash Street and B St - Market	Inverted “U”	2	
Waterfront and L St - Adorni Center	Wave	2	
Waterfront Drive at Marina	Cora, Inverted “U”	3, 4	



This photo shows a rack, similar to the ones the City of Eureka has installed in downtown and Old Town.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Table 4.4 City of Eureka – Proposed Bikeway Projects

								Project Score (12 max) ²				
Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 dollars)	Project included from 2012 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Connectivity	Public Support	Total score
Eureka Waterfront Trail –												
Phase B:	Del Norte	C Street	I			×						
Phase C:	Adorni Center	Tydd Street	I	5.3{verify}	\$ 4,610,000		R	2	3	3	3	11
Harrison Ave.	Harris Street	Myrtle Avenue	II	1.1	\$ 2,000,000	×	R	2	2	3	3	10
H Street/ Campton Road	Harris Street	City limit	II	0.6	\$46,425	×	R	2	2	2	3	9
Dolbeer	Harris Street	Hemlock	II	0.5	\$350,000	×	R	1	2	3	3	9
E Street	Harris Street	Waterfront Drive	III	1.7	\$2,576	×	R	2	1	3	3	9
Hemlock St.	W Street	Walnut Ave.	III	0.2	\$400	×	R	1	2	3	3	9
S St./West Ave./V St.	Hodgson Street	First Street	III	2	\$2,983	×	R	2	1	3	3	9
W Street	Hodgson Street	Hemlock Street	III	0.4	\$800	×	R	2	1	3	3	9
Waterfront/ First Street	L Street	Commercial	III	0.7	\$1,870	×	L	2	1	3	3	9
Buhne St.	Fairfield St.	Harrison St.	III	1.6	\$4,088	×	R	2	1	2	3	8
Fairfield St.	Harris Street	Wabash Ave.	III	0.8	\$2,035	×	R	2	1	2	3	8
G Street	Harris Street	6 th Street	III	1.5	\$2,200	×	R	2	1	2	3	8
Glen Street	Harris Street	Allard Ave.	III	0.5	\$1,243	×	L	2	1	2	3	8
Henderson St.	Fairfield Street	I Street	II	0.6{verify}	\$750,000	×	R	2	1	2	3	8
Hodgson St.	F Street	W Street	III	1	\$1,509	×	L	2	1	2	3	8
State Route 255	Northwest city limit	5th Street	III	1.5	\$2,250	×	R	2	1	2	3	8
Wabash Avenue	C Street	H Street	III	0.4	\$800	×	L	2	1	2	3	8
Washington Street	Waterfront	C Street	III	0.6	\$938	×	L	2	1	2	3	8

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 dollars)	Project included from 2012 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Connectivity	Public Support	Total score
14th Street	Waterfront	West Ave.	III	1.2	\$1,809	×	R	2	1	1	3	7
Allard Avenue	Glen Street	Silva Ave.	III	0.1	\$145	×	R	2	1	1	3	7
Union Street	Silva Avenue	Harris Street	III	0.4	\$800	×	R	2	1	2	1	6
C Street	Waterfront	Henderson Street	III*	1.5	\$120,000	×	R	1	1	2	1	5
Del Norte	O Street	P Street	III	0.1	\$200		L	2	1	1	1	5
O Street	Harris Street	Del Norte	III	0.7	\$1,400		L	2	1	1	1	5
P Street	Del Norte	14 th Street	III	0.4	\$800		L	2	1	1	1	5
Searles Street	West Avenue	Hill Street	III	0.1	\$200		L	1	1	2	1	5
Tydd Street	West Avenue	End	III	0.1	\$200		L	1	1	2	1	5
South Gateway of Eureka					\$1,688,000		R					
> Hawthorn St.	Broadway	Felt	tba	tba								
> Felt St.	Hawthorn	Del Norte	tba	tba								
> 14th St.	Broadway	West	tba	tba	\$1,175,000		L					
> Highland Ave	Broadway	Utah St.	tba	tba								
> Koster St.	Del Norte	Washington St.	tba	tba	\$700		L					
> 3rd Street	L Street	R Street	tba	tba								
> Glen St.	Harris St.	Allard St.	tba	tba	\$400		L					
6th and 7th Streets	Myrtle Ave.	Broadway	tba	tba	\$1,200		L					
> Fairway Drive	City limits	Ridgecrest Dr.	tba	tba								
> Campton Road	City limits	Oak St.	tba	tba	\$1,000,000							
H & I Street Corridor			tba	tba	\$2,110,000							
CITY OF EUREKA TOTAL								<i>New projects are shaded.</i>				

III* = Enhanced Class III

¹Bikeway classifications are defined in Chapter 3..

²See Table 4.1 for the scoring criteria.

CITY OF FERNDALE

Ferndale is home to two of Humboldt County's largest annual bicycle events - the Tour of the Unknown Coast and the finish of the Kinetic Sculpture Race. Ferndale's population is approximately 1,434 residents. The primary projects suggested for Ferndale are related to creating safer routes to the two schools and improving bicycle access in and out of the city.

Ferndale is a small city well known for its Main Street's Victorian architecture. Downtown Ferndale, with its Historic Main Street, is a popular tourist destination. The primary access to town is via SR 211 over Fernbridge - a very narrow historic bridge with no shoulders or other bicycle facilities. Major destinations in Ferndale include (*=destinations in the downtown area):

- | | |
|------------------------------------|--|
| Commercial Districts: | Civic Buildings & Community Centers |
| *Main Street | *City Hall |
| *Downtown Business Zone | *Library |
| | *Ferndale Fairgrounds |
| Arts & Leisure Centers | Schools: |
| *Ferndale Museum | Elementary School |
| *Ferndale Kinetic Sculpture Museum | High School |
| *Ferndale Repertory Theatre | |
| | Parks & Other Recreation Areas: |
| | Centerville Beach |
| | *Fireman's Park and Bocce Courts |
| | Russ Park |
| | Ferndale Cemetery |

There are currently no designated bikeways in Ferndale. See Ferndale Bikeways Map and the table of proposed projects.

Bicycle Parking in Ferndale

Location	Covered	Existing	Proposed
High School		×	
Elementary School		×	
Scout Hall - Firemen's Park		×	
City Hall			×
Library			×
County Fairgrounds			×
Main Street Public Parking Lot			×

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Table 4.5 City of Ferndale – Proposed Bikeway Projects

								Project Score (12 max) ²				
Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 TBD dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Connectivity	Public Support	Total score
5th Street	Arlington Avenue	Ocean Drive	II	0.6	\$40,000	×	L	2	3	2	2	9
Arlington Avenue	Main Street	5th Street	II	0.3	\$20,000	×	L	2	3	2	2	9
Grizzly Bluff Road	Craig Street	East city limit	II or III	0.5	\$33,000	×	L	2	3	2	2	9
Main Street (SR 211)	Market Street	Ocean Drive	III*	0.5	\$5,500	×	R	2	3	2	2	9
Ocean Avenue	Shaw Avenue	Craig Street	II & III	0.2	\$13,200	×	L	2	3	2	2	9
Shaw Avenue	Ocean Avenue	Berding Street	III	0.5	\$5,500	×	L	2	3	2	2	9
Herbert Street	Main Street	Rose Street	II	0.3	\$112,000		L	2	3	2	2	9
Rose Avenue	Herbert Street	Grizzly Bluff Rd	II	0.9	\$30,400		L, R	3	3	2	2	10
Wildcat Avenue	Ocean Drive	City Limits	II	0.2	\$72,000		R	1	1	2	2	6
Ferndale Circuit Trail (loop through town)‡	Port Kenyon Road	Ocean Avenue and Bluff Road	II	1.63	\$652,000		L	2	2	2	2	8
Bluff Creek Trail Improvements‡ (footpath)			n.a.	tba	tba		L	1	2	2	2	7
Ferndale to Rio Dell‡	Grizzly Bluff Road	Blueslide Road	III*	10.7	\$58,900		R	1	2	2	2	7
Centerville Road Trail‡	Centerville Road	to Guthrie Creek Land	III*	7.5	\$41,000		R	1	2	1	2	6
CITY OF FERNDAL TOTAL				23.8+	\$1,083,50+			<i>New projects are shaded.</i>				

¹Bikeway classifications are defined in Chapter 3.

²See Table 4.1 for the scoring criteria.

‡Project also listed in the *Regional Trails Master Plan* (HCAOG, 2008).

CITY OF FORTUNA

Fortuna is the third-largest incorporated city in Humboldt County with approximately 11,848 residents. It has a traditional town center surrounded by suburban residential neighborhoods and mid-sized shopping districts. Bicycle access over and under US 101 has been noted as an issue. Many students from outlying areas travel to Fortuna for school and there are consequently a significant number of schools for a town it's size: three elementary schools a middle school and a high school - as well as a number of small private schools.

Major destinations in Fortuna include:

Commercial/Business Centers:

Main Street from 7th to 14th
 Redwood Shopping Mall
 Riverwalk Drive

Schools:

High School on 12th Street
 South Fortuna Elementary
 Ambrosini Elementary

Civic Building & Community Centers

City Hall
 Library
 River Lodge

Parks & Recreation Areas:

Newburg Park
 Rohner Park
 River Trail

Other:

California Conservation Corps Housing
 Redwood Memorial Hospital

Class II bike lanes have been striped on Main Street and Rohnerville Road, however, the facilities are intermittent, need to be re-striped, and appear to not meet Caltrans minimum standards for Class II bikeways. There are no Class I or III bikeway within the city.

Fortuna Bike Parking

Location	Covered	Existing	Proposed
Toddy Thomas Elementary		×	
Ambrosini Elementary		×	
South Fortuna Elementary		×	
Rohner Park		×	
Safeway shopping area			×
Main Street shopping area			×
River Lodge			×
Redwood Mall shopping area			×
Park and Ride			×

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Table 4.6 City Of Fortuna – Proposed Bikeway Projects

Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 TBD dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Project Score (12 max) ²				
								Agency Capacity	Universal User	Connectivity	Public Support	Total score
12th Street	Main Street	Newburg Rd.	II	0.4	\$32,667	×	R	3	2	3	1	9
Fortuna Boulevard	Main Street	Kenmar Rd.	II	1.3	\$122,200	×	R	3	2	3	1	9
Kenmar/ Kenwood	Riverwalk Drive	Rohnerville Road	II	0.6	\$51,000	×	R	3	2	2	1	8
Main Street	US 101	Rohnerville Road	II	1.2	\$74,500	×	R	3	2	3	2	10
Rohnerville Road	Main Street	School Street	II	2.9	\$1,160,000	×	R	2	2	2	1	7
Riverwalk Drive	Sandy Prairie Court	Kenmar Road	II	1.1	\$100,000	×	R	3	2	2	1	8
School Street	Rohnerville Road	Ross Hill	II	0.7	\$60,000	×	R	2	2	2	1	7
Redwood Way	Fortuna Boulevard	Rohnerville Road	II	1.1	\$90,000	×	L	3	2	2	1	8
Newburg Road	12 th Street	Rohnerville Road	III*	1.0	\$25,000	×	L	2	2	3	2	9
Riverwalk Drive	Newberg Road	Sandy Prairie Ct	III*	0.8	\$75,050	×	L	2	2	2	1	7
John C. Campbell Memorial Parkway	River Lodge (trace south bank of Strongs Creek)	Eastern City Limit	I	4.3	\$3,314,115		R	2	3	3	2	10
U.S. 101/12th Street Northern Interchange	Improvements to onramps	Dinsmore Drive	tbd		\$14,000		R					
U.S. 101/Riverwalk Drive Southern Interchange			tbd		\$12,000		R					
U.S. 101/Kenmar Road Interchange Improvements			tbd		\$6,500		R					

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 <u>TBD</u> dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Conne- tivity	Public Support	Total score
South Fortuna Boulevard	Ross Hill Road	Kenmar Road	II		\$600		L					
Newburg Road	Lawndale Drive Summer Street	2nd Ave Orchard Lane	II		\$900		L					
Various Locations –	Riverwalk Drive, Fortuna Boulevard,	Rohnerville Road	I		\$4,600		L					
CITY OF FORTUNA TOTAL				tbd	\$ tbd			<i>New projects are shaded.</i>				

III* = Enhanced Class III

¹Bikeway classifications are defined in Chapter 3.

²See Table 4.1 for the scoring criteria.

CITY OF RIO DELL

Rio Dell is located along the west bank of the Eel River, south of Fortuna and one mile north of Scotia. The city covers two square miles, and its population is approximately 3,416 residents. The former US 101 route is now the main street (Wildwood Avenue) in the center of town. Rio Dell is primarily a residential community. There are two schools, a fire department, library, and some commercial businesses. Major destinations in Rio Dell include:

Commercial/Business Areas:

Wildwood Avenue

Parks & Recreation:

Fireman's Park & Picnic Area
 Blue Star Memorial By-Way Park (Triangle Park)
 Redwood Mini Golf
 Tennis and bocce courts

Civic Buildings & Community Centers:

City Hall
 Post Office
 Library

Schools:

Elementary School on Center Street
 Middle School on Center Street

Existing Rio Dell Bicycle Facilities

{check status} There is currently one bike lane in Rio Dell; it is in front of the schools. A current city redevelopment project will add additional lanes. There are no Class I or III bikeways.

Type	Street	From	To	Length
Class II (bike lane)	Center Street (south side only)	Wildwood Avenue	Ireland Avenue	0.3 miles

Rio Dell Bicycle Parking

Location	Covered	Existing	Proposed
Elementary and Middle Schools		×	
City Hall			×
Wildwood Ave: throughout main shopping area			×
Library			×
Fireman's Park			×
Community Park and Tennis Courts			×
Market on Wildwood			×

The Rio Dell Bikeways Map shows locations of existing and proposed bike facilities in Rio Dell. The projects table describes the proposed bikeway projects.

Note: Underlined text is updated/revised or new.

Table 4.7 City of Rio Dell – Proposed Bikeway projects

								Project Score (12 max) ²				
Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2012 dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Connectivity	Public Support	Total score
Davis Street	Wildwood Avenue	Rigby Avenue	II	0.5	\$ 12,000	×	R					
Painter Street	Wildwood Avenue	Rigby Avenue	II	0.5	\$ 10,560	×	L					
Bellevue St.	Main St.	West City Limit	III*	1.3	\$ 44,600	×	R					
Ireland Street	Center St.	Davis St.	III*	0.2	\$ 8,500	×	L					
Rigby Avenue	Davis Street	Painter St.	III*	0.3	\$ 5,500	×	L					
Wildwood Ave.	US 101/ Eeloa Ave	Davis Street	III*	0.6	\$ 12,700	×	R					
Wildwood Ave.	Davis Street	South City Limit	III*	0.7	\$ 22,700	×	R					
III* = Enhanced Class III			CITY OF RIO DELL TOTAL	4.1	\$ 116,560							

¹Bikeway classifications are defined in Chapter 3.

²See Table 4.1 for the scoring criteria.

Note: Underlined text is updated/revised or new.

CITY OF TRINIDAD

Trinidad is a seaside town on the Pacific Ocean coastline, approximately 15 miles north of Humboldt Bay, and situated directly above its own North Coast harbor. Trinidad is California's smallest incorporated city with a population of approximately 367 persons. The Trinidad area provides access to ten public beaches and offshore rocks. The rocks are part of the California Coastal National Monument of which Trinidad is a Gateway City.

Trinidad's very scenic coastal setting, public beaches and small town atmosphere attract a good number of tourists - many of them on bicycles. Touring bicyclists on the Pacific Coast Bike Route and local residents often stop in Trinidad for recreation, to rest, or to utilize the local services. Traffic speeds within the town are generally slow.

Major destinations include:

Commercial/Business Areas:

- Main Street, Trinity Street
- Patrick's Point Drive

Civic Buildings & Community Centers:

- Trinidad Town Hall
- Post Office
- Library

Schools & Museums:

- Trinidad Elementary School
- Humboldt State University–Fred Telonicher Marine Laboratory

Beaches, Parks, & Recreation:

- Azalea Glen RV Park & Campground
- College Cove, Houda Point, Indian (Old Home), Luffenholz, and Moonstone Beaches
- Patrick's Point State Park
- Trinidad Pier
- Trinidad State Beach Park
- Trinidad Head Light, Trinidad Memorial Lighthouse
- Cher Ae Heights Casino

Trinidad Bicycle Parking Locations	Covered	Existing	Proposed
Trinidad Park-and-Ride (US 101 & Main Street)	×	×	
Murphy's Market (Trinity Street near Edwards)			×
City Hall			×
School and Library			×
Pier, Trinidad Head, Beach Access			×

The Trinidad Park-and-Ride lot on Main Street (just west of Scenic Drive) has bicycle lockers. It is a fixed bus stop for the Redwood Transit System bus line, which is a regional bus route.

There are no designated bikeways within the City of Trinidad. See the Trinidad Bikeways Map and projects table for the City's proposed bikeway facilities.

Note: Underlined text is updated/revised or new.

Table 4.8 City of Trinidad – Proposed Bikeway Projects

Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Construction Cost (2017 dollars)	Project included from 2012 Plan	Local (L) Regional (R)	Project Score (12 max) ²				
								Agency Capacity	Universal User	Connectivity	Public Support	Total score
Edwards Street	Trinity Street	Bay Street	III*	0.2	\$,000	×	R	1	1	3	1	6
Main Street/Weshaven Drive	East City Limits	Trinity Street	III*	0.2	\$4,000	×	R	1	1	3	1	6
Scenic Drive	Main Street	City Limits	III	0.2	\$4,000	×	R	1	1	2	1	5
Patrick's Point Drive	Main Street	City Limits	III	0.2	\$4,000	×	R	1	1	2	1	5
Trinity Street	Main Street	Edwards Street	III	0.2	\$4,000	×	R	1	1	3	1	6
Westhaven Drive	Main Street	City Limits	III*	3.2	\$ 25,000	×	R	1	1	3	1	6
<u>Little River Trail</u>	<i>See County of Humboldt (Table 4.9)</i>											
Van Wycke Trail	Ocean Avenue	Edwards Street	I, II, & III	0.3	\$714,000		L	3	3	3	2	11
CITY OF TRINIDAD TOTAL				4.5	\$ 737,100			<i>New projects are shaded.</i>				

III* = Enhanced Class III

¹Bikeway classifications are defined in Chapter 3.

²See Table 4.1 for the scoring criteria.

Note: Underlined text is updated/revised or new.

COUNTY OF HUMBOLDT

Humboldt County, located on California’s North Coast, encompasses approximately 3,600 square miles (nearly 2.3 million acres), 80 percent of which is forestlands, protected redwoods, and recreation areas. The county is bound by Del Norte County on the north, the Pacific Ocean on the west, Siskiyou and Trinity Counties on the east, and by Mendocino County on the south. The whole county, geographically, has a population of approximately 135,116 persons; the County’s jurisdiction of unincorporated areas has an estimated population of 71,830 (State of California, Department of Finance, 2016). The study area includes all of unincorporated Humboldt County; however, it focuses on areas with the highest density of bicycle activity.

Major destinations in the County’s unincorporated areas include:

GARBERVILLE & REDWAY

- Community Park
- Garberville downtown
- Healy Senior Center
- Redway Downtown
- Redway Elementary School
- Rodeo Grounds
- Southern Humboldt Community School

ORICK

- Prairie Creek State Park
- Redwood National and State Parks
- Rodeo Grounds

SAMOA

- Samoa Cookhouse
- Peninsula Union School
- Samoa Dunes Recreation Area
- Samoa Womens’ Club

MANILA

- Manila Community Center
- Manila Park Campgrounds
- Manila Dunes

MCKINLEYVILLE

Commercial/Job Centers:

- Central Avenue shopping area

Schools:

- Morris Elementary School
- Junior High
- High School

Civic Centers:

- Public Library
- Azalea Hall

Parks & recreation areas:

- Hiller Park
- Hammond Trail
- Midtown Trail

OTHER COMMUNITIES & DESTINATIONS:

- | | | |
|-------------------|--------------------------------|----------------------------|
| Fernbridge | Shelter Cove | Avenue of the Giants |
| Fieldbrook | Stafford, Pepperwood, Shively, | Redwood National and State |
| Hoopa | Holmes, Larabee, | Parks |
| Loleta | Redcrest, Weott, Myers Flat, | Big Lagoon State Park |
| Orleans-Somes Bar | Miranda, Phillipsville | |
| Willow Creek | Westhaven | |

Existing Humboldt County Bikeways in the Unincorporated Areas

Class	Corridor/Street Name	From	To	Length
I (bike path)	Hammond Trail	Letz Avenue	Strawberry Creek	2.0
I (bike path)	Hammond Trail	School Road	Fischer Road	0.7
I (bike path)	Mid Town Trail Maintained by MCSD, not County of Humboldt	Bates Road	Washington	1.2
I (bike path)	School Road Trail Maintained by MCSD, not County of Humboldt	Ocean Drive	Fischer Road	0.3
II (bike lane)	Central Avenue	School Road	Railroad Avenue	0.9
II (bike lane)	Harris Street	Harrison Avenue	Hall Avenue	0.8
II (bike lane)	McKinleyville Avenue	Murray Road	Washington Avenue	1.3
II (bike lane)	Murray Road	US 101	Central Avenue	0.8
II (bike lane)	Myrtle Avenue	West/Eureka City limits	Hall Avenue	0.2
II (bike lane)	Myrtle Avenue/Old Arcata Road	Mitchell Heights Drive	Three Corners Market (Myrtle Ave)	2.1
II (bike lane)	School Road	Bugenig Road	Central Avenue	0.7
II (bike lane)	Highway 299 (in Willow Creek)	Willow Road	Willow Way	0.3
II (bike lane)	Freshwater Road	Myrtle Avenue	Boy Scout Road (east end of Freshwater Park)	3.02
III (bike route)	Fischer Road- Hammond Trail	School Road	Hammond/Mad River Bridge	0.7
III (bike route)	Sutter Road	Central Avenue	Azalea	1.07
III (bike route)	School Road	Betty Court (Mill Creek Cinema)	Verwer Court (to end/coast)	1.2

The County’s proposed bikeways are described in the project table below, and illustrated on the County Bikeway Maps.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Table 4.9 County of Humboldt – Proposed Bikeway Projects (For the Unincorporated Area)

NORTHERN HUMBOLDT COUNTY

County Location	Proposed Project Corridor/ Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2012 dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Connectivity	Public Support	Total score
Arcata–Blue Lake	Annie & Mary Rail-Trail	Water District Park 1 (or Arcata city limits)	Blue Lake City Limits	I	3.4	\$903,000	×	R	1	3	3	3	10
Arcata Bottom	Hammond Trail	Mad River Bridge	Arcata City Limits	Class I Implementation Strategy	2.9	\$797,500	×	R	3	3	0	3	9
Arcata–Eureka	Humboldt Bay Trail-East Bay	Arcata Marsh & Wildlife Sanctuary	Eureka Waterfront Trail/Drive	Class I Implementation Strategy	6.4	\$3,520,000		R	3	3	0	3	9
Arcata–Samoa	Humboldt Bay Trail-West Bay	Arcata City Limits	Samoa-potential extension to Fairhaven	Class I Implementation Strategy	7.2	\$1,980,000		R	3	3	3	3	12
Fortuna West	Riverwalk Trail	Fortuna City Limits	Sandy Prairie Road	I	2	\$550,000		R	3	3	3	1	10
Hoopla	SR 96: Hoopa	Mill Creek Road	Shoemaker Road	Class I Implementation Strategy	5.4	\$75,000		R	Not maintained by County; Caltrans' jurisdiction.				
Willow Creek	SR 96: Willow Creek	SR 299	Elementary School	Class I Implementation Strategy	0.9	\$332,050		L	Not maintained by County; Caltrans' jurisdiction.				
South Eureka	Campton Road	Eureka city limit	Walnut Drive	II	1.6	\$117,614	×	L	1	1	2	2	6
South Eureka	Herrick Road	US 101	Fairway Drive	II	0.9	\$67,500	×	R	3	1	3	1	8
South Eureka	Ridgewood Drive	Elk River Road	Walnut Drive	II	1.3	\$97,500	×	R	1	1	1	2	5
South Eureka	Walnut Drive	Hemlock Street	Ridgewood Drive	II	3	\$225,000	×	R	3	1	3	1	8
South Eureka	F Street	Fairway Drive	Oak Street	II	0.4	\$28,409	×	R	1	1	1	2	5
South Eureka	Elk River Road	Ridgewood	Headwaters Trailhead	III (R)	6.4	\$9,617	×	R	2	1	1	2	6
South Eureka	Hall Avenue	Harris Street	Myrtle Avenue	III*	0.1	\$308	×	R	2	1	2	2	7
South Eureka	Humboldt Hill Road	US 101	Donna Drive	III*	2.0	\$5,066	×	L	2	1	1	2	6
Myrtle town	Park Street	Myrtle Ave.	Quaker St.	II	0.5	\$39,773	×	L	1	1	3	2	7

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Eureka-Arcata	Myrtle Avenue/Old Arcata Road	Hall Avenue	Bayside Cutoff	III*	6.8	\$96,894	×	R	3	3	3	3	12
Myrtle town	Quaker St.	Park Street	Trinity Street	III*	0.5	\$1,278	×	L	2	1	1	2	6
Myrtle town	Trinity St.	Quaker St.	Myrtle Ave.	III*	0.3	\$663	×	L	2	1	1	2	6
Arcata Bottom	Mad River Rd/ Upper Bay/ Miller Lane/ Heindon Rd	Mad River Beach	Arcata City Limits	III*	2.6	\$6,439	×	R	2	1	3	2	8
Arcata–Eureka	SR 255	US 101	US 101	III	8.9	\$13,307	×		Not maintained by County; Caltrans' jurisdiction.				
Manila	SR 255 – western side	Dean St./Pacific Ave. intersection (PM 3.64)	Carlson Ave. (PM 4.14)	I	0.5	\$300 (2017 \$s)		R	Not maintained by County; Caltrans' jurisdiction.				
Blue Lake	Glendale Drive	SR 299	Blue Lake Boulevard	III*	2.3	\$5,824	×	R	2	1	1	2	6
Blue Lake North	Blue Lake Boulevard	Glendale Drive	Blue Lake City Limit	III	0.2	\$241	×	R	2	1	1	2	6
Blue Lake–Korbel	Blue Lake Boulevard	Southeast Blue Lake city limit	Maple Creek Road	III	0.2	\$256	×	R	2	1	1	2	6
Blue Lake–Arcata	West End Road	Giuntoli Lane	Hatchery Road	III (R)	3.6	\$5,378	×	R	2	1	1	2	6
Blue Lake South	Hatchery Road	Mad River Bridge	Fish Hatchery	III*	0.6	\$1,539	×	R	2	1	1	2	6
Ferndale	Grizzly Bluff/Blue Slide Roads	Ferndale City Limit	Rio Dell City Limit	III (R)	12.4	\$18,568	×	R	2	1	1	2	6
Ferndale	SR 211	Fernbridge Drive	Ferndale City Limit	III*	3.7	\$9,250	×	R	Not maintained by County; Caltrans' jurisdiction.				
Fortuna–Hydesville	Rohnerville Road	Fortuna City Limit	SR 36	III*	6.6	\$16,420	×	R	3	1	3	1	8
Fortuna–Southwest	Sandy Prairie Road	Fortuna City Limit	US 101	III*	1.2	\$2,936	×	R	2	1	1	2	6
Korbel	Maple Creek Road	Blue Lake Boulevard	Korbel Road	III	1.6	\$2,472	×	R	2	1	1	2	6
Scotia	Main Street	Rio Dell City Limit	US 101	III*	1.5	\$3,646	×	R	2	1	1	2	6
Trinidad	Patrick's Point Drive	Trinidad City Limit	Patrick's Point - US 101	III*	5.5	\$13,750	×	R	2	1	1	2	6

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Trinidad–Westhaven	Westhaven Drive	Trinidad City Limit	US 101	III (R)	3.2	\$4,800	×	R	2	1	1	2	6
Trinidad–Westhaven	Scenic Drive	Trinidad City Limit	US 101	III(R)	2.5	\$3,750	×	R	2	1	2	2	7
<u>Trinidad–Westhaven</u>	<u>Little River Trail</u>	Hammond Trail northern terminus (Clam Beach)	Scenic Drive in Westhaven	I	<u>1.0</u>	\$1,800		<u>R</u>	<u>Interagency coordination with City of Trinidad</u>				
Inter-County Connection	SR 299	US 101	Trinity County	III	42.1	\$63,150	×	R	Not maintained by County; Caltrans' jurisdiction.				
Inter-County Connection	SR 36	US 101	Trinity County	III	45.7	\$68,550	×	R	Not maintained by County; Caltrans' jurisdiction.				
Inter-County Connection	SR 96	SR 299	Siskyou County	III	44.7	\$67,050	×	R	Not maintained by County; Caltrans' jurisdiction.				
PCBR Redwood National Park	US 101 (PCBR)	Newton B. Drury Scenic Parkway	V Street	III	49.5	\$74,250	×	R	Not maintained by County; Caltrans' jurisdiction.				
Pacific Coast Bike Route	US 101 (PCBR)	Henderson Street, Eureka	Mendocino County	III	77.7	\$116,550	×	R	2	1	3	2	8
III*=Enhanced Class III III(R) = Rural Route Identification		NORTHERN COUNTY OF HUMBOLDT SUBTOTAL			369.8	\$ 9,347,398			<i>New projects are shaded.</i>				
MCKINLEYVILLE													
McKinleyville	Mid Town Trail	Railroad Avenue	Washington Street	I	1.6	\$440,000	×	L	1	3	3	2	9
McKinleyville	Airport Road	Letz Avenue	Central Avenue	II	1.0	\$76,350	×	R	1	1	1	2	5
McKinleyville	Central Avenue	US 101	Anna Sparks Way	II	4.1	\$310,125	×	R	2	1	2	2	7
McKinleyville	Hiller Road	Ocean Avenue	Central Avenue	II	1.4	\$101,550	×	L	3	3	3	3	12
McKinleyville	Letz Avenue	Hammond Trail	Hammond Trail	I	0.7	\$500,000	×	R	3	3	3	3	12
McKinleyville	McKinleyville Ave.	Washington Street	School Road	II	0.2	\$18,466	×	R	3	3	3	3	12
McKinleyville	School Road	Fischer Ave	Central Avenue	II	0.6	\$47,175	×	R	2	1	2	2	7
McKinleyville	Washington Avenue	McKinleyville Avenue	School Road	II	0.5	\$37,642	×	R	1	1	2	2	6
McKinleyville	Azalea Avenue	SR 200	Sutter Road	III(R)	1.6	\$2,330	×	R	2	1	1	2	6
McKinleyville	Dows Prairie	Grange Road	Norton Road	III*	1.0	\$1,563	×	L	2	1	1	2	6
McKinleyville	Grange Road	Central Avenue	Downs Prairie Road	III	0.2	\$369	×	L	2	1	1	2	6

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

McKinleyville	Halfway Avenue/ Gassoway Road	Airport Road	Murray Road	III(R)	0.7	\$998	×	L	2	1	1	2	6
McKinleyville	Norton Road	Dow's Prarie Road	Central Avenue	III	0.3	\$377	×	L	2	1	1	2	6
McKINLEYVILLE SUBTOTAL					TBD	TBD							

III* = Enhanced Class III, III(R) = Rural Route Identification

New projects are shaded

County Location	Proposed Project Corridor/ Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2012 dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Project Score (12 max) ²					
									Agency Capacity	Universal User	Connec-tivity	Public Support	Total score	
SOUTHERN HUMBOLDT COUNTY														
Garberville–Redway	Garberville-Redway	Garberville	Redway	Class I, Feasibility Study	----	\$20,000	×	R	3	3	0			
Miranda–Meyers Flat	South Fork High Trail	Miranda	Meyer's Flat	I	6.0	\$800,000	×	R	1	3	2			
Shively–Phillipsville	Avenue of the Giants (SR 254)	US 101	US 101	III*	14.0	\$34,935	×	R	Not maintained by County; Caltrans' jurisdiction.					
Redway	Briceland Road	Redwood Drive	Eel River Road	III*	0.9	\$2,250	×	L	2	1	3			
Garberville–Redway	Redwood Drive	Manzanita	Maple Lane	III	0.8	\$1,200	×	R	2	1	3			
Garberville	Sprowel Creek Road	Redwood Drive	Community Park	III	1.0	\$1,500	×	L	2	1	2			
SOUTHERN HUMBOLDT COUNTY SUBTOTAL					TBD	TBD								

× = Recommended for Pacific Coast Bike Route
 III* = Enhanced Class III

COUNTY OF HUMBOLDT TOTAL

New projects are shaded.

¹Bikeway classifications are defined in Chapter 3.

²See Table 4.1 for the scoring criteria.

The County of Humboldt has also identified, in the *Humboldt County Regional Trails Master Plan 2010*, potential trail projects that include bike facilities. Those projects are listed in the projects table below. The projects are at the conceptual level; as such, the County of Humboldt has not chosen or determined exact locations, designs, specifications, or costs for them.

Table 4.10 County of Humboldt – Potential Trail Projects with Bike Facilities (Unincorporated Area)¹

Proposed Bikeway Class	Bike Trail Location (Conceptual)	Project Score ²					Total score	Project Number in HCRTMP 2010*
		Agency Capacity	Universal User	Connectivity	Public Support			
I	Hammond Trail - Bridge replacement	1	3	3	3	11	18	
II	Redwood Drive (Garberville to Redway to US 101)	2	1	3	3	11	19	
I	Riverwalk Trail (Fortuna City Limits to Sandy Prairie Road)	1	3	2	2	11	20	
II	Blue Lake Boulevard	2	1	3	2	10	26	
II	Loleta Drive (Main Street to Franklin Ave)	2	1	3	1	9	43	
II	Newton Road (Sewell Road to School Road)	2	1	3	1	9	46	
III*	King Salmon Drive (Buhne Drive to Loma Avenue/South Bay Union School) – widen shoulder	2	1	3	1	8	50	
III*	Sprowel Creek Road – widen shoulder	2	1	3	1	8	51	
III*	Railroad Drive – widen shoulder, north side	2	1	3	1	8	52	
III*	Centerville Road (Ferndale City Limit to beach) – widen shoulder	2	1	3	1	8	53	
II	Washington Avenue (McKinleyville Avenue to School Road)	1	1	2	2	8	58	
I and II	Manila: Peninsula Drive (Dean Ave to Sandy Road) (Class I along NWP railway)	2	1	2	1	8	60	
II	Railroad Avenue (Central Avenue to Thiel Avenue)	2	1	2	1	8	61	
II or III	McKinleyville Avenue (Murray Road to Gassaway Road)	2	1	2	1	8	62	
III*	Union Street – widen shoulder	2	1	2	1	7	72	
III*	Hookton Road - widen shoulder	2	1	2	1	7	73	
III*	Tompkins Hill Road - widen shoulder	2	1	2	1	7	74	
III*	Eel River Drive - widen shoulder	2	1	2	1	7	75	
II	Franklin Ave (Park Street to Loleta Drive)	2	1	1	1	7	98	
II	Park Street (Loleta Drive to Franklin Ave)	2	1	1	1	7	99	

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Note: Underlined text is updated/revised or new.

Proposed Bikeway Class	Bike Trail Location (Conceptual)	Project Score ²					Project Number in HCRTMP 2010*
		Agency Capacity	Universal User	Connectivity	Public Support	Total score	
II	School Road (Bugenig Ave to Highway 101)	2	1	1	1	7	100
II	School Road (Highway 101 to Fisher Road)	2	1	1	1	7	101
II and III	Gassaway Road (McKinleyville Ave. to Halfway Ave.)	2	1	1	1	7	103
III*	Westhaven Road - widen shoulder	2	1	1	1	6	110
III*	Glendale - widen shoulder	2	1	1	1	6	111
III*	West End Road - widen shoulder	2	1	1	1	6	112
III*	Bald Hills Road - widen shoulder	2	1	1	1	6	113
III*	Maple Creek Road - widen shoulder	2	1	1	1	6	114
III*	Briceland/Thorne Road - widen shoulder	2	1	1	1	6	115
III*	Shelter Cove Road - widen shoulder	2	1	1	1	6	116
III*	Cannibal Island Road - widen shoulder	2	1	1	1	6	117
III*	Red Cap Road - widen shoulder	2	1	1	1	6	118
III*	Blue Lake Boulevard – widen shoulder (4')	2	1	1	1	6	119
III	V Street (Arcata City Limits to SR 255)	2	1	1	1	6	120

¹These projects are reproduced from the *Humboldt County Regional Trails Master Plan 2010* (HCAOG).

²Projects were scored by the County of Humboldt Public Works Department.

KARUK TRIBE (HCAOG TAC MEMBER)

The small rural community of Orleans is the most northeasterly community in Humboldt County. It is located within the Middle Klamath River sub-basin. Orleans is between 78 and 98 miles from Eureka, depending on what highway route you take. The community of Orleans has a land area of approximately 192 square miles, and 0.06 square miles of water area. It has a population of 569 residents, 308 housing units, and an estimated average density of 2.97 people per square foot of land (US Census 2000).

Residential and agricultural (farming) developments are spread along several roads that connect to Orleans downtown area. The downtown has a grocery store, post office, restaurant, gas station, elementary school, plus the Karuk Tribal Community medical clinic, and Tribal Administrative Offices and Community Centers. California State Highway 96 (SR96) bisects the downtown area. A large, scenic bridge on SR96 spans the Klamath River and delineates the northern end of the downtown area.

Major destinations in the community of Orleans include:

Restaurants & Grocery

Orleans Market
 Orleans Mining Café & Bar

Arts & Leisure Centers

River Artisans
 Panamnik Building

Civic Buildings & Community Centers

Community Room, Department of Natural Resources, Karuk Tribe
 Panamnik Building (post office, Mid Klamath River Watershed Council, community room, offices)

Health Centers & Social Services

Karuk Tribal Community Health Clinic
 Karuk Tribal Social Service Center
 Panamnik Center – Elders Program

Parks & Recreation

Klamath Riverside RV Park
 Perch Creek Camp Ground
 Riverside RV Park
 Sandy Bar Ranch

Employment Centers

Karuk Tribe Dept. of Natural Resources
 Karuk Tribe Administrative Office (Happy Camp)
 US Forest Service Ranger Station
 Caltrans Maintenance Station

Schools & Educational Resources

Orleans Elementary
 Orleans Computer Center

Bicycle parking:

Proposed Location	Rack Type	Quantity	Covered	Existing	Proposed
Red Cap Road	6-unit upright	1	X		X
Orleans Market	4-unit	1			X
Post Office	4-unit	1			X

There are no existing bikeways in Orleans. The proposed bikeways are described in the projects table below and are shown in the Bikeway Projects Map.

Note: Underlined text is updated/revised or new.

Table 4.11 Karuk Tribe – Proposed Bikeway Projects

Humboldt County Community of Orleans								Project Score (12 max) ²				
Proposed Project Corridor/Street	From	To	Proposed Bikeway Class ¹	Length (miles)	Estimated Cost (2017 TBD dollars)	Project included from 2004 Plan	Local (L) Regional (R)	Agency Capacity	Universal User	Connectivity	Public Support	Total score
Tishawnik Hill Bike Route & Trail	State Route 96 at Camp Creek Road	Business Districts	I	2.4	\$983,000	n/a	L	1	3	1	2	7
TOTAL								<i>New projects are shaded</i>				
				2.4	\$							

¹Bikeway classifications are defined in Chapter 3..

²See Table 4.1 for the scoring criteria.

Tishawnik Hill Bikeway & Trail: This proposed Class I bikeway project begins west of the Orleans business district. The section of State Route 96 between Lower Camp Creek Road and Eyesee Road has no highway shoulders, restricted sight distances, and high traffic speeds (55 mph and faster); additionally, many drivers are not aware that they are entering a populated area. The community has expressed a desire for a multi-use paved trail (Class I bikeway); therefore, the Tribe has included a design for a multi-use trail through Karuk Tribal Land to ensure a safe, unobstructed active transportation route. To make this project feasible, the Karuk Tribe has pledged public easement through this corridor.

Projects Completed:

2016: Red Cap Road Bikeway (Red Cap Road to school/business district) – Class II/III, 1.57 miles shoulder widening, local project.

REFERENCES

City of Fortuna, 2014. *John Campbell Memorial Greenway and Strongs Creek Trail Master Plan*. Prepared by the Local Government Commission, Alta Planning+Design, GHD, Inc., and Rails to Trails Conservancy. (May 2014).

State Coastal Conservancy, 2015. “Orick Mill Site Restoration, Project No. 14-055-01” staff report dated June 25, 2015. Author: Su Corbaley.

State Coastal Conservancy, 2014. *Little River Trail Feasibility Study*. 2014. Prepared by Natural Resources Division of Redwood Community Action Agency. (April 2014).

State Coastal Conservancy, 2017. *Prairie Creek Gateway Trail Plan*. Prepared for SCC and Save the Redwoods League by Natural Resources Division of Redwood Community Action Agency and CalTrout.

5. BIKE COMMUTE AND SAFETY DATA

To help them prioritize projects, stakeholders (e.g., engineers, planners, board members, users, and funders) want to know how many people are expected to use a proposed facility. It is also valuable to know how many people use an existing facility or how often they use a travel mode, in order to set a baseline. And then it is important to count how many people use a new or an improved facility, and to track usage over time. *Do people bike more often? Are more people bicycling? Where are people bicycling the most or least?* The trends in usage then again help prioritize future projects.

Average trip lengths by bicycle are typically under three miles.
– Pedestrian & Bicycle Information Center, 2015

The federal FAST Act (2015), which emphasizes performance measures, increased the demand for bicycle and pedestrian count data. Counts or estimates of bicycle and/or pedestrian mode share (i.e., commuting levels compared to other modes) are needed to apply for the State’s Active Transportation Program (ATP) grants, and “before and after” count data are required for projects that are awarded funding.

Thus, it is not surprising that professionals, in a survey of those who would apply for ATP funds, said that one of their top challenges was their lack of knowledge or tools for estimating increases in bicycling and walking. Their top three requests for technical assistance were: (i) how to forecast increases in active transportation mode share; (ii) how to use safety data to forecast decreases in injuries and fatalities; and (iii) how to effectively evaluate project outcomes.(LGC, 2015 (Module 4)).

The following summarizes basic approaches to both estimating existing mode shares and to forecasting travel demand and future use. Thereafter, the chapter lists some guides where readers can find details on different tools for active transportation data collection.

CURRENT TRAVEL BEHAVIOR

When we want to understand overall how residents are traveling under existing conditions, we can use US Census data, which is publicly available. (Although, relevant Census information is most readily available for states, counties, and larger cities, and sometimes not available for smaller census tracts.) When we want to know how residents travel a particular roadway corridor, bike network, or school route, collecting raw data is best, except that it takes much more work and time. Below we discuss several ways we use statistical data and travel counts to understand travel habits.

STATISTICAL DATA

Finding Existing Data

The federal government routinely collects demographic data for public use. The U.S. Census Bureau publishes commute (journey to work) data from the decennial census (every ten years) and the continuous American Community Survey (ACS). Annually, the Bureau invites one in 38 households nationwide to complete the ACS, which used to be the decennial census long form. The U.S. Department of Transportation conducts the National Household Travel Survey every five to seven years, and has now conducted the National Survey of Bicyclist and Pedestrian Attitudes and Behavior twice, ten years apart.

The Census data helps estimate travel mode shares and other commuting habits. However, data relate only to “journey to work” travel, so they tell only a fraction of the transportation story. Also, the commute data is itself limited in some respects. First, for practical reasons, the survey asks residents only about how they commuted the week prior to answering the survey. Second, residents answer only which mode they used for the most distance; thus, multimodal trips would not be captured as such. For example, if a resident rides her bicycle to the bus station, takes the bus to the next city, and then walks a quarter mile to her business, only the bus trip would get counted.

The American Factfinder webpage (<http://factfinder.census.gov>) is one portal for getting Census data. You can find commute data by searching by Topic, and selecting from the pulldown menus: People, Employment, Commuting (Journey to Work).

The National Household Travel Survey (NHTS), as “the primary source of information about how people across the Nation travel,” asks for more detailed information than the Census survey, albeit for travel on only a single day. The NHTS assigns a specific travel date to each participant (i.e., survey taker). On his/her assigned day, the participant keeps a diary of all trips he makes, documenting the starting point and time he departed, his destination and time he arrived, and the reason for the trip (e.g., work, school, social, medical, shopping, etc.). Thus, the NHTS will capture non-work trips as well as multi-modal trips.

The first NHTS was done in 1969. The FHWA (an agency of the US DOT) most recently collected data for the NHTS 2016. Reports with survey results usually take between one and two years to be published. The NHTS 2009 data is available in *Summary of Travel Trends: 2009 National Household Travel Survey* (June 2011) at <http://nhts.ornl.gov/2009/pub/stt.pdf>.

Another U.S. DOT survey, sponsored by the National Highway Traffic Safety Administration (NHTSA), is the National Survey of Bicyclist and Pedestrian Attitudes and Behavior. The NHTSA first administered this survey in 2002, the second in 2012. They collected data from phone interviews (landline and cell) with 7,509 U.S. residents aged 16 years or older (with an oversample of people aged 16- to 39-year-olds). The survey asked respondents how frequently they biked and walked outdoors; how they perceived bicycling and pedestrian activity, conditions and safety; if bike paths and lanes were available in the community; knowledge of various laws pertaining to bicyclists and pedestrians; and other questions. The 2012 Survey’s *Findings Report* is online at

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

www.nhtsa.gov/sites/nhtsa.dot.gov/files/811841b.pdf. Some survey results are described later in this chapter.

Demographic Data

Other demographic data can be used to indirectly characterize or extrapolate travel habits. For example, of all demographic features, average age is most directly linked to potential bicycle riding. According to a nationwide survey in 2002, bicycle ridership declines steeply as adults age. Of the survey respondents who were 16-24 years old, nearly 40% had ridden a bicycle in the month preceding the survey; of respondents aged 45-54 years old, 26% had. Only 9% of those surveyed over the age of 65 had ridden a bicycle in the previous month.¹ This data suggest that a lower average age corresponds to a higher potential for bicycle riding.

Humboldt County’s population is approximately 6% under five years old, 20% under 18 years old, and 13% 65-years or older (U.S. Census 2010). Thus, about 67% of the population is 18 to 64 years old (compared to 63.7% for the state overall). Humboldt County’s median age is 37-years old (statewide and nationwide median age is 35-years old). Based on California Department of Finance estimates, Humboldt’s countywide population grew by only 64 people from January 1, 2015 to January 1, 2016, or 0.5%.

Table 5.1 **Humboldt County Population Estimates with Annual Percent Change**

Jurisdiction	Jan 1, 2015	Jan 1, 2016	% of Countywide Population (2016)	% Change 2015 to 2016
Arcata	18,085	18,169	13.4	0.5
Blue Lake	1,278	1,287	0.9	0.7
Eureka	26,811	26,765	19.8	-0.2
Ferndale	1,435	1,434	1.0	-0.1
Fortuna	11,882	11,848	8.7	-0.3
Rio Dell	3,414	3,416	2.5	0.1
Trinidad	368	367	0.2	-0.3
Unincorporated	71,779	71,830	53.1	0.1
Countywide	135,052	135,116	100.0	0.5

Source: State of California, Department of Finance, *May 2016 Tables of City Population Ranked by Size, Numeric and Percent Change*.

Commute-To-Work Data

Both the decennial census and the annual ACS include commute (journey to work) data. However, from one to the other, the Census Bureau uses different survey methods to collect the data. For example, survey questions are sometimes different, and trips may be

The average household in the U.S. generates about 10 vehicle trips per day. Work trips, on average, account for less than 30 percent of daily trips.

¹ Survey conducted by the Bureau of Transportation Statistics and the National Traffic Safety Administration in the summer of 2002. The sample size was 9,616. There has been no follow-up survey to date.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

grouped and counted differently. Thus, the statistical results from each source can vary. Table 5.2, below, shows how the data for bicycle commuting varies between the two. (We note that the time elapsed between the two can also contribute to the differences in results.)

Table 5.2 Bicycle Commuting in Humboldt County, Census and American Community Survey Data

Census Designated Place	Census 2000 Commute by Bicycle (%)¹	ACS 2010-2014 Commute by Bicycle (%)²
Humboldt County (countywide average)	1.7	1.7
<u>INCORPORATED CITIES</u>		
Arcata	5.2	6.2
Blue Lake	2.5	1.0
Eureka	1.7	2.3
Ferndale	0.3	0.0
Fortuna	1.2	1.4
Rio Dell	1.5	0.0
Trinidad	0.0	0.0
<u>UNINCORPORATED COMMUNITIES</u>		
Cutten	0.6	1.7
Humboldt Hill	1.7	0.0
Hydesville	0.0	0.0
McKinleyville	1.1	0.7
Myrtle town	1.3	0.3
Pine Hills	0.4	2.0
Redway–Garberville	0.0	0.0
Westhaven-Moonstone	0.7	0.0
Willow Creek	0.0	0.0
<u>AMERICAN INDIAN RESERVATIONS</u>		
Big Lagoon	n.a.	n.a
Blue Lake Rancheria	0.0	0.0
Hoop Valley Reservation	0.5	0.0
Karuk Reservation	0.0	0.0
Table Bluff Reservation	0.0	0.0
Yurok Reservation	0.0	0.0

¹ U.S. Census Bureau, 2000 Census.

² U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates (Table S0801).

According to the 2000 U.S. Census, 1.7 percent of all employed County residents commute primarily by bicycle (i.e., 50 percent of the time or more), which is above average compared to California (0.8%) and the United States (0.4%). According to more recent estimates from the 2011-2015 American Community Survey, 1.8 percent of employed people (16 years and older, and excluding people who work from home) commute to work by bicycle.

To understand overall mode shares for cities and communities, we can use the Census Bureau’s data for “Means of Transportation to Work” or the ACS data for “Sex of Workers by Means of Transportation to Work” (ACS Tables B08006 and C08006). Bear in mind that commute trips are

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

only a portion of overall trips for daily needs; hence, using only commute data will undercount bicycle and walking trips.

Table 5.3 Means of Transportation to Work (Workers 16 Years and Over), 2010-2014

Census Designated Place	Car (Alone)	Carpool	Public Transit	Bicycle	Walk	Other	Work at Home
Humboldt County (countywide average)	73.5	9.3	1.2	1.7	6.5	1.2	6.6
INCORPORATED CITIES							
Arcata	60.5	8.5	1.8	6.2	17.8	0.8	4.5
Blue Lake	73.6	4.4	0.0	1.0	9.8	1.6	9.6
Eureka	71.9	9.9	2.3	2.3	7.9	2.0	3.7
Ferndale	67.4	4.6	0.0	0.4	15.2	2.2	10.6
Fortuna	71.5	13.2	2.1	1.4	6.5	1.1	4.2
Rio Dell	86.7	7.8	0.0	0.0	1.0	0.0	4.5
Trinidad	48.1	6.0	0.0	0.0	9.0	0.0	36.8
UNINCORPORATED COMMUNITIES							
Cutten	77.1	10.9	0.0	1.7	2.0	3.5	5.0
Humboldt Hill	80.6	11.6	0.1	0.0	3.4	4.1	0.1
Hydesville	94.9	2.9	0.0	0.0	0.0	0.0	2.2
McKinleyville	82.2	9.6	0.9	0.7	1.5	0.2	5.0
Myrtle town	82.5	8.2	0.1	0.3	2.3	0.0	6.6
Pine Hills	77.6	8.6	0.9	2.0	0.0	2.5	8.4
Redway – Garberville	69.0	3.1	0.0	0.0	10.3	0.0	17.4
Westhaven-Moonstone	80.0	6.7	3.0	0.0	5.5	0.0	4.8
Willow Creek	68.4	12.8	1.6	0.0	3.0	0.0	14.2
American Indian Reservations							
Big Lagoon Rancheria	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Lake Rancheria	20.5	0.0	0.0	0.0	79.5	0.0	0.0
Hoopa Valley Reservation	83.8	8.6	0.0	0.0	1.4	0.0	6.2
Karuk Reservation	68.6	19.6	0.0	0.0	7.8	0.0	3.9
Table Bluff Reservation	64.3	7.1	0.0	0.0	28.6	0.0	0.0
Yurok Reservation	64.3	16.1	0.0	0.0	5.5	1.7	12.5

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates (Table S0801).

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

The ACS 2015 data below show very similar results for bicycle commuting countywide. This data reveals that almost five times more men than women commute to work by bike.

Table 5.4 Active Transportation Commutes to Work in Humboldt County, 2015

	ACS 2015 5-Year		ACS 2015 1-Year	
	Totals	%	Totals	%
Countywide:	N = 56,522	100%	N = 55,938	100%
Bicycle	1,028	1.8% ±0.4%	1,211	2.2% ±1%
Walked	3,781	6.7% ±0.9%	4,050	7.2% ±1.6%
Public Transportation (excluding taxicab)	956	1.7% ±0.5%	1,560	2.8% ±1.8%
Male:	29,790	52.7% ±1.2%	28,558	51.1% ±2.5%
Bicycle	815	1.8% ±0.4%	1,000	1.8% ±0.9%
Walked	1,901	6.7% ±0.9%	2,078	3.7% ±1.2%
Public Transportation (excluding taxicab)	491	1.7% ±0.5%	839	1.5% ±1.3%
Female:	26,732	47.3% ±1.1%	27,380	48.9% ±2.1%
Bicycle	213	0.4% ±0.2%	211	0.4% ±0.5%
Walked	1,880	3.3% ±0.6%	1,972	3.5% ±1.2%
Public Transportation (excluding taxicab)	465	0.8% ±0.3%	721	1.3% ±1%

¹ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates: Table B08006 – Sex of Workers by Means of Transportation to Work.

² Ibid: Table C08006 – Sex of Workers by Means of Transportation to Work.

Calculating Ridership from Statistical Data

As noted above, the statistical commute data is readily available, but has limitations for bicycling and other active transportation modes. Many government agencies, universities, and transportation professionals have researched how to utilize the existing, established data to measure and forecast the demand for bicycling. Below are formulas devised by professionals who researched this topic for the National Cooperative Highway Research Program (NCHRP) of the Transportation Research Board (TRB) of the National Academies of Sciences, Engineering, and Medicine. The information is from *NCHRP Report 552: Guidelines for Analysis of Investments in Bicycle Facilities* (TRB 2006).

ESTIMATING EXISTING BICYCLE COMMUTERS FROM POPULATION AND MODE SHARE CENSUS DATA

To apply this formula, the user defines the geographic area.

- (1) Choose and identify ¼-, ½-, and/or 1-mile geographic area of subject facility (or 400-, 800-, and/or 1,600-meter buffer).
- (2) Establish residential population (*R*) by multiplying area by user-defined population density.
- (3) Multiply *R* by 0.4. (Multiplier assumes area's demographics are consistent with national averages: 80% of residents are adults and 50% of adults are commuters.)
- (4) Daily existing bicycle commuters = $R * 0.4 * C$
 where *C* is bicycle commute share % for adults (Census data)

ESTIMATING TOTAL BIKE SHARE

Because the census data are confined to work-commute trips only, they leave out how people generally travel to school and other utilitarian trips, not to mention walking and biking recreationally and for exercise. Below is a formula to convert bike-commute trip data to a statistical estimate for total bike trips (not just bike commute trips).

“On any given day, roughly 1% of the adults in the United States ride a bicycle.” There is, of course, a range of low to high rates for different geographic areas (different in size or location). Researchers have observed that “the lower bound for the number of daily adult bicyclists is equal to the commute share...” However a more accurate or “A ‘most likely’ value would be 0.4% plus 1.2 times the commute share; this was the best fit at the MSA (metropolitan statistical area) level, and also describes the United States as a whole” (TRB 2006).

Thus, to estimate total number of daily adult cyclists (T):

$$\text{Ranges: } T_{low} = C$$

$$T_{moderate} = 1.2C + 0.4\%$$

$$T_{high} = 3C + 0.6\%$$

where C = % bicycle commute share (Census data)

Multiply low, moderate and/or high T by number of adults in study area (assumes adults are 80% of total population).

$$\text{Total daily existing adult cyclists} = T_j * R * 0.8$$

where R = total population

Here is the example using Humboldt County’s 2015 ACS datum:

If bike commute share $C = 1.8$, then

$$T_{low} = 1.8\%$$

$$T_{moderate} = (1.2 \times 1.8\%) + 0.4\% \\ = 2.16\% + 0.4\%$$

$$T_{high} = (3 \times 1.8\%) + 0.6\% \\ = 5.4\% + 0.6\%$$

$$\text{Percentage} = 1.8\%$$

$$\text{Percentage} = 2.2\%$$

$$\text{Percentage} = 6\%$$

$$\text{Total} = 1.8\% \times 135,116 \times 0.8 \\ = 1,945$$

$$\text{Total} = 2.2\% \times 135,116 \times 0.8 \\ = 2,378$$

$$\text{Total} = 6\% \times 135,116 \times 0.8 \\ = 6485$$

These estimates say that the “most likely” number of bicycle riders in Humboldt County (average on any given day) is 2,378 or 2.2% of the adult population. The estimated high range says that the upper bound of bicyclists is 6%, meaning that up to an estimated 4.2% (4,540) more people ride a bike for non-commute trips, which are not captured by the ACS data.

The *NCHRP Report 552* gives a second equation to use to predict total riding share at the MSA and city level. (Note that they researched larger metropolitan cities such as Portland, Sacramento, Cincinnati, and Houston.)

Equation 2 for the percentage of the adult population who bicycle in a day (A):

$$A = 0.3\% + (1.5 * C)$$

where C = bicycle commute share %

Equation 2 applied to Humboldt County’s 1.8% datum:

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

$$\begin{aligned} A &= 0.3\% + (1.5 * 1.8\%) \\ &= 0.3\% + 2.7\% \\ &= 3.0\% \end{aligned}$$

where A is the adult population who bicycle in a day

“Overall,...the hypothesis that overall bicycling rates will correlate with bicycle commuting rates seems to be supported: indeed the correlation seems quite strong at this geographical level (metropolitan statistical areas)” (TRB 2006).

Inferences from National Surveys

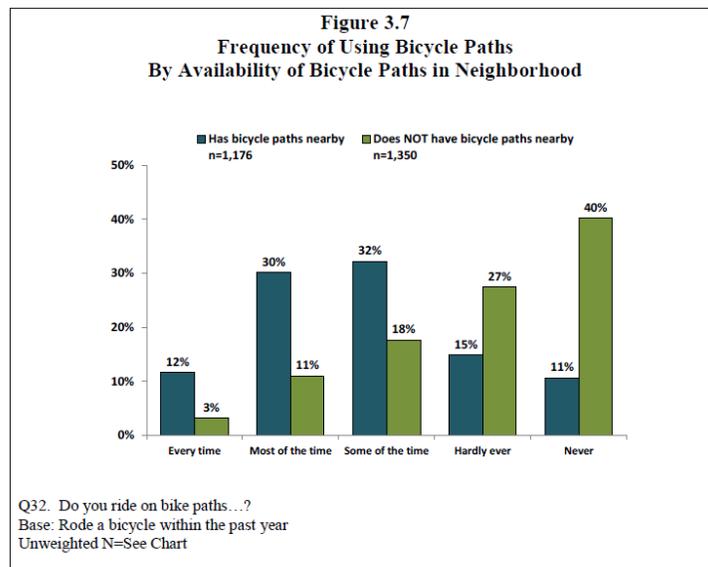
The 2012 *National Survey of Pedestrian and Bicyclist Attitudes and Behaviors* (NHTSA 2013) offers some data that could be used to inform predictions for bicycling behavior for smaller populations below the national level. Some examples follow.

Respondents who had ridden a bicycle within the past year:

Reasons for Bicycling	Percent
Recreation	33
Exercise or health	28
Personal errands	17
Visit a friend or relative	8
Commuting to/from work	7
Commuting to/from school	4

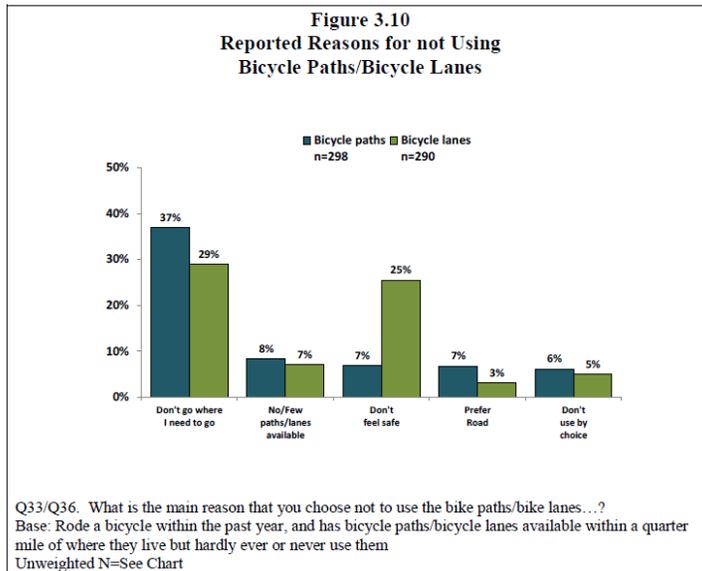
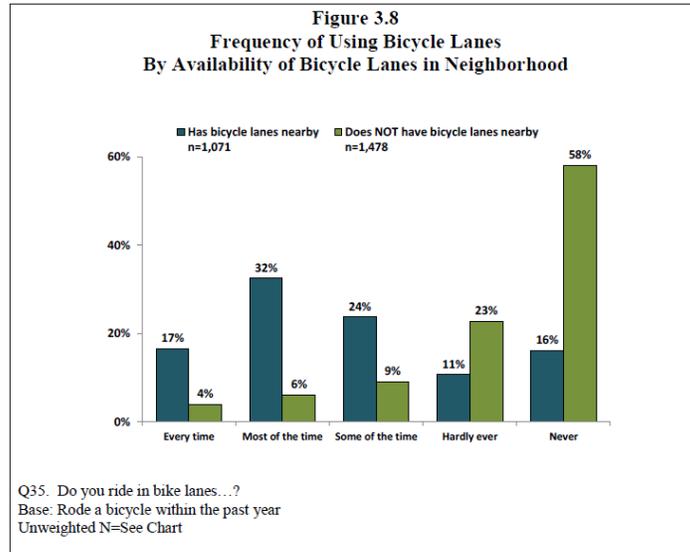
61% of respondents rode their bike for recreation and 36% rode to make a utilitarian trip.

Answers from respondents who have bicycle paths or bicycle lanes available within a quarter mile of where they live:



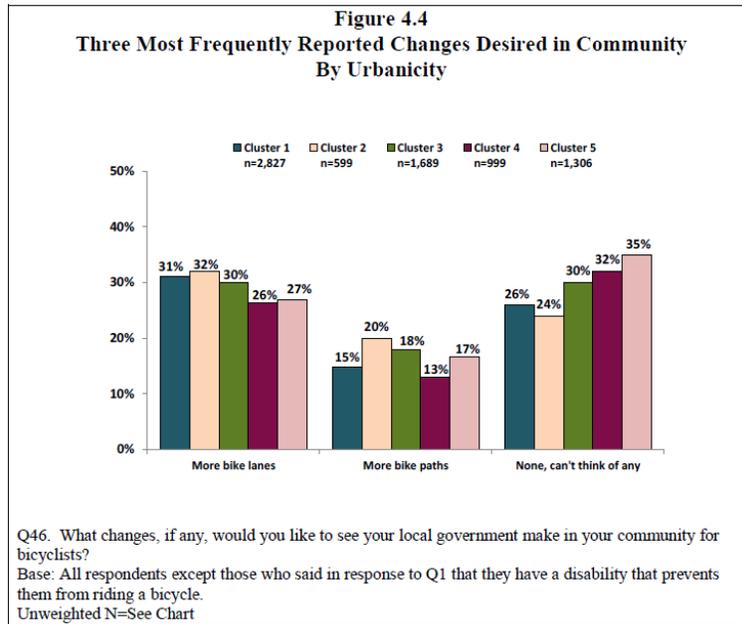
Source: NHTSA 2013

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment



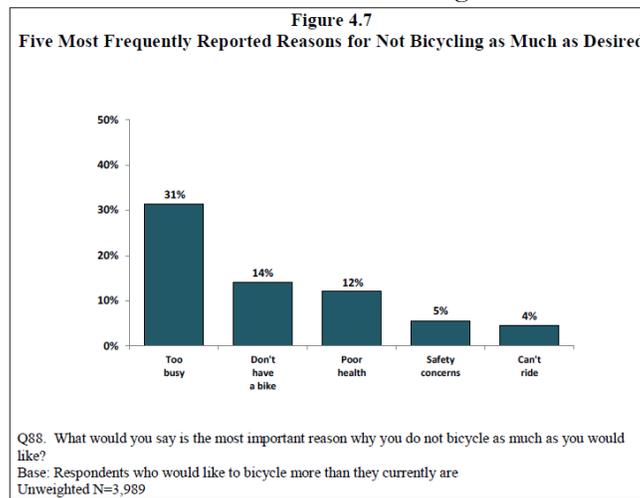
Source: NHTSA 2013

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment



Source: NHTSA 2013

For those who expressed a desire to bicycle more, the survey asked them to indicate the main reason they do not bicycle as much as they would like. Close to one-third reported that they were too busy. The second most common reason mentioned was not having access to a bicycle.



Source: NHTSA 2013

HEALTH ESTIMATES

There is no definitive methodology for measuring or estimating health benefits due to bicycling or increases in active transportation. The field is open wide for innovative, performance-based approaches. Practitioners in both the transportation and public health fields are researching and developing methodologies, but it remains both resource-intensive and challenging to collect and analyze data for good, solid results.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

A simplified approach is to, again, use existing demographic data to infer uses. That is, to apply national averages to your local population to estimate “broad stroke” bicycle use. For example, this data could broadly estimate trends for physical activity from a network or corridor of Class I multi-use trails. On a typical summer day in, people who took a bicycle trip, on average, rode for over an hour (65 minutes). The majority of trips were recreational or for exercise.

Trip Duration, by percent	Percent
0-30 minutes	42
31-60 minutes	36
61-120 minutes	15
121 minutes or longer	7
Average Trip (<i>during the summer</i>)	65.2 minutes

Source: NHTSA 2012

The City of Vista (San Diego County) applied for an Active Transportation Program grant for a pedestrian project at Maryland Elementary School. To answer how the project would increase walking and bicycling, the City combined travel counts with the Health Economic Assessment Tool (HEAT) developed by the World Health Organization. Maryland Elementary collected trip data at the school, the project site. Based on the walking trips data, the HEAT generated an estimate of “Reduced mortality as a result of changes in walking behavior,” with the following results:

The walking data you have entered corresponds to an average of **22.72** minutes per person per day. This level of walking provides **an estimated** protective benefit of: **18 %** (compared to persons not walking regularly). From the data you have entered, the number of individuals who benefit from this level of walking is: **372**.

Out of this many individuals, the number who would be expected to die if they were not walking regularly would be: **2.97** The number of deaths per year that are prevented by this level of walking is: 0.53 (City of Vista, 2014)

The City of Vista then used the HEAT’s “estimated protective benefit” (18%) in the following formula:

Calculations for Percentage of Trips Shifted to Walking/Biking:

Shift = (Enrolled Students)(% Don’t Walk)(% Could Who Don’t)(% Benefit)

Shift = (589)(73.5%)(46.9%)(18%) = 37

% Shift = Shift/(589 Enrolled Students) = 37/589

% Shift = 6.28% ≈ 5% to be conservative

TRIP COUNTS

In addition to automated counters or an ongoing counting program, short-term strategies that can help you collect data are:

- Student-travel tallies (collaborate with schools in project area. classroom tallies)
- One-time manual bike/ped counts
- Mobile automatic counters (less expensive than permanent, installed counters)

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

- Manual surveys

Comparison of Data Collection Methods

Low-Cost	Data Collection Method	Type of Data
	Web-based Surveys	Bicyclists, Pedestrians (Separate)
	Classroom Surveys	Bicyclists, Pedestrians (Separate)
	Manual Counts	Bicyclists, Pedestrians (Separate)
	Intercept Surveys (along trail or sidewalk)	Bicyclists, Pedestrians (Separate)
	Mobile Automatic Counters	Bicyclists, Pedestrians (Separate)
	Pneumatic Tubes	Bicyclists Only
	Permanent Automatic Counters	Bicyclists, Pedestrians (Some Can Distinguish)
	Higher Cost	

Source: LGC 2015

FORECASTING FUTURE BICYCLE TRAVEL

Data used to forecast travel demand can range from readily available U.S. Census data to large sets of cell phone data, to site-specific counts or surveys. Many forecasting tools are also publicly available. The more sophisticated tools, such as multi-variate travel demand modeling applications, commonly require a relatively high level of training or experience and ample amounts of time. The more sophisticated software can be costly.

Forecasting methodologies will predict travel demand based on aggregate or disaggregate data. “Aggregate forecasting tools analyze a collective or ‘aggregated’ set of data on existing travel choices to predict travel choices. As an example, this may include using Census Journey-to-Work data for an area to determine what the mode split would be for a new school” (PBIC 2015). Disaggregate forecasting, in contrast, analyzes a set of individuals’ the travel choices and their individual characteristics (e.g. age, gender, income level, employment, etc.), then estimates how individuals with the same characteristics across the population can be assumed to make the same travel choices. An example of disaggregate forecasting is using travel surveys to determining what demographic bicycles the most (e.g. male, full-time student, aged 18 to 24), then forecasting bicycling rates based on how many people in the population fit that demographic.

A previous funding source required bike plans to estimate how many more people would commute by bike after the plan was implemented (i.e., presumed to be a result of implementing the plan). Therefore, the 2004 *Humboldt County Regional Bicycle Transportation Plan Update* included data on the existing and projected levels of bicycle commuters. The consultants used aggregated population data to estimate the total number of existing bicycle commuters. Then they used those estimates to forecast the future number of bicycle commuters. HCAOG updated the data for the 2012 update; the regional data is reproduced below as an example.

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Bicycle commuter estimates from the *Humboldt Regional Bicycle Plan–Update 2012*:

Humboldt County Region (incorporated and unincorporated areas)		
Demographic Detail	Data	Source
Population Estimates		
– DOF, with 2000 benchmark	71,567	California Department of Finance
– ACS, 5-Year Estimate	69,018	2005-2009 American Community Survey
Population 5-14 years old	8,338	2005-2009 ACS
Population 16 years or older	61,698	2005-2009 ACS
Population in labor force	34,653	2005-2009 ACS
Workers (16 years and older) who commute to work	30,601	2005-2009 ACS
Bicycle-to-work commuters	428	2005-2009 ACS
Bicycle-to-work mode share	1.4%	Calculated from above
Students enrolled in grades 1 thru 12	10,362	2005-2009 ACS
Total # of bicycle commuters	1,1231,526	Assumes 5% of school students and 10% of college students commute by bicycle - from national studies and estimates*
Miles ridden by bicycle commuters per weekday	7,574	(Work commuters + college commuters x 7 miles) + (1 st - to 12 th -grade student commuters x 1 mile) (round trips)*
Forecasts: Estimated for fully implementing Bike Plan (20-year horizon)*		
Projected # of future daily bicycle commuters	9,548	Estimated using increase to 279% of baseline from 2000 LACMTA ¹ study by Alta
Future # miles ridden by bicycle commuters per weekday	47,389	Based on average miles per weekday by existing bicycle commuters (assumes 0.64 motor miles per bicycle commuter mile)
Reduced motor vehicle miles per weekday	30,329	(0.0184 tons per reduced mile)
Reduced PM10 (lbs/weekday)	558	(0.0499 tons per reduced mile)
Reduced NOX (lbs/weekday)	8 1513	(0.0726 tons per reduced mile)
Reduced ROG (lbs/weekday)	1 2,201	
Reduced motor vehicle miles per year	5,459,220 to 7,582,250	Range based on 180 days for students to 250 days for employed persons
Reduced PM10 (lbs/year)	100,450	180 days (0.0184 tons per reduced mile)
Reduced NOX (lbs/year)	272,415	180 days (0.0499 tons per reduced mile)
Reduced ROG (lbs/year)	396,340	180 days (0.0726 tons per reduced mile)

*Calculations based on Alta Planning + Design formulas. ¹Los Angeles County Metropolitan Transportation Authority

Source: Humboldt Regional Bicycle Plan: Update 2012

There are situations where there simply is no existing trip activity to count, for example where a new trail is proposed. In such cases travel demand is estimated based on other available data, applying any number of metrics or techniques. Planners and engineers typically rely on bike data that can be collected from a similar facility type, such as ridership volumes on adjacent streets, and extrapolate a forecast from there. Obviously, the more alike the “proxy” facility is to the proposed one, the better. It might be a nearby trail, street or intersection, a similar facility located in a like location (e.g. in another similar sized downtown, near another transit station, adjacent to park or school, an equivalent connection to the California Coast Trail, etc.).

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Another approach is to conduct a survey(s) to estimate the percentage of potential users. Or, if the Level of Traffic Stress (LTS) has been designated, that, too, can be used to predict demand. For example, if a jurisdiction proposes a roadway project that would result in a lower LTS, they could forecast the increase in bicycle ridership for the new LTS classification. Again, if data cannot be collected, projected trips might be extrapolated from other statistical sources, as discussed above.

Online Modeling Tools

The following are just a few of the many travel modeling tools available to forecast future bicycle travel. The following are available to the public for free.

SEAMLESS TRAVEL MODEL

Caltrans developed the Seamless Travel Model; it includes bicycle and pedestrian models. It is available for use by anyone; however, it is a technical approach which requires technical expertise, such as GIS.

Key inputs:

- AM peak bicycle/pedestrian count
- Employment and population density
- Presence of retail
- Length of nearby Class I bikeway

Methodology available at:

<http://www.path.berkeley.edu/sites/default/files/publications/PRR-2010-12.pdf>

BENEFIT-COST ANALYSIS OF BICYCLE FACILITIES ON-LINE TOOL

This tool is based on research completed for National Highway Cooperative Research Program (HCHRP) Report 552, and provides outputs for:

- Total new bicyclists
- New adult bicyclists
- New bicycle commuters
- New child bicyclists

It also estimates mobility, health, and economic benefits. It is available from the Pedestrian Bicycle Information Center's website at www.pedbikeinfo.org/bikecost/index.cfm.

MAPPING RESOURCES

www.healthycity.org

www.communitycommons.org

GUIDES FOR DATA COLLECTION



Transportation Research Board’s (TRB’s) “National Cooperative Highway Research Program (NCHRP) Report 797: **Guidebook on Pedestrian and Bicycle Volume Data Collection**” (2014) describes methods and technologies for counting pedestrians and bicyclists, offers guidance on developing a non-motorized count program, gives suggestions on selecting appropriate counting methods and technologies.

The TRB has also released the Web-Only Document 205: **Methods and Technologies for Pedestrian and Bicycle Volume Data Collection**. It documents the research that led to the NCHRP Report 797 guidebook, such as testing and evaluating a range of automated count technologies that capture pedestrian and bicycle volume data. Available at <http://www.trb.org/Main/Blurbs/171974.aspx>

The NCHRP Study 08-78 interim report, “Estimating Bicycling and Walking for Planning and Project Development” is another resource for forecasting. The authors have categorized available forecasting tools by the geographic scope they cover (NCHRP Report 770 and a technical background document, March 2011).



PEDESTRIAN AND BICYCLE INFORMATION CENTER

[PEDBIKEINFO.ORG](http://pedbikeinfo.org)

The pedbikeinfo.org website has several resources for planning and design. The “Planning & Data Collection Tools” menu includes: crash data, counts, surveys, inventories, audits, secondary data sources, and the ActiveTrans Priority Tool.

The website is funded by the U.S. DOT FHWA and maintained by the Pedestrian and Bicycle Information Center (PBIC) within the University of North Carolina Highway Safety Research Center.

NATIONAL BIKE & PEDESTRIAN DOCUMENTATION PROJECT

This national count project is being carried out in an effort to develop a standardized method for conducting manual counts, and to obtain pedestrian and bike count data nationwide. The counts

happen every year and are ongoing. Communities participate by conducting counts during the second week in September. During that week, they count bicyclists and/or pedestrians—at the location(s) of their choice—from 5pm to 7pm on at least one weekday (Tuesday, Wednesday, or Thursday), and from noon to 2pm on Saturday.

Agencies may want to participate in annual nation count, and can also use this methodology for other data collection. The methodology includes factors to use to extrapolate annual usage estimates, e.g. factors for seasonal weather changes. The National Project provides information to download (data collection sheets, data spreadsheet, methodology, etc.) from the official website www.bikepeddocumentation.org.

QUANTITATIVE SAFETY DATA

Quantitative safety data is data that will help identify roads, intersections, or other facilities that have a high incidence of collision, hazards, or injuries and may therefore be priorities for implementing projects to improve safety. Analyzing the data should help you understand primary collision factors and what countermeasure or series of countermeasures can address the infrastructure deficiency or other problem.

The FHWA **Crash Modification Factors Clearinghouse** website is an online repository of resources “to help transportation engineers identify the most appropriate countermeasure for their safety needs” (<https://safety.fhwa.dot.gov/tools/crf/resources>).

Collision data can be obtained from the **Statewide Integrated Traffic Records System (SWITRS)** and the Transportation Injury Mapping System (discussed below). The California Highway Patrol (CHP) maintains the SWITRS database of collision records, including bicycle crashes, reported to and recorded by local police and the CHP. The records are compiled into an annual statewide report. Local police, sheriff, and CHP departments will generally have more up-to-date collision reports than SWITRS.

For the years 2011 through 2015, the California Highway Patrol SWITRS report collision data indicates that the Humboldt region had a total of 302 reported bicycle collisions, with 263 bicyclists injured, and four bicyclists killed (see Table 5.6).

Humboldt Regional Bike Plan – Update 2017
DRAFT For Public Review & Comment

Table 5.6 Reported Collisions in Humboldt County, 2011-2015

	Total Collisions	Collisions Involving a Bicycle	Bicyclist Killed	Bicyclists Injured	Property Damage
2011	2,004	71	2	58	12
2012	2,118	65	1	59	7
2013	2,040	68	1	53	16
2014	1,996	52	0	48	5
2015	2,008	46	0	45	4
Total	10,166	302	4	263	44

*Reported collisions for calendar year. Source: California Highway Patrol, SWITRS Reports.

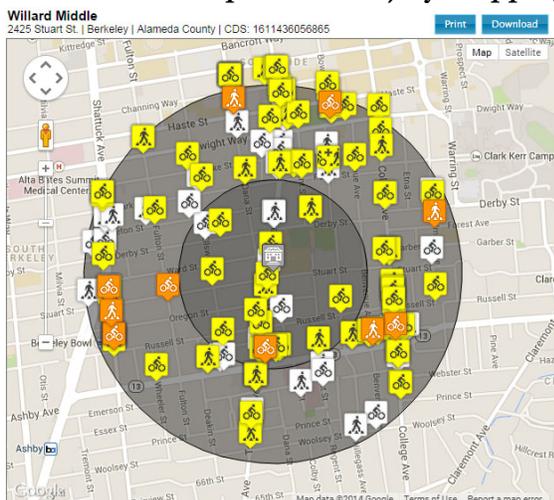
Table 5.7 shows accidents reported by jurisdiction. Eureka had the highest percentage of collisions; the unincorporated County had the second highest. Arcata had the third highest percentage; however, because the City of Arcata covers a smaller area than the unincorporated County, the City may have a higher accident rate per square mile.

Table 5.7 Collisions Involving Bicycle by Jurisdiction, Humboldt County, 2011-2015*

Jurisdiction	2011		2012		2013		2014		2015		Total for jurisdiction	
	#	%	#	%	#	%	#	%	#	%	#	%
Arcata	19	26.7	11	16.9	11	16.1	13	25.0	13	28.2	67	22.3%
Eureka	30	42.2	34	52.3	33	48.5	18	34.6	19	41.3	134	44.6%
Fortuna	1	1.4	3	4.6	3	4.4	5	9.6	2	4.3	12	4.0%
Unincorporated County	21	29.5	17	26.1	21	30.8	16	30.7	12	26.0	87	29.0%
Regionwide Total	71	100%	65	100%	68	100%	52	100%	46	100%	300	100%

*Reported for calendar year. There are no reported collisions in 2011-2015 for Ferndale, Rio Dell, or Trinidad. Source: California Highway Patrol, SWITRS Reports.

The online Transportation Injury Mapping System (TIMS) provides data tools and mapping



analysis tools for traffic safety-related planning. It includes the **Safe Routes to School Collision Map Viewer** which will map pedestrian and bicycle collisions near schools, based on data accessed from the California Department of Public Schools Database. (https://tims.berkeley.edu/help/SRTS_Colsn_Map_Viewer.php)

This site also performs SWITRS queries and maps. (www.tims.berkeley.edu)

TIMS is by the Safe Transportation Research and Education Center (SafeTREC) at the University of California, Berkeley.

REFERENCES

City of Vista, 2014. “Maryland Elementary Pedestrian Mobility Improvements, Cycle 1 Active Transportation Program (ATP)” May 21, 2014.
www.catc.ca.gov/programs/ATP/2014_Project_Applications/0702_Vista.pdf

LGC 2015. (Local Government Commission) “Support for Smaller Agencies and Disadvantaged Communities: Developing Effective Active Transportation Projects and Programs” (Annotated workshop presentations, April 2015). www.lgc.org/atp-support/resources.

NHTSA 2013. (National Highway Traffic Safety Administration, U.S. DOT) *2012 National Survey of Bicyclist and Pedestrian Attitudes and Behavior Volume 2: Findings Report*. Authors Paul Schroeder and Melanie Wilbur. (October 2013) www.nhtsa.gov/sites/nhtsa.dot.gov/files/811841b.pdf

PBIC 2015. (Pedestrian and Bicycle Information Center) 2015. White Paper Series, “Bicycle and Pedestrian Forecasting Tools: State of the Practice,” April 2015. Prepared for FHWA. (www.pedbikeinfo.org)

TRB 2006. (Transportation Research Board) *NCHRP Report 552: Guidelines for Analysis of Investments in Bicycle Facilities*. (National Cooperative Highway Research Program) By Kevin J. Krizek, Gary Barnes, et al.