City of Novato
Bicycle / Pedestrian Plan

Adopted by Novato City Council on March 24, 2015

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1 Introduction

The Novato Bicycle / Pedestrian Plan provides for a recommended citywide network of sidewalks, bicycle paths, lanes and routes, along with pedestrian- and bicycle-related programs and support facilities, intended to ensure bicycling and walking become a more viable transportation option for people who live, work and recreate in Novato. Current bikeway and pedestrian network information was gathered from meetings with the Novato Bicycle/Pedestrian Advisory Committee (B/PAC) and City staff, and combined with information on proposed routes from the previously adopted City of Novato Bicycle Plan (2007). Relevant bikeway information was also gathered from the Marin County Unincorporated Area Bicycle and Pedestrian Master Plan (2008).

The purpose of this bicycle and pedestrian plan is to improve the bicycling and walking environment in Novato by providing direction for future bicycle and pedestrian planning and meeting the guidelines of the California Active Transportation Program, the requirements of which are contained in Senate Bill 99 (Chapter 359, Statutes of 2013).

1.1 Community Participation

The Novato Bicycle and Pedestrian Advisory Committee (B/PAC) allocated time from one of their regularly scheduled meetings in May 2014 to discuss potential updates to the City of Novato Bicycle Plan. The meeting was noticed through distribution to the interested parties’ list of the B/PAC. The B/PAC is an advisory committee to the Novato City Council. The meeting was agendized and noticed in accordance with the Brown Act and was open to the public. In addition, public input was received at two City of Novato Bicycle / Pedestrian Plan update public workshops held on Wednesday, September 17, 2014 and Wednesday, November 12, 2014; both meetings were held at the City of Novato Administrative Offices.
2 Plan Goals & Policies

Novato strives to be one of the most walkable, bikeable, livable and age-friendly cities in the United States and to provide a safe, beautiful, and connected system of pedestrian and bike paths, making the healthy choice the easy choice for all ages and abilities. Walking and biking should be a way of life and be part of Novato residents’ daily routine.

2.1 Plan Goals

- Improve the health of all Novato residents by making the healthy choice the easy choice.
  - Create a comprehensive system of bicycling and walking paths that connects key destinations, including parks, schools, shopping, and invites people to get outdoors.
- Develop a bicycle and pedestrian environment that sustains healthy communities and supports a vibrant economy.
- Improve walkability of Novato streets.
  - Adopt the draft Complete Streets Policies white paper that is designed to enable safe access for all users, including bicyclists, pedestrians, motorists, and transit riders.
  - Provide pedestrian access to major destinations, like downtown, senior center, gymnastics center, and parks.
  - Design streets for use by youth, seniors, and the disabled community.
  - Provide age-friendly street amenities, including seating areas, good lighting, timing of lights to allow safe crossing, and restroom facilities.
- Encourage students to bicycle and walk to school.
  - Establish walking zones 1 mile around elementary schools and 1.5 miles around middle and high schools where walking encouragement and education are prioritized.
  - Establish bicycling zones 1 mile around elementary schools and 2 miles around middle and high schools where bicycling encouragement and education are prioritized.
- Increase bicycle and pedestrian safety.
  - Improve lighting at intersections.
  - Improve visibility wherever pedestrians walk.
  - Improve crossing conditions, particularly in areas with high pedestrian demand.
  - Manage vehicle speeds to support and encourage bicycling and walking.
  - Design buildings and streets to support active use and enhance the perception and feeling of safety by bicyclists and pedestrians.
- Plan, design, and build complete streets.
- Create vibrant public spaces that encourage walking and bicycling.
  - Create downtown events that encourage biking or walking.
  - Include park amenities that invite walking and bicycling.
- Encourage more people to walk and bicycle outdoors.
Produce or encourage education, marketing, and promotion or incentive programs.
Create pedestrian wayfinding and walking maps citywide to invite and motivate residents to get out and walk.

- Increase social interaction on streets.
  - Provide amenities and events that engage residents and visitors.
  - Create a closed-street event series, where streets are closed to vehicles and active recreation opportunities are created.

- Build strong communities and livable neighborhoods.
  - Create walkable neighborhoods that are connected to shops, transit, schools and parks and recreation opportunities.

- Become a sustainable city.
  - Reduce emissions from cars through walking and bicycling trip activity.
  - Reducing health care costs by improving health through physical activity.
  - Reduce our consumption of fossil fuels by creating an environment where one can leave the car at home.

- Foster economic growth.
  - Design and build livable streets that are safe, inviting, and foster community cohesion in order to maintain a strong economy.

- Reduce bicycle- and pedestrian-related collisions.
  - Reduce the total number of annual collisions by 50 percent from 2015 to 2020.
  - Reduce the annual number of bicycle and pedestrian collisions to zero.

- Seek Bicycle Friendly CommunitySM designation from The League of American Bicyclists and Walk Friendly Community designation from the University of North Carolina Highway Safety Research Center’s Pedestrian and Bicycle Information Center (See Appendix E: ).

Cities are recognizing that a thriving and robust bicycle and pedestrian environment is a key element of economic vitality and vibrancy, and that daily bicycling and walking are a key protective factor that supports health and prevents disease. Bikeable and walkable neighborhoods with active streets that promote interaction, while providing safe and efficient ways for residents to travel on foot – to the store, to a neighbor, to school – are a key component in making Novato a healthy and thriving community!

2.2 Consistency with Adopted Plans and Policies

The Novato Bicycle / Pedestrian Plan is consistent with the 1996 Novato General Plan – Transportation Element, the 2008 Marin County Unincorporated Bicycle and Pedestrian Master Plan, and the Metropolitan Transportation Commission’s (MTC) Transportation 2035 Plan for the San Francisco Bay Area, as well as the 2035 City of Novato General Plan update scheduled for release in the summer of 2015.
Other plans that promote walking and/or bicycling include:

- **Draft Complete Streets Policies (2014)** – As part of the 2035 *City of Novato General Plan* update, the City developed a white paper that describes complete streets planning and design principles, provides guidance on complete street policies, offers examples of complete streets policies adopted by other public agencies, and proposes draft policy and program statements that may be considered for inclusion in the 2035 *City of Novato General Plan’s Circulation Element*.

- **City of Novato Community-Based Transportation Plan (2015)** – As part of an effort by the Metropolitan Transportation Commission (MTC) to identify barriers to mobility and work to overcome them, the City of Novato used a grassroots approach to develop locally-identified transportation needs and solutions to address them.

- **Department of Public Works Multi-modal Policy (2006)** – “At the outset of all projects, other than routine maintenance, an analysis shall be performed to ensure the inclusion of all necessary, appropriate and reasonable multi-modal facilities and improvements. The analysis shall include facilities related to transit, bike and pedestrian access, disability access, and transit safety.”

- **SMART FEIR (2006)** – This environmental impact report for a planned commuter rail line lays out detailed plans for a rail-with-trail project including a continuous bikeway and safe station access for bicycles and pedestrians.

- **Marin Countywide Plan** – This plan, adopted in late 2007, provides countywide policy guidance on integration of bicycling, walking, and accessibility into the transportation network. An update to the Marin Countywide Plan is being coordinated with the City of Novato Bicycle / Pedestrian Plan – 2015 and is scheduled to be released in 2016.

- **Nonmotorized Transportation Pilot Program (NTPP)** – Begun in 2006 and administered through 2010, this Federal Highway Administration program allocated $25 million to bicycle and pedestrian projects throughout Marin County. Included was an extensive public outreach and planning process to identify, rank, and select infrastructure projects and educational programs to be funded by the program.

- **Healthy Eating Active Living Cities Campaign (HEAL)** – In 2010, Novato joined other California cities in an effort to improve our community’s health and reduce obesity rates. Obesity rates for adults range from 15 to 46 percent, and nearly 40 percent of our 5th through 9th grade youth are overweight or at risk of becoming overweight, which exceeds the County average by nearly 10 percent. Supporting healthy choices is essential to address the obesity epidemic among California’s children and adults, currently costing the state more than $41 million annually in healthcare and lost productivity. As part of the HEAL campaign, the Novato City Council adopted a resolution committed to working on and prioritizing our efforts in three areas: the built environment, employee wellness, and access to healthy food.
The City of Novato General Plan and municipal code lists several policies and objectives to help to achieve this vision which include bicycle parking requirements for new developments and citing vehicles for parking in bicycle lanes. A detailed listing of the policies can be found in Appendix B.
### 2.3 ATP Compliance Checklist

The State of California adopted Active Transportation Program (ATP) guidelines that encourage increased use of active modes of transportation, such as bicycling and walking, and provide guidance on the inclusion of specific active transportation plan elements in order to apply for grant funding. The *Novato Bicycle / Pedestrian Plan* should include the following provisions to fully comply with ATP guidelines:

**Table 2-1: Novato ATP Compliance Checklist**

<table>
<thead>
<tr>
<th>Required Plan Elements</th>
<th>Location Within the Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.</td>
<td>Table 3-2</td>
</tr>
<tr>
<td>(b) The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.</td>
<td>Section 3.4</td>
</tr>
<tr>
<td>(c) A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.</td>
<td>Section 3.2; Figure 3-4</td>
</tr>
<tr>
<td>(d) A map and description of existing and proposed bicycle transportation facilities.</td>
<td>Section 4.1; Figure 4-1; Chapter 5</td>
</tr>
<tr>
<td>(e) A map and description of existing and proposed end-of-trip bicycle parking facilities.</td>
<td>Section 4.1.5; Figure 4-6</td>
</tr>
<tr>
<td>(f) A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.</td>
<td>Section 4.7</td>
</tr>
<tr>
<td>(g) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.</td>
<td>Section 4.7</td>
</tr>
<tr>
<td>Required Plan Elements</td>
<td>Location Within the Plan</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>(h)</strong> A map and description of existing and proposed pedestrian facilities at major transit hubs. These must include, but are not limited to, rail and transit terminals, and ferry docks and landings.</td>
<td>Chapter 5; Figure 5-1</td>
</tr>
<tr>
<td><strong>(i)</strong> A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.</td>
<td>Section 4.1.4</td>
</tr>
<tr>
<td><strong>(j)</strong> A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.</td>
<td>Section 4.7.4</td>
</tr>
<tr>
<td><strong>(k)</strong> A description of bicycle and pedestrian safety, education, and encouragement programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the law impacting bicycle and pedestrian safety, and the resulting effect on accidents involving bicyclists and pedestrians.</td>
<td>Section 4.5</td>
</tr>
<tr>
<td><strong>(l)</strong> A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.</td>
<td>Section 1.1</td>
</tr>
<tr>
<td><strong>(m)</strong> A description of how the active transportation plan has been coordinated with neighboring jurisdictions, including school districts within the plan area, and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.</td>
<td>Section 2.2</td>
</tr>
<tr>
<td><strong>(n)</strong> A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.</td>
<td>Chapter 6</td>
</tr>
<tr>
<td><strong>(o)</strong> A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.</td>
<td>Appendix A</td>
</tr>
<tr>
<td><strong>(p)</strong> A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.</td>
<td>Chapter 7</td>
</tr>
<tr>
<td>Required Plan Elements</td>
<td>Location Within the Plan</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>(q) A resolution showing adoption of the plan by the city, county or district. If the active transportation plan was prepared by a county transportation commission, regional transportation planning agency, MPO, school district or transit district, the plan should indicate the support via resolution of the city(s) or county(s) in which the proposed facilities would be located.</td>
<td>Appendix G</td>
</tr>
</tbody>
</table>
3 Needs Analysis

3.1 Bicycle and Pedestrian Demand

The demand for bicycle and pedestrian facilities can be difficult to predict. Unlike automobile use, where historical trip generation studies, traffic counts, and planned land use development allow one to estimate future demand for travel, bicycle and pedestrian trip generation methods are less advanced and less standardized. Development patterns can help predict demand and are important to bicycle and pedestrian planning because changes in land use (and particularly employment areas) will affect average commute distance, which in turn affects the attractiveness of bicycling and walking as commute modes. Although the land use element of the City of Novato General Plan was last comprehensively updated in 1996, Figure 3-1, the land use map from the plan, was updated in 2014 and is included on the next page. A full update for the land use element is planned to be released in the summer of 2015.

The Novato bicycle and pedestrian network will connect the neighborhoods where people live to the places they work, shop, engage in recreation, or go to school. An emphasis will be placed on regional bikeways and transit connections centered on the major activity centers in Novato, including:

- Downtown commercial district
- Civic buildings such as the community centers, senior centers and libraries
- Schools
- Transit stops
- Neighborhood parks and regional recreational areas
- Shopping centers
- Major employers

The greatest concentration of shopping, civic buildings, places of worship, major employers, and transit routes in Novato center around Downtown Novato and the Vintage Oaks Shopping Center. The City has a relatively even distribution of schools and parks, with larger parks and recreational services located immediately outside the city limits. The location of these amenities across Novato requires the development of corridors that connect them to each other. The location of parks outside of the city limits, such as Stafford Lake Park, requires coordination with the County. Bicycle and pedestrian infrastructure that connect multiple activity centers is included as one of the project prioritization criteria in Chapter 6.
Figure 3-1: General Plan Land Use Map
3.2 Commute Patterns

A central focus of presenting commute information is to identify the current mode split of people that live and work in Novato. Mode split refers to the choice of travel mode a person selects to travel between destinations, be it bicycling, walking, taking a bus, or driving alone or with others. One major objective of any bicycle or pedestrian investment is to increase the percentage of people who choose to bicycle or walk, rather than drive. Every saved motor vehicle trip or vehicle mile represents quantifiable reductions in air pollution and can help to reduce traffic congestion.

Journey to work and travel time to work data were obtained from the US Census Bureau 2012 American Community Survey and 2010 Decennial Census for Novato, Marin County, California, and the United States. The data is shown in Table 3-1.

Table 3-1: Journey to Work Mode Split Compared to the County, State, and Nation

<table>
<thead>
<tr>
<th>Mode</th>
<th>Nationwide</th>
<th>Statewide</th>
<th>Marin County</th>
<th>Novato</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>0.6%</td>
<td>1.1%</td>
<td>1.9%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Walk</td>
<td>2.8%</td>
<td>2.7%</td>
<td>2.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Public Transit</td>
<td>5.1%</td>
<td>5.2%</td>
<td>8.9%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Drive Alone</td>
<td>76.4%</td>
<td>73.3%</td>
<td>65.9%</td>
<td>73.2%</td>
</tr>
<tr>
<td>Carpool</td>
<td>9.6%</td>
<td>11.0%</td>
<td>8.9%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Other</td>
<td>5.5%</td>
<td>6.6%</td>
<td>11.5%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

As shown, about 0.5 percent of all employed Novato residents commute primarily by bicycle. Census data does not include the number of people who bicycle for recreation or for utilitarian purposes, students who bicycle to school, and bicycle commuters who travel from outside Novato, and are therefore likely to undercount true cycling rates. Recreational cycling is especially popular in Novato, with its easy access to popular bicycle routes in west Marin and other areas.

Though Novato’s rate of commute bicycling is low—roughly one-quarter that of Marin County—there are many opportunities for increasing it. The number of Novato commuters who take public transit to work is similar to statewide percentages (4.8 percent and 5.2 percent, respectively). In 2006, two percent of Golden Gate Transit riders arrived at bus stops by bicycle.¹

¹ Marin County Transit District. “Marin County Transit Short Range Transit Plan”. March 2006.
### Table 3-2: Golden Gate Ridership Information from 2012

<table>
<thead>
<tr>
<th>Ridership</th>
<th>Figure</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Boardings</td>
<td>1,483</td>
<td>2012 Ridecheck, sum of all boardings at stops in Novato</td>
</tr>
<tr>
<td>% Walk/Bike</td>
<td>63.6%</td>
<td>2012 On-board passenger survey, % walk/bike to/from Novato stop</td>
</tr>
<tr>
<td>Walk/Bike Boardings</td>
<td>944</td>
<td>% walk/bike applied to daily boardings</td>
</tr>
</tbody>
</table>

If bicycle connections to Golden Gate Transit and Marin Transit stops are improved, and especially if these connections are coupled with improved bicycle storage, it would be possible to shift some vehicle trips to the bus stops into bicycle trips. Improving connections to future SMART stations would also encourage those who are arriving in Novato by SMART to bicycle from the station.

Almost two percent of all employed Novato residents commute to work by foot. This is a fairly high rate for a mid-sized, suburban city, though it is less than the averages for the county, state and nation. There are many opportunities for increasing walking, the most important being increasing the mix of land uses, reducing pedestrian barriers and installing sidewalks in high-priority areas.

#### 3.3 Potential Future Air Quality Improvements

Novato lies within the San Francisco Bay Area Basin, which is regulated by the Bay Area Air Quality Management District (BAAQMD). According to the California Air Resources Board, as of July 2012, the air quality in the San Francisco Bay Area Basin did not meet the minimum state health-based standards for one-hour concentrations ground-level ozone and the State standards for Particulate Matter (PM10) and Fine Particulate Matter (PM2.5). Currently, the basin is classified as marginal non-attainment area for the federal eight-hour ozone standard and the federal 24-hour PM2.5 standard.

According to the BAAQMD, motor vehicles are responsible for approximately 75 percent of the smog in the basin. Reducing vehicle miles traveled (VMT) is a key goal of the BAAQMD, and fully implementing Novato's bicycle and pedestrian network will help achieve this goal by providing residents safe and functional ways to get to work, school, or shopping without relying on motor vehicles. Based on data from the 2010 Decennial Census and estimates of bicycle and pedestrian mode share for students, the current number of daily bicycle and pedestrian

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2 BAAQMD. Ambient Air Quality Standards & Bay Area Attainment Status. Last updated July 15, 2005.  
<www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm>
commuters in Novato is estimated to be 545 people, generating 4,135 daily trips and saving an estimated 17,700 VMT per weekday.

Table 3-3 quantifies the estimated reduction in VMT in Novato following an increase in the bicycle and pedestrian mode share to 4.0 percent, and the estimated reduction in air pollutants based on the best available local and national data. This would result in an estimated decrease of 19 kg/day of Hydro Carbons, 1,728,024 kg/day of Carbon Dioxide, and 123 kg/day of Nitrous Oxide.

This improvement in air quality could be greater assuming that if conditions for bicyclists and pedestrians improve and attract new Novato-based riders, the same conditions may attract bicyclists to the City whose trips originate outside of Novato. Novato’s mild climate and potential rising energy costs nationwide will also encourage additional bicycling and walking as more attractive routes and gap closures are accomplished.
# Table 3-3: Bicycle and Pedestrian Commute and Air Quality Projections

<table>
<thead>
<tr>
<th>Current Commuting Statistics</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novato Population</td>
<td>2010 US Census</td>
</tr>
<tr>
<td>Number of Commuters</td>
<td>2010 US Census <em>(Employed persons minus those working at home)</em></td>
</tr>
<tr>
<td>Number of Bicycle-to-Work Commuters</td>
<td>2010 US Census</td>
</tr>
<tr>
<td>Bicycle-to-Work Mode Share</td>
<td>Mode share percentage of Bicycle to Work Commuters</td>
</tr>
<tr>
<td>Number of Walk-to-Work Commuters</td>
<td>2010 US Census</td>
</tr>
<tr>
<td>Walk-to-Work Mode Share</td>
<td>Mode share percentage of Walk to Work Commuters</td>
</tr>
<tr>
<td>School Children Grades K-11</td>
<td>2010 US Census, population ages 3-17</td>
</tr>
<tr>
<td>Number of College Students</td>
<td>2010 US Census</td>
</tr>
<tr>
<td>Average Weekday Golden Gate Ridership</td>
<td>Average of weekday system wide Golden Gate Transit boardings divided by Estimated 64 Novato Stops</td>
</tr>
<tr>
<td>Number of Daily Bike or Walk Golden Gate Transit Users</td>
<td>RTD <em>(Denver) Bike-n-Ride Survey, December 1999 (Assumes 3.3% of total boardings)</em></td>
</tr>
<tr>
<td>Estimated Total Number of Bicycle Commuters, Utilitarian Riders, and Walking Commuters</td>
<td>Total of bike-to-work, walk-to-work, transit, school, college and utilitarian bicycle commuters, does not include recreation.</td>
</tr>
<tr>
<td>Estimated Adjusted Mode Share</td>
<td>Estimated bicycle commuters plus walking commuters divided by population</td>
</tr>
</tbody>
</table>
### Estimated Current Active Trips

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Daily Bicycle and Walking Trips</td>
<td>4,135</td>
<td><em>Total active commuters x 2 (for round trips) plus total number of utilitarian bicycle trips</em></td>
</tr>
<tr>
<td>Reduced Vehicle Trips per Weekday</td>
<td>1,636</td>
<td><em>Assumes 79% of bicycle and walking trips replace vehicle trips for adults/college students and 57% for school children</em></td>
</tr>
<tr>
<td>Reduced Vehicle Miles per Weekday</td>
<td>7,889</td>
<td><em>Assumes average one-way trip travel length of 4.6 miles for adults/college students and 0.5 mile for schoolchildren</em></td>
</tr>
</tbody>
</table>

### Potential Future Active Commuters

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Workers with Commutes 9 Minutes or Less</td>
<td>2,996</td>
<td><em>US Census 2010</em></td>
</tr>
<tr>
<td>Number of Workers who Already Bicycle or Walk to Work</td>
<td>545</td>
<td><em>US Census 2010</em></td>
</tr>
<tr>
<td>Number of Potential Bicycle Commuters</td>
<td>2,451</td>
<td><em>Calculated by subtracting number of workers who already bicycle or walk from the number of workers who have commutes 9 minutes or less</em></td>
</tr>
<tr>
<td>Future Number of New active Commuters</td>
<td>368</td>
<td><em>Based on capture rate goal of 15% of potential bicycle riders and walkers</em></td>
</tr>
<tr>
<td>Total Future Daily Bicycle Commuters</td>
<td>2,435</td>
<td><em>Current daily bicycle commuters plus future bicycle commuters</em></td>
</tr>
<tr>
<td>Future Total Daily Bicycle or Walking Trips</td>
<td>4,871</td>
<td><em>Total bicycle commuters x 2 (for round trips)</em></td>
</tr>
<tr>
<td>Future Reduced Vehicle Trips per Weekday</td>
<td>3,848</td>
<td><em>Assumes 79% of bicycle trips replace vehicle trips</em></td>
</tr>
<tr>
<td>Future Reduced Vehicle Miles per Weekday</td>
<td>17,700</td>
<td>*Assumes average one-way trip travel length of 4.6 miles for adults. *&lt;br&gt;*Assumes 12 mph average bicycle speed; 23 minute average travel time. *&lt;br&gt;<em>Travel time data from NHTS 2001 Trends, Table 26.</em></td>
</tr>
<tr>
<td>Future Reduced Vehicle Miles per Year</td>
<td>4,690,619</td>
<td><em>256 weekdays per year</em></td>
</tr>
</tbody>
</table>
## Future Air Quality Benefits*

<table>
<thead>
<tr>
<th>Emission Type</th>
<th>Units</th>
<th>Value</th>
<th>Conversion Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced Hydrocarbons (kg/weekday)</td>
<td>19</td>
<td>(0.001077 kg/mile)</td>
<td></td>
</tr>
<tr>
<td>Reduced Carbon Monoxide (kg/weekday)</td>
<td>166</td>
<td>(0.0094 kg/mile)</td>
<td></td>
</tr>
<tr>
<td>Reduced Nitrogen Oxide (kg/weekday)</td>
<td>123</td>
<td>(0.00693 kg/mile)</td>
<td></td>
</tr>
<tr>
<td>Reduced Carbon Dioxide (kg/weekday)</td>
<td>1,728,024</td>
<td>(0.3684 kg/mile)</td>
<td></td>
</tr>
<tr>
<td>Reduced Hydrocarbons (metric tons/year)</td>
<td>5</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
<td></td>
</tr>
<tr>
<td>Reduced Carbon Monoxide (metric tons/year)</td>
<td>43</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
<td></td>
</tr>
<tr>
<td>Reduced Nitrogen Oxide (metric tons/year)</td>
<td>31</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
<td></td>
</tr>
<tr>
<td>Reduced Carbon Dioxide (metric tons/year)</td>
<td>442,374</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
<td></td>
</tr>
</tbody>
</table>

3.4 Collision History

In the five years between January 1, 2008 and December 31, 2012 (the five-year period with the most recent available data), Novato had a total of 144 collisions that involved a bicyclist or a pedestrian. Four of those collisions resulted in a fatality. Below is a detailed analysis of each type of collision. Figure 3-2 shows the locations of each bicycle-related collision.

3.4.1 Bicycle Collisions

Novato has the potential to be particularly good place to ride a bicycle. Unfortunately, more bicycle riders on busy streets means a higher probability of bicycle collisions, unless alternative facilities are provided. The tables summarize the number, type and location of bicycle collisions from January 1, 2008 to December 31, 2012.

Table 3-4: Bicycle-related Collisions, 2008-2012

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Collisions</td>
<td>137</td>
<td>179</td>
<td>147</td>
<td>210</td>
<td>86</td>
</tr>
<tr>
<td>Total Collisions Involving a Bicyclist</td>
<td>18</td>
<td>21</td>
<td>11</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Total Injuries Involving a Bicyclist</td>
<td>18</td>
<td>21</td>
<td>11</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>Fatal Collisions Involving a Bicyclist</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Percent Bicyclists Injured per Total Collisions</td>
<td>13.1%</td>
<td>11.7%</td>
<td>7.4%</td>
<td>11.4%</td>
<td>12.8%</td>
</tr>
</tbody>
</table>

Between 2008 and 2012 the number of bicycle collisions remained relatively consistent, ranging between 11 and 24 collisions per year. One bicyclist fatality occurred in Novato in 2012.

Table 3-5: Bicycle-related Collisions – Time of Day Comparison

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight (9AM – 5PM)</td>
<td>13</td>
<td>13</td>
<td>4</td>
<td>12</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>Dawn &amp; Dusk (6-9AM &amp; 5-8PM)</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>11</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>Night Time (8PM – 6AM)</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>21</td>
<td>11</td>
<td>24</td>
<td>11</td>
<td>85</td>
</tr>
</tbody>
</table>
Figure 3-2: Bicycle-related Collisions, 2008-2012
Between 2008 and 2012, the most collisions occurred during daylight hours (9AM – 5PM). These are the times when the most traffic is traveling on the streets both in cars and on bicycles. The high number of collisions that occurred during dawn and dusk periods could indicate a need for various countermeasures such as bicycle safety education concerning visibility and lights, motorist education regarding watching for bicyclists, or other means to improve visibility of cyclists to motorists (i.e. bicycle lanes, share the road signs, etc.).

Reducing the numbers of collisions is a goal of the Novato Bicycle / Pedestrian Plan. Research shows that bicycle collision rates decrease with traffic riding skills education. The most experienced cyclists have the lowest collision rates, despite many more miles traveled. Bike safety education is an ongoing program of the Novato Police Department. The B/PAC has expressed support for the continuation of that education. The continual addition of bicycle lanes to the Novato streets, and in particular the addition of bicycle lanes in and around the schools of Novato, should help to reduce bicycle collisions.

### 3.4.2 Pedestrian Collisions

Table 3-6 identifies pedestrian collisions within Novato involving injury for the last five years of available data. From January 1, 2008 to December 31, 2012, there were 60 pedestrian-related collisions.

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Collisions</td>
<td>137</td>
<td>179</td>
<td>147</td>
<td>210</td>
<td>86</td>
</tr>
<tr>
<td>Total Collisions Involving a Pedestrian</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Total Injuries Involving a Pedestrian</td>
<td>10</td>
<td>15</td>
<td>16</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Fatal Collisions Involving a Pedestrian</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Percent Pedestrian Injured per Total Collisions</td>
<td>8.0%</td>
<td>7.3%</td>
<td>10.25</td>
<td>6.7%</td>
<td>8.1%</td>
</tr>
</tbody>
</table>

Between 2008 and 2012 the number of pedestrian collisions remained relatively consistent, ranging between 7 and 15 collisions per year. Three pedestrian fatalities occurred in Novato over the five-year period.
### Table 3-7: Pedestrian-related Collisions – Time of Day Comparison

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight (9AM – 5PM)</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Dawn &amp; Dusk (6-9AM &amp; 5-8PM)</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Night Time (8PM – 6AM)</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>14</td>
<td>7</td>
<td>60</td>
</tr>
</tbody>
</table>

Unlike the bicycle collision time comparison, pedestrian collisions were evenly distributed throughout the day. The high number of pedestrians involved in a collision at dawn and dusk could indicate a need for various countermeasures such as motorist education regarding pedestrian right-of-way, pedestrian safety education concerning visibility, and infrastructure improvements such as lighting or other means to improve visibility of pedestrians to motorists.

Nearly one-third of collision (19) occurred on Novato Boulevard, with most clustered around the Novato Fair Shopping Center and the intersection of Novato Boulevard and 7th Street. Three collisions resulted in fatalities:

- A collision involving a pedestrian and motorcyclist at San Marin Drive and San Carlos Way near San Marin High School occurred in May 2009. The collision resulted in the death of one pedestrian, and the primary collision factor reported was driving under the influence of alcohol.
- A collision resulting in the death of a pedestrian on US 101, west of the Nave Drive and Hamilton Parkway intersection, occurred in May 2010. The primary collision factor reported was driving under the influence of alcohol.
- A collision resulting in the death of a pedestrian along Novato Boulevard, west of the Novato Fair Shopping Center, occurred in November 2011. No primary collision factor was reported.

Other data observations include:

1. Seven collisions resulted in severe injuries and 26 collisions resulted in visible injuries.
2. More than half of the pedestrian-related collisions (58.3%) occurred when the pedestrian had the right-of-way.
3. In less than one-fifth of the pedestrian-related collisions (18.3%), the on-scene police officer described the primary collision factor as a pedestrian violation, such as walking against signals or outside of marked crosswalks.
4. Only three pedestrian-related collisions were the result of unsafe motorist speeds and only one was the result of an improper turning movement by a motorist.
The analysis was produced using data from the California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS). This data includes only collisions reported to the CHP and local police agencies, and that resulted in documented injuries or complaints of pain. As such, these numbers likely underestimate the total number of pedestrian-related collisions that have occurred in Novato, particularly those that caused only minor injuries.
Figure 3-3: Pedestrian-related Collisions, 2008-2012
3.4.3 Collision Reduction Goal

Between 2008 and 2012, 144 collisions occurred in Novato involving either a bicyclist or a pedestrian, and four of those collisions resulted in fatalities. The City of Novato has established a goal to reduce the bicycle and pedestrian collision rate by 50 percent in five years. Further, to follow the Vision Zero Initiative, Novato hopes to reduce the number of bicyclist and pedestrian fatalities on the city's roadways to zero through supporting policies, programs, and design that have been proven to reduce bicycle- and pedestrian-related collisions.

The Vision Zero Initiative began in Sweden with the idea that the primary responsibility for traffic safety is not on the road users themselves, as is often the case, but on the design of the roadway. Since initiation in 1997, the number of fatalities on Sweden's roadways has fallen from 541 to 314 in 2011 while the traffic volume has increased significantly. In 2014, New York City was the first city in the United States to adopt this initiative and soon San Francisco and Boston followed suit.

3.5 Design Considerations

The City of Novato has an extensive bicycle and pedestrian network requiring ongoing maintenance and rehabilitation in order to meet the growing needs of its residents. However, the City contains many roads that were built to primarily serve the automobile, and thus do not provide a high level of bicycle and pedestrian infrastructure. Many of the comments received from the public identified issues at commercial centers or other destinations such as schools and parks that are visited on a daily basis. These areas require bicycle and pedestrian amenities to encourage active transportation and to create a safe, inviting environment.

3.5.1 Accessibility Design Standards

The Americans with Disabilities Act (ADA) was signed into law in 1990 to protect the rights of people with disabilities. ADA protects the right to access public services and places of public accommodation, including transit. Compliance with ADA does not solely benefit those with mobility impairments; continuous and level walkways, audible countdown signals, and sidewalk transitions (i.e., curb ramps) provide safety and mobility for all users, including children and families with strollers, and bicycle riding where appropriate. When evaluating whether a walkway is ADA-compliant, cities consult guidelines such as the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Public Rights-of-Way Accessibility Guidelines (PROWAG).
These guidelines offer specific guidance addressing the following:

- **Pedestrian through zone**: An area of the sidewalk reserved for pedestrian travel, at least 36 inches wide with periodic passing zones, and preferably 6-10 feet wide where feasible.

- **Cross-slope**: The slope that is perpendicular to the direction of travel, for which the maximum is two percent for pedestrian facilities.

- **Running slope**: The slope that is parallel to the direction of travel. Acceptable running slope depends greatly on the site conditions.

- **Obstructions**: Any landscaping, utility pole, or other protruding or vertical object that obstructs the pedestrian through zone.

- **Gaps, grates, and other openings**: Any gap in the pedestrian through zone wider than one-half inch may catch wheelchair castings, canes, crutches, inline skate wheels, and bicycle wheels.

- **Accessible signals**: Traffic signals that alert pedestrians through multiple media (sound, vision, tactile).

### 3.5.2 Traffic calming and speed limits

Vehicular speeds have significant impacts on the actual and perceived safety of the bicycle and pedestrian environment because of the likelihood of injury resulting from a crash (Figure 3-4).

#### Figure 3-4: Impact of Motor Vehicle Speed in Pedestrian Injury Rate

Traditional traffic calming measures, such as bulb-outs and traffic circles on neighborhood streets, are effective ways to improve safety and the sense of “sharedness” within the right-of-way. With recent California legislation, cities and towns are now also able to protect the most vulnerable road users by implementing strict speed limits around schools – without the need for an engineering and traffic study. For example, San Francisco has designated 15 miles per hour speed limit zones within 500 feet of all its elementary schools.
4 Bicycle Element

4.1 Existing Conditions

The bicycle map which accompanies this plan designates Novato’s bicycle routes and those in adjacent unincorporated areas by Class I, II, or III in accordance with Chapter 1000 of the California Department of Transportation, Highway Design Manual – Bikeway Planning and Design. Class I Bikeways – Shared-use Paths serve the exclusive use of bicycles and pedestrians. Class II Bikeways – Bicycle Lanes serve the preferential use of bicycles on marked lanes on paved streets. Class III Bikeways – Bicycle Routes serve bicycles on streets connecting Class I or Class II bikeways. Protected bicycle lanes, which have recently been officially permitted in California, are referred to in this plan as Class IV Bikeways – Protected Bicycle Lanes. This is a working title and subject to change as Caltrans and other agencies develop more detailed guidelines and standards regarding protected bicycle lanes.

- **Class I Bikeway.** Typically called a shared-use path, a Class I Bikeway provides bicycle travel on a paved right-of-way completely separated from any street or highway. It is usually shared with pedestrians and other active transportation users.

- **Class II Bikeway.** Often referred to as a bicycle lane, a Class II Bikeway provides a striped and stenciled lane for one-way bicycle travel on a street or highway.

- **Class III Bikeway.** Generally referred to as a bicycle route, a Class III Bikeway provides for shared use with motor vehicle traffic and is identified only by signing and/or pavement markings. A subset of this type of bikeway is a Bicycle Boulevard, which is a local street that has been optimized for bicycle travel by reducing motor vehicle speeds and volumes and by improving arterial crossings and operating speeds for bicyclists.

- **Class IV Bikeway.** Often referred to as protected bicycle lanes, cycle tracks, or green lanes, Class IV bikeways are located within a street or highway right-of-way, provide a designated area for one-way or two-way bicycle travel, and offer physical protection from adjacent motor vehicle traffic using barriers, bollards, curbing, parked cars, posts, planters, or other vertical elements.
It is important to note that bicycles are permitted on all roads in the State of California and in Novato (with the exception of designated freeways). As such, Novato's entire street network is effectively the city's bicycle network, regardless of whether or not a bikeway stripe, stencil, or sign is present on a given street. The designation of certain roads as Class II, III or IV bicycle facilities is not intended to imply that these are the only roadways intended for bicycle use, or that bicyclists should not be riding on other streets. Rather, the designation of a network of Class II, III and IV on-street bikeways recognizes that certain roadways are optimal bicycle routes, for reasons such as directness or access to significant destinations, and allows the City of Novato to then focus resources on building out this primary network. The city's existing network of designated bikeways is shown in Table 4-1. Specific facility segments are discussed in more detail below. Novato has a total of 36.18 miles of bikeways.

Table 4-1: Existing Bikeway Mileage by Type

<table>
<thead>
<tr>
<th>Class</th>
<th>Bikeway Type</th>
<th>Total Mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Shared-use Path</td>
<td>5.47</td>
</tr>
<tr>
<td>II</td>
<td>Bicycle Lanes</td>
<td>24.06</td>
</tr>
<tr>
<td>III</td>
<td>Bicycle Routes</td>
<td>3.65</td>
</tr>
<tr>
<td>IV</td>
<td>Protected Bicycle Lanes</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>Total Bikeways</td>
<td>33.18</td>
</tr>
<tr>
<td></td>
<td>Total Roadways (centerline miles)</td>
<td>151.8</td>
</tr>
<tr>
<td></td>
<td>Bikeway to Roadway Ratio</td>
<td>1 : 4.58</td>
</tr>
</tbody>
</table>
Figure 4-1: Existing and Previously Proposed Bikeway Network
4.1.1 Existing Class I Bikeways: Multi-Use Paths

There are a total of approximately 5.5 miles of Class I Bikeways throughout the City of Novato. Table 4-2 shows the trails and shared-use paths that are classified as Class I and Figure 4-2 gives the length of each Class I segment.

Table 4-2: Existing Class I Bikeways – Shared-use Paths

<table>
<thead>
<tr>
<th>Route</th>
<th>Begin</th>
<th>End</th>
<th>Class</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arroyo Avichi Creek Path</td>
<td>Hill Road</td>
<td>South Novato Boulevard</td>
<td>I</td>
<td>0.01</td>
</tr>
<tr>
<td>Creekside Fire Road Connector</td>
<td>Simmons Ln</td>
<td>Butterfield Drive</td>
<td>I</td>
<td>0.25</td>
</tr>
<tr>
<td>Enfrente Road Connector</td>
<td>Enfrente Road</td>
<td>Redwood Boulevard</td>
<td>I</td>
<td>0.66</td>
</tr>
<tr>
<td>Novato Boulevard Sidepath</td>
<td>Sutro Avenue</td>
<td>Eucalyptus Avenue</td>
<td>I</td>
<td>0.43</td>
</tr>
<tr>
<td>Pacheco Hill Path</td>
<td>Nave Drive/ Alameda del Prado Intersection</td>
<td>Southern City Limits</td>
<td>I</td>
<td>0.47</td>
</tr>
<tr>
<td>Redwood Boulevard Connector</td>
<td>Birchwood Drive</td>
<td>Sequoia Glen Lane</td>
<td>I</td>
<td>0.08</td>
</tr>
<tr>
<td>Rowland Boulevard Sidepath</td>
<td>US 101</td>
<td>Vintage Way</td>
<td>I</td>
<td>0.20</td>
</tr>
<tr>
<td>SMART Path</td>
<td>Alice Street</td>
<td>Rowland Way</td>
<td>I</td>
<td>0.56</td>
</tr>
<tr>
<td>SMART Path</td>
<td>State Route 37</td>
<td>Frosty Lane</td>
<td>I</td>
<td>0.65</td>
</tr>
<tr>
<td>Somerset Drive Connector</td>
<td>Hampshire Way</td>
<td>7th Street</td>
<td>I</td>
<td>0.14</td>
</tr>
<tr>
<td>South Novato Boulevard</td>
<td>Rowland Boulevard</td>
<td>Gateway Court</td>
<td>I</td>
<td>1.24</td>
</tr>
<tr>
<td>Vineyard Road Sidepath</td>
<td>Sutro Avenue</td>
<td>Vivian Court</td>
<td>I</td>
<td>0.13</td>
</tr>
<tr>
<td>West Kelly Drive</td>
<td>Main Gate Road</td>
<td>Bolling Drive</td>
<td>I</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Total Mileage 5.47
Figure 4-2: Existing and Previously Proposed Class I Bikeways – Shared-Use Paths
4.1.2 Existing Class II Bikeways: Bicycle Lanes

The majority of Novato’s bikeway system is comprised of Class II Bikeways (Bicycle Lanes). Most of the city's streets are oriented on a northwest to southeast axis, with the bikeway network aligned in a similar manner. The primary north-south bikeway corridor is along Novato Boulevard between San Marin Drive to just east of Redwood Boulevard. Primary east-west bikeways are provided along San Marin Drive, Atherton Avenue, Olive Avenue, Rowland Boulevard, Ignacio Boulevard, Bel Marin Keys Boulevard and Hamilton Parkway. Figure 4-3 below shows Novato's Class II Bikeway network. The bikeway details are listed in Table 4-3.

Table 4-3: Existing Class II Bikeways – Bicycle Lanes

<table>
<thead>
<tr>
<th>Route</th>
<th>Begin</th>
<th>End</th>
<th>Class</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda Del Prado</td>
<td>100 feet north of Posada Del Sol</td>
<td>Clay Court</td>
<td>II</td>
<td>0.97</td>
</tr>
<tr>
<td>Alameda Del Prado</td>
<td>Ignacio Boulevard</td>
<td>Alameda de la Loma</td>
<td>II</td>
<td>0.07</td>
</tr>
<tr>
<td>Arthur Street</td>
<td>Indian Valley Road</td>
<td>Taft Court</td>
<td>II</td>
<td>0.09</td>
</tr>
<tr>
<td>Bel Marin Keys Boulevard</td>
<td>Highway 101</td>
<td>Eastern City Limits</td>
<td>II</td>
<td>0.83</td>
</tr>
<tr>
<td>Diablo Avenue</td>
<td>Center Road</td>
<td>Novato Boulevard</td>
<td>II</td>
<td>0.23</td>
</tr>
<tr>
<td>Enfrente Road</td>
<td>Entrada Drive</td>
<td>Ignacio Boulevard</td>
<td>II</td>
<td>0.28</td>
</tr>
<tr>
<td>Hamilton Parkway</td>
<td>Nave Drive</td>
<td>San Pablo Avenue</td>
<td>II</td>
<td>1.21</td>
</tr>
<tr>
<td>Hangar Avenue</td>
<td>Palm Drive</td>
<td>Stern Drive</td>
<td>II</td>
<td>0.70</td>
</tr>
<tr>
<td>Hill Road</td>
<td>Diablo Avenue</td>
<td>Indian Valley Road</td>
<td>II</td>
<td>0.10</td>
</tr>
<tr>
<td>Ignacio Boulevard</td>
<td>Indian Hills Drive</td>
<td>Nave Drive</td>
<td>II</td>
<td>2.23</td>
</tr>
<tr>
<td>Indian Valley Road</td>
<td>Hill Road</td>
<td>Arthur Street</td>
<td>II</td>
<td>0.30</td>
</tr>
<tr>
<td>Lamont Avenue</td>
<td>Redwood Boulevard</td>
<td>Reichert Avenue</td>
<td>II</td>
<td>0.17</td>
</tr>
<tr>
<td>Nave Drive</td>
<td>Ignacio Boulevard</td>
<td>US 101 N Ramp near Nave Drive/US 101 Overpass</td>
<td>II</td>
<td>1.4</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>Western City Limits</td>
<td>Gateway Court</td>
<td>II</td>
<td>5.16</td>
</tr>
<tr>
<td>Olive Avenue</td>
<td>Railroad Avenue</td>
<td>Samrose Court</td>
<td>II</td>
<td>1.14</td>
</tr>
<tr>
<td>Railroad Avenue</td>
<td>Olive Avenue</td>
<td>Grant Avenue</td>
<td>II</td>
<td>0.27</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>San Marin Drive</td>
<td>Rowland Boulevard</td>
<td>II</td>
<td>2.12</td>
</tr>
<tr>
<td>Rowland Boulevard</td>
<td>Novato Boulevard</td>
<td>US 101</td>
<td>II</td>
<td>0.44</td>
</tr>
<tr>
<td>Rowland Boulevard</td>
<td>North Vintage Way</td>
<td>South Vintage Way</td>
<td>II</td>
<td>0.61</td>
</tr>
<tr>
<td>Route</td>
<td>Begin</td>
<td>End</td>
<td>Class</td>
<td>Length</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------</td>
<td>------------------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>San Marin Drive</td>
<td>Simmons Lane</td>
<td>Redwood Boulevard</td>
<td>II</td>
<td>1.07</td>
</tr>
<tr>
<td>San Pablo Avenue</td>
<td>Hamilton Parkway</td>
<td>Hangar Avenue</td>
<td>II</td>
<td>0.09</td>
</tr>
<tr>
<td>Simmons Lane</td>
<td>San Marin Drive</td>
<td>Pioneer Court</td>
<td>II</td>
<td>0.66</td>
</tr>
<tr>
<td>State Access Road</td>
<td>Nave Drive</td>
<td>C Street</td>
<td>II</td>
<td>0.25</td>
</tr>
<tr>
<td>Sunset Parkway</td>
<td>Shon Drive</td>
<td>Ignacio Boulevard</td>
<td>II</td>
<td>0.37</td>
</tr>
<tr>
<td>Sutro Avenue</td>
<td>Novato Boulevard</td>
<td>Center Road</td>
<td>II</td>
<td>0.41</td>
</tr>
<tr>
<td>Tamalpais Avenue/ 7th Street</td>
<td>Grant Avenue</td>
<td>Center Road</td>
<td>II</td>
<td>0.47</td>
</tr>
<tr>
<td>Vineyard Road</td>
<td>Eucalyptus Avenue</td>
<td>Calico Court</td>
<td>II</td>
<td>0.36</td>
</tr>
<tr>
<td>Vintage Way</td>
<td>Rowland Boulevard</td>
<td>Rowland Boulevard</td>
<td>II</td>
<td>0.77</td>
</tr>
<tr>
<td>Virginia Avenue</td>
<td>Simmons Lane</td>
<td>Grant Avenue</td>
<td>II</td>
<td>0.41</td>
</tr>
<tr>
<td>Wilson Avenue</td>
<td>Novato Boulevard</td>
<td>Mill Road</td>
<td>II</td>
<td>0.88</td>
</tr>
<tr>
<td><strong>Total Mileage</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>24.06</strong></td>
</tr>
</tbody>
</table>
Figure 4-3: Existing and Previously Proposed Class II Bikeways – Bicycle Lanes
4.1.3 Existing Class III Bikeways: Bicycle Routes

There are a total of 3.7 miles of Class III Bikeways in the City of Novato, a much lower number compared to Class II. Figure 4-4 shows the Class III Bikeways in the city. The bikeway details are listed in Table 4-4.

Table 4-4: Existing Class III Bikeways – Bicycle Routes

<table>
<thead>
<tr>
<th>Route</th>
<th>Begin</th>
<th>End</th>
<th>Class</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolling Drive</td>
<td>Nave Drive</td>
<td>Captain Nurse Circle</td>
<td>III</td>
<td>0.09</td>
</tr>
<tr>
<td>Entrada Drive</td>
<td>Enfrente Road</td>
<td>End</td>
<td>III</td>
<td>0.20</td>
</tr>
<tr>
<td>Hamilton Drive</td>
<td>Frosty Lane</td>
<td>Bel Marin Keys Boulevard</td>
<td>III</td>
<td>0.19</td>
</tr>
<tr>
<td>Main Gate Road</td>
<td>Nave Drive</td>
<td>Palm Drive</td>
<td>III</td>
<td>0.40</td>
</tr>
<tr>
<td>Nave Drive</td>
<td>Alameda Del Prado</td>
<td>US 101 Off-ramp</td>
<td>III</td>
<td>0.14</td>
</tr>
<tr>
<td>Palm Drive</td>
<td>Main Gate Road</td>
<td>Hamilton Parkway</td>
<td>III</td>
<td>0.37</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>Rowland Boulevard</td>
<td>Palmer Drive</td>
<td>III</td>
<td>1.57</td>
</tr>
<tr>
<td>Rowland Way</td>
<td>Novato Creek</td>
<td>Vintage Way</td>
<td>III</td>
<td>0.38</td>
</tr>
<tr>
<td>Simmons Lane</td>
<td>Partridge Drive</td>
<td>San Marin Drive</td>
<td>III</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Total Mileage    | 3.65
Figure 4-4: Existing and Previously Proposed Class III Bikeways – Bicycle Routes
4.1.4 Existing Bikeway Signage

Marin County is implementing a countywide bicycle route signage program. The City is committed to developing a link in the north/south bikeway route through Marin County (Route 5). The goal of the project is to encourage commuting by bicycle through Marin and to make recreational biking more attractive to the public. The bikeway route network can be viewed at http://www.marinbike.org/Map.

The County of Marin received $189,000 in grant funding for the program. Improved wayfinding will help cyclists identify destinations at key intersections and navigate the bicycle network more easily. The Marin Public Works Directors Association selected a uniform sign for the County, including a logo of Mount Tamalpais in the background.

Figure 4-5: Marin County Bikeway Sign
4.1.5 Existing Bicycle Support Facilities

Bicycle support facilities include bicycle parking racks, lockers, and changing facilities. Any facility that assists commuting or recreational cyclists to complete their journey is also considered a support facility.

The City of Novato included shower, bicycle racks, and bicycle storage in the design and construction of its Administrative Offices completed in 2013. BioMarin Pharmaceutical also has bicycle support facilities available at their Digital Drive campus. See Figure 4-6 for known bicycle parking map. Parks can also serve as bicycle support facilities. Novato has an extensive system of parks and open space areas. Most parks are equipped with water and restrooms, however not all parks have bicycle parking. Due to the gap in knowledge about existing bicycle parking, Section 4.7.1 recommends the creation of a bicycle parking inventory.

Bicycle lockers can be leased from Caltrans at three of the four Park-and-Ride lots in Novato. The park-and-ride lot at Rowland Boulevard and US 101 has six bike lockers and six bike racks available to bicyclists on a first-come first-served basis for riders who bring their own locks. The park-and-ride lot at Atherton Avenue and US 101 has two lockers available; the park-and-ride lot on Alameda Del Prado and US 101 has four bike lockers available; and the park-and-ride lot on Atherton Avenue and State Route 37 does not have any bike lockers.

The City of Novato has adopted official design standards for sidewalk bicycle parking and an ordinance requiring showers, lockers and change facilities in newly developed employment centers. More details on these standards and requirements are provided in Appendix C.
Figure 4-6: Known Bicycle Parking
4.2 Multi-Modal Connections

Providing bicycle access to public transit allows bicyclists to extend the distance they are able to travel. Novato residents have access to scheduled transit service provided by Marin Transit and Golden Gate Transit, which provides service to San Francisco, southern and central Marin, Marin County ferry terminals and north to Sonoma County. Most Golden Gate Transit bus stops within the City of Novato have bicycle racks located at the stops. Up to three bicycles can fit on racks mounted to the front of all Golden Gate Transit buses less than 60 feet long. The Marin County Transit District has included an element in their long-range transit plan to upgrade all bus-mounted front bicycle racks from two to three capacity fixtures, with many buses now accommodating three bikes. Additionally, all buses longer than 60 feet are outfitted with racks that allow two bicycles to ride in the underfloor luggage area.

The following bus stops in Novato have bicycle racks that hold up to five bicycles:

- South Novato Boulevard at Diablo Avenue
- Novato Boulevard at Eucalyptus Avenue
- US 101 Southbound Ramp at Atherton Avenue
- US 101 Southbound Ramp at Rowland Boulevard
- US 101 Southbound Ramp at De Long Avenue
- US 101 Southbound Ramp at Alameda del Prado

The Sonoma Marin Area Rail Transit (SMART) has begun the construction of a rail line along an approximately 70-mile-long corridor spanning Marin County and Sonoma County from Cloverdale to Larkspur with service on its initial segment between Santa Rosa and San Rafael beginning in 2016. The system will have two stations in Novato and a parallel Class I multi-use path from its North Novato/Atherton Station continuing to the south to San Rafael which will improve bicycle and pedestrian access to the stations and along the rail corridor. The station locations are included in the bicycle facility maps in order to plan for future intermodal connections.
4.3 Traffic Signal Bicycle Detection

The City of Novato has no official policy regarding bicycle signal detection at traffic signals. The City’s current practice is to use the more sensitive Type D loop detectors, a form of in-the-pavement magnetic field detection device, as head loops at all new installations or as existing loop detectors are replaced during maintenance activities. Type D loop detectors are sensitive enough to detect both bicycles and automobiles without accidentally picking up vehicles in adjacent lanes. Unfortunately, Type D loop detectors are more expensive to install than other common detection devices and present some maintenance issues. At intersections with video detection systems, separate video detection zones for bicycles are created, particularly on side streets where bicycle routes intersect major streets that rest on the green phase (i.e. creating a rest on red condition for the bikeway user). This is less of an issue for bikeways on primary streets where the signals are programmed to rest in green, but separate video detection zones for bicycles are usually provided on these roads as well. In other areas where loops are utilized, special dipole or other sensitive loop designs are used where bikes in bike lanes would not be detected by the vehicle loop systems.

In 2011, the Marin County Department of Public Works installed ten video cameras or bicycle-specific sensors embedded in the pavement at major intersections in Novato that are frequently used by bicyclists. The upgrades cost $348,000 and were part of a larger $25-million active transportation pilot program in Marin County. Table 4-5 and Table 4-6 list the current locations for bicycle detection.
<table>
<thead>
<tr>
<th>Main Street</th>
<th>Side Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>De Long Avenue</td>
<td>Reichert Avenue</td>
</tr>
<tr>
<td>Grant Avenue</td>
<td>7th Street</td>
</tr>
<tr>
<td>Ignacio Boulevard</td>
<td>Palmer Drive</td>
</tr>
<tr>
<td>Main Gate Road</td>
<td>Randolph Drive</td>
</tr>
<tr>
<td>Nave Drive</td>
<td>Bolling Drive</td>
</tr>
<tr>
<td>Nave Drive</td>
<td>Main Gate Road</td>
</tr>
<tr>
<td>Nave Drive</td>
<td>North Hamilton Parkway</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>7th Street/Tamalpais Avenue</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>Diablo Avenue</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>Grant Avenue</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>Simmons Lane/Wilson Avenue</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>De Long Avenue/Diablo Avenue</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>Grant Avenue</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>Lamont Avenue</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>Landing Court/Novato Fire Station</td>
</tr>
<tr>
<td>South Novato Boulevard</td>
<td>Arthur Street</td>
</tr>
<tr>
<td>South Novato Boulevard</td>
<td>Center Road/Garden Court</td>
</tr>
<tr>
<td>South Novato Boulevard</td>
<td>Rowland Boulevard</td>
</tr>
<tr>
<td>South Novato Boulevard</td>
<td>Sunset Parkway</td>
</tr>
<tr>
<td>San Marin Drive</td>
<td>West Campus Drive</td>
</tr>
<tr>
<td>Vintage Way</td>
<td>Driveway #1</td>
</tr>
<tr>
<td>Vintage Way</td>
<td>Driveway #2</td>
</tr>
<tr>
<td>Nave Drive</td>
<td>Safeway Market Place Driveway</td>
</tr>
<tr>
<td>Bel Marin Keys Boulevard</td>
<td>Commercial Boulevard</td>
</tr>
<tr>
<td>Bel Marin Keys Boulevard</td>
<td>Digital Drive</td>
</tr>
<tr>
<td>Ignacio Boulevard</td>
<td>Alameda Del Prado</td>
</tr>
<tr>
<td>Rowland Boulevard</td>
<td>Redwood Boulevard</td>
</tr>
<tr>
<td>Rowland Boulevard</td>
<td>Rowland Way</td>
</tr>
<tr>
<td>Rowland Boulevard</td>
<td>Vintage Way</td>
</tr>
<tr>
<td>San Marin Drive</td>
<td>East Campus Drive</td>
</tr>
<tr>
<td>San Marin Drive</td>
<td>Redwood Boulevard</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>Olive Avenue</td>
</tr>
</tbody>
</table>
Table 4-6: Other Traffic Control Devices

<table>
<thead>
<tr>
<th>Traffic Control Device</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radar Feedback Sign (2)</td>
<td>Olive Avenue WB/EB adjacent to school</td>
</tr>
<tr>
<td>Radar Feedback Sign (2)</td>
<td>Center Road WB/EB adjacent to school</td>
</tr>
<tr>
<td>Radar Feedback Sign (1)</td>
<td>Main Gate Road WB adjacent to school</td>
</tr>
<tr>
<td>Pedestrian Activated Flashing Beacons</td>
<td>46 Galli Drive (adjacent to BioMarin)</td>
</tr>
</tbody>
</table>

4.4 Recent Expenditures on Bikeways

Table 4-7 shows a summary of bicycle facility projects constructed since the 2007 bicycle plan was adopted.

Table 4-7: Past Expenditures on Bikeways 2007-2014

<table>
<thead>
<tr>
<th>Segment</th>
<th>Begin</th>
<th>End</th>
<th>Class</th>
<th>Length</th>
<th>Cost Estimate</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vineyard Road Sidepath</td>
<td>Vivian Court</td>
<td>Sutro Avenue</td>
<td>I</td>
<td>0.13</td>
<td>$84,200</td>
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</tr>
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<td>Enfrente Road Connector</td>
<td>Enfrente Road</td>
<td>South Novato Boulevard</td>
<td>I</td>
<td>0.66</td>
<td>$2,360,00</td>
<td>Completed</td>
</tr>
<tr>
<td>Hill Road</td>
<td>Diablo Avenue</td>
<td>Indian Valley Road</td>
<td>II</td>
<td>0.12</td>
<td>$32,000</td>
<td>Completed</td>
</tr>
<tr>
<td>Indian Valley Road</td>
<td>Hill Road</td>
<td>Arthur Street</td>
<td>II</td>
<td>0.25</td>
<td>$218,000</td>
<td>Completed</td>
</tr>
</tbody>
</table>

4.5 Bicycle Safety Education Programs

4.5.1 Parks and Recreation

The Novato Parks and Recreation Department holds various summer week-long bicycle camps for children ages 8 to 12 years. These camps emphasize bicycle safety and participants travel the bikeways from schools to parks for instruction and fun.
4.5.2 Novato Police/Public Safety

The Novato Police Department attends selected bicycle events and provides educational material to attendees about bicycle laws and safety.

4.5.3 School Bike Routes

One goal of the Novato Bicycle / Pedestrian Plan is to install bicycle lanes on streets near schools that currently have (or are projected to have) high levels of bicycle use. These streets are main routes that are currently used or could be used by students to commute to schools by bicycle and would supplement the local safe routes to schools plans being developed at each school. The proposed bikeway network described in this plan incorporates this school routes concept. Novato Unified School District has 16 schools of which eight are elementary (K-5), two are middle (6-8), three are high schools (9-12), and three are independent or alternative learning environments. There are also a growing number of charter schools in Novato, which are also considered for school bicycle routes. A number of these schools participate in the Transportation Authority of Marin’s (TAM) Safe Routes to Schools programs, detailed in the following section.

4.5.4 School Safety Initiatives

In addition to the TAM Safe Routes to Schools programs, a number of different school safety initiatives have been undertaken in Novato. Various schools have sponsored bicycle rodeos to educate the students on bicycle safety. Since 1993, the Novato Police Department has sponsored bicycle rodeos emphasizing proper procedures at intersections, hand signaling, riding in traffic, and the importance of wearing a helmet.

The school Parent Teacher Associations have strongly advocated for bicycle safety including endorsing the California helmet law, which went into effect January 1994. As a result, all school children are now required to wear a helmet when riding a bicycle to school. A bicycle safety program was implemented at all elementary schools in the fall of 2004. This program involves community service officers, traffic officers, school personnel and parents in educating students about safe bicycling.

4.5.5 Safe Routes to Schools

The countywide safe routes to schools programs began in 2000 as an effort to reduce congestion and encourage healthy exercise and transportation habits among children and school staff in Marin County. The program has since expanded to its current level, with 10 Novato schools and over 5,300 students participating. A 2011 evaluation of the TAM Safe Routes to Schools programs from Spring 2008 to Spring 2011 showed an increase in the number of students using an active mode (bicycling, walking, skating, etc.) to travel to school (25 percent in 2008 to 30 percent in 2011).

The program consists of five key components: education, engineering, encouragement, enforcement, and evaluation, which are described below:
• **Education** – Classroom lessons teach children the skills necessary to navigate through busy streets and show them how to be active participants in the program. Table 4-8 shows education programs completed in Novato Schools.

• **Engineering** – The Program’s licensed traffic engineer works with schools and the City in developing a plan to provide a safer environment for children to walk and bike to school. The focus is on creating physical improvements to the infrastructure surrounding the school, reducing speeds and establishing safer crosswalks and pathways.

• **Encouragement** – Events, contests and promotional materials are incentives that encourage children and parents to try walking and biking. Table 4-8 shows encouragement programs completed in Novato Schools.

• **Enforcement** – Police officers, crossing guards and law enforcement officials participate throughout the Safe Routes process to encourage safe travel through the community. Targeted enforcement of speed limits and other traffic laws around schools make the trip to school more predictable for students. This plan also includes enforcement enhancements and outreach to drivers through driver safety campaigns.

• **Evaluation** – Program participation is regularly monitored to determine the growth in student and parent participation.

As detailed in Table 4-8, seven elementary schools and one middle school have participated in the project. A Safe Routes to Schools Task Force has been formed for the Novato Unified School District to create Safe Routes to Schools Travel Plans, which include engineering recommendations, enforcement, driver education programs and encouragement programs. This plan includes proposals for growing participation in the Safe Routes to Schools Program in Novato.

### 4.5.6 Other Safety Programs

“Basic Street Skills” classes are provided free of charge by the Marin County Bicycle Coalition. Classes provide information on how to avoid collisions and citations, how to safely ride a bicycle, and improve visibility and the legal rights of bicyclists. Cyclists who have received a bicycle violation may attend this class to reduce their fine.

The Marin County Bicycle Coalition also provides a “Share the Road” presentation for the public. The presentation is available by request, and includes information on the rights and responsibilities of cyclists and drivers and focuses on ways each group can behave courteously to avoid collisions.
### Table 4-8: Safe Routes to School Education and Encouragement Programs

<table>
<thead>
<tr>
<th>Participants</th>
<th>Education</th>
<th>Encouragement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades</td>
<td>Stop, Look &amp; Listen</td>
</tr>
<tr>
<td>Schools</td>
<td>(2013-14)</td>
<td></td>
</tr>
<tr>
<td>Novato</td>
<td>K-5</td>
<td>X</td>
</tr>
<tr>
<td>Hamilton</td>
<td>K-5</td>
<td></td>
</tr>
<tr>
<td>Lu Sutton</td>
<td>K-5</td>
<td></td>
</tr>
<tr>
<td>Lynwood</td>
<td>K-5</td>
<td></td>
</tr>
<tr>
<td>Pleasant Valley</td>
<td>K-5</td>
<td></td>
</tr>
<tr>
<td>Rancho</td>
<td>K-5</td>
<td></td>
</tr>
<tr>
<td>Hill Middle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Ramon</td>
<td>K-5</td>
<td></td>
</tr>
<tr>
<td>Olive</td>
<td>K-5</td>
<td></td>
</tr>
<tr>
<td>Sinaloa Middle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

X - Previously Completed
4.6 Proposed Bikeway Network

As shown in the preceding section, Novato’s current bikeway network provides some opportunities for safe travel both on-street and off-street. However, significant gaps remain in the system, and closing these gaps is critical to providing good connectivity for bicyclists riding both within the City of Novato and attempting to travel to neighboring communities. The Class I, Class II, and Class III projects were developed through input gathered at two public workshops, through an online survey, and from the B/PAC.

A summary of potential costs for the recommended bikeway network is presented in Table 4-9. The cost of the recommended projects is estimated to be about $15,809,000 for Class I Bikeways, $1,983,000 for Class II Bikeways, $185,000 for Class III Bikeways, and $1,447,000 for other bicycle-related projects. The combined cost for all bikeways is approximately $19,424,000. It is important to note the three following assumptions about the cost estimates. First, all cost estimates are conceptual, since there is no feasibility or preliminary design completed, and second, the design and administration costs included in these estimates may not be sufficient to fund environmental clearance studies. Finally, costs estimates are a moving target over time as construction costs escalate quickly, and as such, the costs presented should be considered as rough order of magnitude only.

All the projects are recommended to be implemented over the next two to twenty years, or as funding are available. The more expensive projects may take longer to implement. In addition, many funding sources are highly competitive, and therefore impossible to determine exactly which projects will be funded by which funding sources. Timing of projects is also something difficult to pinpoint exactly, due to the dependence on competitive funding sources and, timing of roadway and development, and the overall economy.

Table 4-9: Recommended Bikeway Project Cost Estimates - Summary

<table>
<thead>
<tr>
<th>Type</th>
<th>Length</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
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</tr>
<tr>
<td>Class II</td>
<td>8.79</td>
<td>$1,983,280</td>
</tr>
<tr>
<td>Class III</td>
<td>7.41</td>
<td>$184,860</td>
</tr>
<tr>
<td>Other</td>
<td>N/A</td>
<td>$1,447,000</td>
</tr>
<tr>
<td>Total</td>
<td>23.02</td>
<td>$17,782,310</td>
</tr>
</tbody>
</table>
4.6.1 Proposed Class I Bikeways: Shared-Use Paths

Class I Bikeways recommended in the plan focus on filling critical gaps in the off-street network and providing access to key destinations. For example, maintenance to the Novato Boulevard Sidepath was identified by members of the public as a high priority so that bicyclists and pedestrians could have an east-west link from Downtown Novato to Miwok Park, O’Hair Park, Stafford Lake and San Marin High School. The creation of a new path from Hill Road to the proposed SMART Path would provide a valuable US 101 undercrossing midway between the De Long Avenue overcrossing and the Rowland Boulevard overcrossing. Located on an existing rail corridor, the proposed Class I facility parallel to Highway 37 (El Camino Real), would connect to existing segments of the SMART Path to existing bicycle facilities on Atherton Avenue. Details of the proposed segments can be found in Table 4-10.
### Table 4-10: Proposed Class I Bikeways: Shared-use Paths

<table>
<thead>
<tr>
<th>Route</th>
<th>Begin</th>
<th>End</th>
<th>Class</th>
<th>Length</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay Trail</td>
<td>East of Casa Grande</td>
<td>Southern tip of Hamilton Wetlands Preserve</td>
<td>I</td>
<td>0.57</td>
<td>$855,000</td>
</tr>
<tr>
<td>Knolls Trail</td>
<td>Simmons Lane</td>
<td>Butterfield Drive</td>
<td>I</td>
<td>0.25</td>
<td>$855,000</td>
</tr>
<tr>
<td>Nave Drive Sidepath</td>
<td>Main Gate Road</td>
<td>Bolling Drive</td>
<td>I</td>
<td>0.35</td>
<td>$450,000</td>
</tr>
<tr>
<td>Novato Boulevard Sidepath</td>
<td>Western City Limits</td>
<td>Sutro Avenue/San Marin Drive</td>
<td>I</td>
<td>0.52</td>
<td>$437,970</td>
</tr>
<tr>
<td>SMART Path</td>
<td>Franklin Avenue</td>
<td>Grant Avenue</td>
<td>I</td>
<td>0.35</td>
<td>$340,000</td>
</tr>
<tr>
<td>SMART Path</td>
<td>Hanna Ranch road</td>
<td>South End of Rowland Boulevard</td>
<td>I</td>
<td>0.39</td>
<td>$1,600,000</td>
</tr>
<tr>
<td>SMART Path</td>
<td>Hamilton Parkway</td>
<td>Bel Marin Keys Boulevard</td>
<td>I</td>
<td>0.47</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>SMART Path</td>
<td>Olive Avenue</td>
<td>San Marin Drive</td>
<td>I</td>
<td>0.52</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>SMART Path</td>
<td>Main Gate Road</td>
<td>Hamilton Parkway</td>
<td>I</td>
<td>0.28</td>
<td>$240,000</td>
</tr>
<tr>
<td>SMART Path</td>
<td>Rush Creek Place</td>
<td>Rush Landing Road</td>
<td>I</td>
<td>0.28</td>
<td>$421,200</td>
</tr>
<tr>
<td>SMART Path</td>
<td>South End of Rowland Boulevard</td>
<td>North Side of Novato Creek</td>
<td>I</td>
<td>0.73</td>
<td>$2,600,000</td>
</tr>
<tr>
<td>State Route 37</td>
<td>SMART Path</td>
<td>Atherton Avenue</td>
<td>I</td>
<td>2.58</td>
<td>$3,870,000</td>
</tr>
<tr>
<td><strong>Total Class I</strong></td>
<td></td>
<td></td>
<td></td>
<td>7.29</td>
<td><strong>$14,167,170</strong></td>
</tr>
</tbody>
</table>
4.6.2 Proposed Class II Bikeways: Bicycle Lanes

Novato’s current bikeway system is composed primarily of Class II bicycle lanes. Similar to the proposed Class I facilities, many of the proposed Class II projects are gap closures, including bicycle lanes on Hanna Ranch Access Road, Lamont Avenue, Sunset Parkway and Vineyard Road. This project will require the coordination of new development and the acquisition of new public right-of-way. To address demand for east-west bicycle facilities during the Novato Boulevard project implementation, Class II facilities are proposed along Grant Avenue between existing bicycle lanes on Virginia Avenue to 7th Street. Class II facilities along the Atherton – US 101 overcrossing and along C Street will provide improved bicycle access to the planned SMART stations. This project will also require the coordination of new development and the acquisition of new right-of-way. Some of the recommended Class II projects could be converted into Class IV facilities with vertical protection if necessary. Details of the bicycle lane proposals can be found in Table 4-11.
### Table 4-11: Proposed Class II Bikeways: Bicycle Lanes

<table>
<thead>
<tr>
<th>Route</th>
<th>Begin</th>
<th>End</th>
<th>Class</th>
<th>Length</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atherton Avenue*</td>
<td>Redwood Boulevard</td>
<td>Bay Tree Hollow</td>
<td>II</td>
<td>0.32</td>
<td>$529,500</td>
</tr>
<tr>
<td>C Street</td>
<td>State Access Road</td>
<td>Main Gate Road</td>
<td>II</td>
<td>0.26</td>
<td>$39,000</td>
</tr>
<tr>
<td>Franklin Avenue</td>
<td>Reichert Avenue</td>
<td>SMART Path</td>
<td>II</td>
<td>0.17</td>
<td>$455,000</td>
</tr>
<tr>
<td>Grant Avenue</td>
<td>Novato Boulevard</td>
<td>7th Street</td>
<td>II</td>
<td>0.33</td>
<td>$2,730</td>
</tr>
<tr>
<td>Hanna Ranch Access Road</td>
<td>State Route 37</td>
<td>Rowland Way</td>
<td>II</td>
<td>0.62</td>
<td>$16,640</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>Grant Avenue</td>
<td>Diablo Avenue</td>
<td>II</td>
<td>0.66</td>
<td>$99,000</td>
</tr>
<tr>
<td>Olive Avenue</td>
<td>Redwood Boulevard</td>
<td>Railroad Avenue</td>
<td>II</td>
<td>0.16</td>
<td>$24,000</td>
</tr>
<tr>
<td>Olive Avenue</td>
<td>Samrose Drive</td>
<td>Eastern City Limits</td>
<td>II</td>
<td>0.28</td>
<td>$42,000</td>
</tr>
<tr>
<td>Lamont Avenue</td>
<td>Reichert Avenue</td>
<td>SMART Path</td>
<td>II</td>
<td>0.18</td>
<td>$27,000</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>San Marin Drive</td>
<td>Buck Center Drive</td>
<td>II</td>
<td>0.75</td>
<td>$20,150</td>
</tr>
<tr>
<td>San Marin Drive</td>
<td>Novato Boulevard</td>
<td>Simmons Lane</td>
<td>II</td>
<td>2.79</td>
<td>$418,500</td>
</tr>
<tr>
<td>State Access Road</td>
<td>Lanham Drive</td>
<td>C Street</td>
<td>II</td>
<td>0.05</td>
<td>$7,500</td>
</tr>
<tr>
<td>Sunset Parkway</td>
<td>Cambridge Street</td>
<td>South Novato Boulevard</td>
<td>II</td>
<td>0.26</td>
<td>$39,000</td>
</tr>
<tr>
<td>Sunset Parkway (northbound)**</td>
<td>Shon Drive</td>
<td>Cambridge Street Pathway</td>
<td>II</td>
<td>0.44</td>
<td>$66,000</td>
</tr>
<tr>
<td>Simmons Lane</td>
<td>Novato Creek</td>
<td>Novato Boulevard</td>
<td>II</td>
<td>0.21</td>
<td>$31,500</td>
</tr>
<tr>
<td>Sutro Avenue</td>
<td>Vineyard Road</td>
<td>Center Road</td>
<td>II</td>
<td>0.62</td>
<td>$93,000</td>
</tr>
<tr>
<td>Vineyard Road*</td>
<td>Sutro Avenue</td>
<td>Eucalyptus Avenue</td>
<td>II</td>
<td>0.44</td>
<td>$66,000</td>
</tr>
<tr>
<td>Vineyard Road</td>
<td>Williamson Court</td>
<td>Wilson Avenue</td>
<td>II</td>
<td>0.25</td>
<td>$6,760</td>
</tr>
<tr>
<td><strong>Total Class II</strong></td>
<td></td>
<td></td>
<td></td>
<td>8.79</td>
<td>$1,983,280</td>
</tr>
</tbody>
</table>

* Project cost split evenly between bicycle and pedestrian components (See page 69)

** Project modified from 2007 Novato Bicycle Plan
4.6.3 Proposed Class III Bikeways: Bicycle Routes

The planned SMART station near Atherton Avenue will increase the importance of the Armstrong Avenue, Cherry Street and Chase Street corridor for transit riders. Proposed Class III facilities are proposed along this corridor to connect the future transit station to existing bicycle facilities. To address demand for east-west bicycle facilities during the Novato Boulevard project implementation, Class III facilities are proposed along Center Road and Grant Avenue. These facilities will not change existing street parking. Bicycle facilities along Vineyard Road and Sunset Parkway would help connect residents to schools and parks by closing gaps in the existing bicycle network. Details of the proposed segments can be found in Table 4-12.
### Table 4-12: Proposed Class III Bikeways: Bicycle Routes

<table>
<thead>
<tr>
<th>Route</th>
<th>Begin</th>
<th>End</th>
<th>Class</th>
<th>Length</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armstrong Avenue</td>
<td>Atherton Avenue</td>
<td>Cherry Street</td>
<td>III</td>
<td>0.28</td>
<td>$7,000</td>
</tr>
<tr>
<td>Arthur Street**</td>
<td>Indian Valley Road</td>
<td>Novato Boulevard</td>
<td>III</td>
<td>0.58</td>
<td>$14,500</td>
</tr>
<tr>
<td>Butterfield Drive</td>
<td>Sundance Way</td>
<td>Knolls Trail</td>
<td>III</td>
<td>0.18</td>
<td>$4,500</td>
</tr>
<tr>
<td>Center Road</td>
<td>Sutro Avenue</td>
<td>Novato Boulevard</td>
<td>III</td>
<td>2.45</td>
<td>$61,250</td>
</tr>
<tr>
<td>Chase Street</td>
<td>Cherry Street</td>
<td>Olive Avenue</td>
<td>III</td>
<td>0.21</td>
<td>$5,250</td>
</tr>
<tr>
<td>Cherry Street</td>
<td>Armstrong Avenue</td>
<td>Chase Street</td>
<td>III</td>
<td>0.15</td>
<td>$3,750</td>
</tr>
<tr>
<td>Diablo Avenue</td>
<td>Center Road</td>
<td>Hill Road</td>
<td>III</td>
<td>0.24</td>
<td>$6,000</td>
</tr>
<tr>
<td>Entrada Commute Bike Connector*</td>
<td>Entrada Drive</td>
<td>Commuter Connection Pathway</td>
<td>III</td>
<td>0.20</td>
<td>$780</td>
</tr>
<tr>
<td>Grant Avenue</td>
<td>7th Street</td>
<td>Redwood Boulevard</td>
<td>III</td>
<td>0.49</td>
<td>$12,250</td>
</tr>
<tr>
<td>Hill Road</td>
<td>Tamalpais Avenue</td>
<td>Diablo Avenue</td>
<td>III</td>
<td>0.38</td>
<td>$9,500</td>
</tr>
<tr>
<td>Indian Valley Road**</td>
<td>Southern City Limits</td>
<td>Arthur Street</td>
<td>III</td>
<td>0.27</td>
<td>$6,750</td>
</tr>
<tr>
<td>Palmer Drive</td>
<td>Ignacio Boulevard</td>
<td>Redwood Boulevard</td>
<td>III</td>
<td>0.46</td>
<td>$11,500</td>
</tr>
<tr>
<td>Redwood Boulevard*</td>
<td>Palmer Drive</td>
<td>Enfrente Connector Pathway</td>
<td>III</td>
<td>0.36</td>
<td>$1,430</td>
</tr>
<tr>
<td>Sundance Way</td>
<td>Wood Hollow Drive</td>
<td>Butterfield Drive</td>
<td>III</td>
<td>0.14</td>
<td>$3,500</td>
</tr>
<tr>
<td>Sunset Parkway (southbound)**</td>
<td>Shon Drive</td>
<td>Cambridge Street Pathway</td>
<td>III</td>
<td>0.44</td>
<td>$11,000</td>
</tr>
<tr>
<td>Simmons Lane</td>
<td>San Marin Drive</td>
<td>Knolls Trail</td>
<td>III</td>
<td>0.33</td>
<td>$8,250</td>
</tr>
<tr>
<td>Tamalpais Avenue</td>
<td>Center Road</td>
<td>Hill Road</td>
<td>III</td>
<td>0.24</td>
<td>$6,400</td>
</tr>
<tr>
<td>Wood Hollow Drive</td>
<td>Redwood Boulevard</td>
<td>Sundance Way</td>
<td>III</td>
<td>0.45</td>
<td>$11,250</td>
</tr>
</tbody>
</table>
In addition to Class I, II, and Class II bicycle facilities, several other proposed projects will provide enhance bicycle and pedestrian access. These projects are described in Table 4-13.

Table 4-13: Other Proposed Projects

<table>
<thead>
<tr>
<th>Route</th>
<th>Begin</th>
<th>End</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commuter Bike Connection</td>
<td>Enfrente Road</td>
<td>Novato Boulevard</td>
<td>Lighting</td>
<td>$200,000</td>
</tr>
<tr>
<td>Ignacio Boulevard</td>
<td>Enfrente Road</td>
<td>SMART Path</td>
<td>Add green lane markings, vertical separation, and an access point to the proposed SMART Path</td>
<td>$150,000</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>Grant Avenue</td>
<td>Olive Avenue</td>
<td>Convert front-end angled parking to back-end angled parking</td>
<td>$40,000</td>
</tr>
<tr>
<td>Vintage Oaks Shopping Center</td>
<td>N/A</td>
<td>N/A</td>
<td>Reach out to business owners to improve bicycle parking</td>
<td>$0</td>
</tr>
<tr>
<td>N/A</td>
<td>De Long Avenue</td>
<td>Davidson Street</td>
<td>Realign Davidson Street and De Long Avenue to become one street. In the interim, install a cross-traffic does not stop sign. Consider a shared-use path between Rosalia Drive and De Long Avenue.</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>N/A</td>
<td>Nave Drive</td>
<td>Alameda del Prado</td>
<td>Add bicycle wayfinding to the path that runs parallel to Redwood Highway to the Class II bicycle lanes on Alameda del Prado and Nave Drive</td>
<td>$25,000</td>
</tr>
<tr>
<td>N/A</td>
<td>Unnamed Trail</td>
<td>Bel Marin Keys Boulevard</td>
<td>Remove the barrier placed along the unnamed trail near the Anubhuti Brahma Kumaris Meditation and Retreat Center south of Bel Marin Keys Boulevard</td>
<td>$20,000</td>
</tr>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Create bicycle parking inventory</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

Total Other $1,447,000
Figure 4-7: Proposed Bikeway Network
4.6.5 Other Regional and Countywide Connections

During the development of this plan update, the B/PAC expressed support for a number of projects that would provide countywide or regional connections for residents of the City of Novato but are outside the jurisdiction of the city. These statements reflect the position of the B/PAC and its members and are not necessarily the position of the City of Novato or its staff.

1. SMART Path: The B/PAC recognizes that the proposed SMART rail with pathway could provide benefits to Novato bicyclists. In general, the B/PAC has identified the following issues with the proposed SMART project:
   a. The B/PAC’s stated preference is for the bikeway to be along the SMART rail alignment and preferably on the west side of the existing tracks whenever possible
   b. The number of at-grade crossings should be minimized
   c. SMART should work with the City of Novato to implement the relevant portions of the city’s bicycle plan and help achieve its objectives with regard to encouraging bicycling

2. State Route 37 bikeway and San Francisco Bay Trail segment: The committee also recognized the need for an improved connection to Sonoma County to the east along the State Route 37 corridor. The B/PAC expressed support for the proposal to develop a bikeway along this segment, either on State Route 37, as feasible, or as a part of a separate San Francisco Bay Trail alignment, or both.

4.6.6 Countywide Bicycle Route Wayfinding Signage Project

As described in the preceding Existing Conditions section, the Marin County Department of Public Works installs standard bicycle route signs throughout the county to allow users to travel safely within and between jurisdictions. Although it is not an infrastructure project included in this plan, the city and the B/PAC are committed to working with the Marin County Department of Public Works to ensure implementation of this project within Novato. Because the county project focuses primarily on decision points to provide wayfinding, this project may be supplemented by Class III Bikeway: Bicycle Route signage, as described elsewhere this plan. In addition, Class III Bikeway signage may be found on designated Novato bike routes which are not a part of the county’s project.
4.7 Recommended Bicycle Programs & Policies

Support programs and policies are an important component of a bicycle transportation system. Bikeway facilities alone are not sufficient to increase bicycling. The bicycling environment needs to be improved by providing bicyclists places to store their bicycles at work locations, and restrooms to shower and change clothes. In addition, bicycle racks on buses, directional signage intended for cyclists, route maps and educational and encouragement programs would be helpful to bicyclists. Programs such as bikeway management and maintenance improve bicyclists safety, and promotional and educational programs support the cultural shift that encourages bicycling as a mode of transportation. The following section includes both general and specific recommendations for support facilities and programs.

4.7.1 Bicycle Parking and End-of-trip Facilities Recommendations

Bicycle parking includes standard bike racks, covered lockers, enclosed lockers, bike spas, and corrals. Other end-of-trip facilities include showers and changing facilities.

Bicycle Parking Inventory

Create an inventory of existing bicycle parking and update the inventory annually. The inventory should be geo-located and maintained by the City of Novato.

Increase Public Bicycle Parking Facilities and Encourage/Mandate Provision of Shower and Changing Facilities

The City of Novato should adopt City ordinance requirements for bicycle lockers and showers. In implementing these standards and regulations, the City should seek to provide bicycle lockers at public destinations, including park-and-ride lots, major bus stops, community centers, libraries, parks, schools and shopping centers. All bicycle parking should be in a safe, secure, covered area (if possible). Large employers should be encouraged to provide secure indoor parking, covered bicycle corrals, or bicycle lockers.

The City of Novato should work with employers to implement the requirements for providing bicycle parking, shower, and changing facilities for employees as called for in City ordinance and as a component of all commute and traffic demand management programs (per Municipal and Building Codes).

The B/PAC should periodically review the effectiveness of the existing standards and ordinances and update them with best practices as needed.

Provide Valet Bike Parking at Public Events

A formal program to provide closed-in secure bicycle corrals at all large public events to encourage residents and visitors to bicycle rather than drive should be instituted. The bicycle coalitions in Marin County and San Francisco have been providing free bicycle parking at events. The valet parking works much like a coat check: the cyclist gives their bicycle to the attendant, who tags the bicycle with a number and gives the cyclist a claim stub. When the
bicyclist returns to get her or his bicycle, she or he presents the claim stub and the attendant retrieves her or his bicycle for them. Locks are not needed. The Marin County Bicycle Coalition (MCBC) will also park strollers, rollerblades, electric scooters and other human- or electric-powered transportation devices. Valet parking could be sponsored by the City in partnership with the Marin County Bicycle Coalition and/or other providers or sponsors. Volunteers are critical to the success of such a program as they are typically used to staff the corral during the events.

**Bikeways and Development Policies Recommendations**

Private development presents an excellent opportunity to integrate active transportation into newly constructed or redeveloped environments. Similar to the bicycle parking and end-of-trip facilities requirements described above, a policy should be developed concerning bikeway construction as a part of redevelopment or new construction. Based on specific criteria, bikeways could be required for development permits or bicycle facilities could be incorporated into the City’s traffic mitigation strategies. Bikeways to be constructed should be identified in the *Novato Bicycle / Pedestrian Plan* and be reviewed by staff with the involvement of the B/PAC. End of trip facilities should be integrated according to national and international best practices.

**4.7.2 Safe Routes to School Recommendations**

Identifying and improving routes for children and school staff to walk or bicycle to school is an effective means of reducing morning traffic congestion and addressing safety problems around schools. Most effective school commute programs are joint efforts of the school district and City or County, with parent organizations adding an important element. The traffic calming, route maps, School-Pool efforts, and infrastructure improvements that result from an extensive Safe Routes to School plan benefit not only students walking and biking to school, but also other cyclists and pedestrians that are using routes near schools.

The City of Novato should continue its support of the Safe Routes to Schools program within the Novato Unified School District and charter schools. Bicycle alterations at local schools should be coordinated with citywide bicycle infrastructure alterations to create a seamless network by which children and school staff can travel safely by bicycle and on foot.

**4.7.3 Traffic Calming Recommendations**

Traffic calming programs are beneficial for bicyclists, especially if programs succeed in reducing the speed differential between automobile and bicyclist travel speeds. However, if not appropriately designed, some physical traffic calming devices can present hazards for cyclists. For example, chokers or median islands narrow the space between bicycles and cars, compromising a cyclist’s safety.

Physical traffic calming solutions should take into account cyclists’ needs; incorporate design features and signage that ensure that cyclists and motorists have enough room to share the lane; and clearly establish right-of-way priorities.
The City of Novato should adopt a traffic calming program that identifies roadways with a history of unsafe motor vehicle operations, roadway configurations that encourage speeding, poor delineation of pedestrian crossings, and other potential bicycle- and pedestrian-related safety issues. Once identified, the traffic calming program should provide a toolbox of potential countermeasures, and designates a clear process for implementing traffic calming measures.

**4.7.4 Maintenance Recommendations**

Providing ongoing maintenance is often identified as one of the chief obstacles in the implementation of local bicycle and pedestrian plans in Marin County. Novato's bikeways should be well-maintained. Some tasks, such as repairing damaged and potholed roadway surfaces, clearing plant overgrowth and regular sweeping are associated with routine roadway maintenance. Additional care and attention should be taken to ensure bikeways are included in the maintenance. For example, street sweeping activities should include the bicycle lane and not transfer debris out of the roadway and into the bicycle lane. Other maintenance activities are bikeway specific, and could include restriping lanes, repainting stencils and replacing signs.

**Develop a Funding Source for the Bicycle Maintenance Program**

Bikeways are an integral part of Novato’s transportation network, and maintenance of the bikeway network should be part of the ongoing maintenance program for all city transportation facilities. As such, bikeway network maintenance should be adequately funded. In addition to maintenance funds from general revenue, the City may also want to consider pursuing other methods of securing funding for bikeway and pathway maintenance. Examples of alternative funding include “adopt-a-trail” programs, implementing recreational fees on the purchase of recreational equipment in the city, project-specific fundraising, and the sale of city-developed bicycle maps. The Transportation Authority of Marin has undertaken development of maintenance strategies for countywide pathways which may provide insights into development of a similar program for bikeways in Novato.

**Intersection and Bikeway Spot Improvement Program**

The City should ensure that a mechanism exists to evaluate the bikeway network, to alleviate potential hazards and to improve conditions for bicyclists at specific intersections and locations. Training should be provided if necessary to ensure that public works employees recognize bicycle hazards such as:

- Improperly designed or placed drainage grates
- Cracks or seams in the pavement
- Overhanging tree limbs or other obstacles located along bikeways
- Areas where lane changes are difficult (e.g., bicycle lane to left-turn pocket)
- Signal timing problems (e.g. green phase too short)
- Locations where motor vehicle traffic blocks bike facilities on a regular basis
4.7.5 Interchange Improvement Program
Freeway interchanges present opportunities for conflict between people driving and active transportation users. The City should develop a program to identify interchange area improvements for bicyclists and pedestrians, and coordinate these improvements with Caltrans.

4.7.6 Integrate Bicycle Maintenance into DPW Maintenance Requests
In the future, all printed and online bicycle education materials and maps should include the Department of Public Works maintenance request website and phone number.

4.7.7 Periodically Analyze Bicycle Accident Data
The City should evaluate bicycle accident data on an annual basis to determine if any specific intersection locations appear to have higher accident rates that could be due to design problems.

4.7.8 Bicycle Signal Detection Recommendations
As described in this plan, the City of Novato has no official policy regarding bicycle signal detection. The City’s current practice is to use type D loops and video detection to allow cyclists to trip signals and cross intersections. The following recommendations are intended to expand the City’s existing bicycle signal detection efforts to include bicycles along all designated lanes/routes and at key intersections.

Calibrate Loop Detectors and Video Detection Devices
While detector loops and video detection facilitate faster and more convenient motorist trips, if they aren’t calibrated properly or stop functioning, they can frustrate cyclists waiting for signals to change, unaware that their bicycle is not being detected. The City should ensure that all existing loops and video detection devices are calibrated and operable for bicycle users.

Develop Policy of Installing Bicycle-Calibrated Loop Detectors or Video Detection with Bicycle Zones at Signalized Intersections
The City should develop a policy of installing bicycle-calibrated loop detectors at intersections along designated bicycle routes as they are repaved. For new installations it is recommended that the City continue to use Type D for lead loops in all regular travel lanes shared with bicycles. Within bicycle lanes it is recommended that the City install bicycle loop detectors (BLDs) using narrow Type C loops.

Where video detection is currently or planned to be in use, it is recommended that the City continue and expand its practice of incorporating additional detection zones for bicycles, especially for intersections with sidepaths, wide curb lanes or Class II bikeways. Video image detection should sense bicycles in all approach lanes and also on the left side of right-turn channelization islands. Some video systems can estimate approach speed, and this capability could be used to extend the green time for slow objects assumed to be bicycles.
Apply Pavement Stenciling to Indicate Detection Areas

Since most bicyclists, as well as motorists, do not know how loop detectors or video detection work, all detector loops and video detection areas expected to be used by cyclists should be marked by a pavement stencil such as the Caltrans Standard Plan A24C bicycle detection marking that shows cyclists where to stop to activate the loop or video detection. Educational materials distributed by the City should describe how to activate bicycle detectors. Stencils should be repainted as needed along with other roadway markings.

Install New Traffic Signal Bicycle Detection

Install or provide maintenance for bicycle signal detection at the following locations:

- Novato Boulevard and Arthur Street
- Novato Boulevard and Grant Avenue
- Alameda del Prado and Ignacio Boulevard
- Redwood Boulevard and Rowland Boulevard

4.7.9 Protect Bicycle Facilities from Removal

The City should implement a practice that prohibits the removal of existing bikeway facilities. For example, Class II bicycle lane facilities should not be removed at a future date to increase motor vehicle capacity without a thorough study analyzing the alternatives and unless the bicycle accommodation is replaced by another facility of equal or greater utility to cyclists.

4.7.10 Multi-modal Connection Recommendations

The City of Novato should work with the Golden Gate Transit, Marin County Transit District, and Sonoma-Marin Area Rail Transit to continue to expand bicycle access to buses. Bicycle travel to transit stops and stations should be enhanced in order to make the transfer between bicycle and transit travel as convenient as possible. Key components to enhancing transit-bicycle connections include: providing bicycle parking at transit stops, including bicycle racks at key bus stops and transfer points; providing educational materials regarding transit and bikes-on-transit, including maps to and from stations and stops. Improvements to bicycle rack capacity on buses will benefit Novato cyclists who use Marin Transit and Golden Gate Transit. SMART trains will also have the capability to carry bikes inside its cars.

4.7.11 Education Program Recommendations

Statewide trends show that the lack of education for bicyclists, especially younger students, continues to be a leading cause of collisions. Studies of collisions locations around California consistently show the greatest concentration of accidents is directly adjacent to elementary, middle, and high schools. Most education and encouragement programs and activities will likely be cooperative efforts between the City of Novato, the Novato Police Department, the Marin County Sheriff, the County of Marin, the Transportation Authority of Marin and local bicycle groups such as the Marin County Bicycle Coalition.
Continue and Expand Existing Education Programs

Existing school education programs should be continued, and funding for Safe Routes to School programming should be actively supported by City officials. For adult education, the City should work with law enforcement and the Marin County Bicycle Coalition to publicize local adult bicycle education and safety programs, including “Share the Road” and “Street Skills” classes. Novato should continue to offer “Bicycle Traffic School” in the form of “Street Skills” classes in lieu of fines.

Educate Motorists

Motorist education on the rights of bicyclists and pedestrians is limited. Many motorists mistakenly believe, for example, that bicyclists do not have a right to ride in travel lanes, or do not understand the concept of sharing the road with bicyclists. The City should enforce existing traffic laws for both motorists and bicycles.

The City should also continue to partner with TAM on implementing the Street Smarts Marin program in Novato. The campaign targets bicyclist, pedestrian, and motorist behavior and educates the public on safe roadway behavior through banners and signs.

Shared-use Path and Trail Etiquette

Informing trail users of acceptable etiquette is a common issue when multiple user types are sharing a facility. Yielding the right-of-way is a courtesy and yet a necessary part of a safe trail experience involving multiple trail users. Trail right-of-way information should be posted at trail access points and along the trail. The message must be clear and easy to understand. The most common observed behaviors involve yielding of cyclists to pedestrians and, potentially, golf carts and other users. The education of trail users is a critical part of creating a safe trail environment for all trail users.

Guidelines should be clearly posted at trail access points. Educational curricula, similar to the “Safe Routes to School” programs, could be used to encourage safe practices of various trail users. The purpose of trail etiquette is to promote user safety and enhance the enjoyment of all users. Below is a sample of the most common items that should be covered in trail etiquette:

- Motorized vehicles, other than power-assisted wheelchairs, are prohibited with the exception of electric bicycles at the following bike path segments:
  - Gate Six in Sausalito to the former Marin County Heliport;
  - The west shoulder of US 101 from Lincoln Avenue to Los Ranchitos Road; and
  - The west shoulder of US 101 from Miller Creek Road to Alameda Del Prado; and
  - State Route 37 to Hamilton Drive.
- Keep to the right except when passing
- Bicycle speed limit of 15 MPH
- Bicyclists yield to pedestrians
- Give an audible warning before passing (and a thank you in kind)
- Pets must always be on short leashes
- Travel no more than two abreast
- Reduce speeds when children are present

4.7.12 Encouragement Program Recommendations

Encouragement programs are vital to the success of the Novato Bicycle / Pedestrian Plan. Encouragement programs work to get more people out of their cars and bicycling and walking, which will help to reduce traffic congestion and air pollution, as well as improve the quality of life in Novato. In addition to government efforts, involvement by the private sector in raising awareness of the benefits of bicycling is important and can range from small incremental activities by non-profit groups, to efforts by the largest employers in the City. Specific programs are described below.

Bike Fairs and Races

Hosting bike fairs and races in Novato can raise the profile of bicycling in the area and provide entertainment for all ages at the same time. Bike fairs and races, similar to bike-to-work day events and bike rodeos currently hosted by the City provide an opportunity to educate and encourage current and potential bicyclists. These events can also bring visitors to Novato that may contribute to the local economy.

Bike-to-Work and Bike-to-School Days

The City of Novato should participate in the annual Bike-to-Work day in May, in conjunction with the California bike-to-work week activities. City staff should be present at energizer stations along the route to promote the plan and other programs. The City may also consider implementing bike-to-school days.

4.7.13 Novato Bicycle Facilities Map

Producing a bicycle facilities map is the primary tool for showing bicyclists all the designated bikeways in Novato. On an annual basis, the City of Novato should work with the Marin County Bicycle Coalition (MCBC) to produce a Novato-specific bicycle map. The Novato Bicycle Map should clearly show the type of facility (path, lane, or route) as well as include basic safety information, significant destinations, and location of bicycle parking facilities, public bathrooms, water fountains, transit stops, and bicycle facilities in the neighboring communities. Selling advertising space on the map to local restaurants, shops and bicycle stores could offset the cost of developing and printing. The map could also be sold for a nominal fee. Distribution points for the map include: City offices, the libraries, the community center, local schools, bicycle shops and other recreational retail outlets. In addition, the City should work with Google Maps, OpenStreetMap, and other online map application program interfaces (APIs).
5 Pedestrian Element

The City of Novato has over 151.8 centerline miles of roadway, which creates the need for a large adjacent pedestrian network. The state of the pedestrian network varies greatly throughout the City, with a more complete network near commercial centers and aging infrastructure in residential neighborhoods. While some Novato neighborhoods contain limited space for both on-street parking and sidewalks or paths, opportunities exist to expand and enhance the pedestrian environment. Major barriers to walking include a lack of a mid-block crossings near shopping centers with large block sizes, east-west connectivity over US 101 to the two planned SMART stations and to the SMART Path, pedestrian access to recreational amenities such as Stafford Lake, and gaps along major streets that connect residents with transit, jobs, and healthcare. This section is designed to identify pedestrian issues and prioritize potential projects to address those issues.

5.1 Proposed Pedestrian Network

As shown in this plan, Novato’s current pedestrian system provides some opportunities to improve connectivity. Details on proposed projects and cost estimates can be found in Table 5-2. The cost of the recommended projects is estimated to be about $400,000 for intersection alterations, $70,000 for mid-block crossings, and $1,840,000 for sidewalks or shared-use paths. The combined cost for all projects is $2,310,000. It is important to note the three following assumptions about the cost estimates. First, all cost estimates are highly conceptual, since there is no feasibility or preliminary design completed, and second, the design and administration costs included in these estimates may not be sufficient to fund environmental clearance studies. Finally, costs estimates are a moving target over time as construction costs escalate quickly.

All the projects are recommended to be implemented over the next 2 to 20 years, or as funding becomes available. In addition, many funding sources are highly competitive, and therefore impossible to determine exactly which projects will be funded by which funding sources. Timing of projects is also something difficult to pinpoint exactly, due to the dependence on competitive funding sources and, timing of roadway and development, and the overall economy.

Table 5-1: Proposed Pedestrian Project Cost Estimates - Summary

<table>
<thead>
<tr>
<th>Type</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersection Alterations</td>
<td>$932,000</td>
</tr>
<tr>
<td>Mid-Block Crossings</td>
<td>$70,000</td>
</tr>
<tr>
<td>Sidewalks or Shared-Use Paths</td>
<td>$2,142,500</td>
</tr>
<tr>
<td>Total</td>
<td>$2,539,500</td>
</tr>
</tbody>
</table>
Table 5-2: Proposed Pedestrian Projects

<table>
<thead>
<tr>
<th>Route/School</th>
<th>Begin</th>
<th>End</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthur Street</td>
<td>Indian Valley Road</td>
<td>Taft Court</td>
<td>Sidewalk gap closure</td>
<td>$150,000</td>
</tr>
<tr>
<td>Atherton Avenue*</td>
<td>Binford Road</td>
<td>Redwood Boulevard</td>
<td>Intersection alterations</td>
<td>$529,500</td>
</tr>
<tr>
<td>Center Road</td>
<td>Apollo Court</td>
<td>Sun Lane</td>
<td>Concrete bulb-out with sidewalk that extends around driveways</td>
<td>$350,000</td>
</tr>
<tr>
<td>Chase Street</td>
<td>Olive Avenue</td>
<td>Peach Street</td>
<td>Sidewalk gap closure on east side of Chase St.</td>
<td>$250,000</td>
</tr>
<tr>
<td>De Long Avenue</td>
<td>Reichert Avenue</td>
<td>Sherman Avenue</td>
<td>Widen sidewalk, construct bulb-outs, and consider removal of some on-street parking</td>
<td>$300,000</td>
</tr>
<tr>
<td>Mill Road</td>
<td>Trumbull Avenue</td>
<td>Louise Avenue</td>
<td>Construct sidewalk on north side of Mill Rd. and gap closure on south side</td>
<td>$120,000</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>7th Street</td>
<td>Diablo Avenue</td>
<td>Construct sidewalks</td>
<td>$400,000</td>
</tr>
<tr>
<td>Novato Boulevard</td>
<td>Nave Court</td>
<td>Novato Fair Shopping Center</td>
<td>Mid-block crossing with flashing beacons</td>
<td>$30,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>west entrance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olive Avenue</td>
<td>Redwood Boulevard</td>
<td>Railroad Avenue</td>
<td>Sidewalk construction on north side of Olive Ave. and gap closures on south side of Olive Ave.</td>
<td>$300,000</td>
</tr>
<tr>
<td>Peach Street</td>
<td>Chase Street</td>
<td>Olive Elementary School</td>
<td>Convert to woonerf</td>
<td>$20,000</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>Diablo Avenue</td>
<td>Grant Avenue</td>
<td>Mid-block crossing alterations</td>
<td>$20,000</td>
</tr>
<tr>
<td>Redwood Boulevard</td>
<td>1,000 feet north of Rowland</td>
<td>400 feet south of Hill Road</td>
<td>Sidewalk gap closure</td>
<td>$200,000</td>
</tr>
<tr>
<td></td>
<td>Boulevard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route/School</td>
<td>Begin</td>
<td>End</td>
<td>Description</td>
<td>Cost</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>N/A</strong></td>
<td><strong>Grant Avenue</strong></td>
<td><strong>Virginia Avenue</strong></td>
<td>Intersection alterations such as a continental high-visibility crosswalk and advanced yield markings along the south leg, stop sign warrant study at the south approach, or optical lane markings at all approaches,</td>
<td><strong>$35,000</strong></td>
</tr>
<tr>
<td><strong>N/A</strong></td>
<td><strong>Chase Street</strong></td>
<td><strong>Olive Avenue</strong></td>
<td>Install high-visibility crosswalks</td>
<td><strong>$10,000</strong></td>
</tr>
<tr>
<td><strong>Diablo Avenue</strong></td>
<td><strong>Novato Fair Driveway</strong></td>
<td><strong>George Street</strong></td>
<td>Re-stripe crosswalk and install flashing beacon</td>
<td><strong>$30,000</strong></td>
</tr>
<tr>
<td><strong>Loma Verde Elementary School Path</strong></td>
<td><strong>Ignacio Boulevard</strong></td>
<td><strong>Calle de la Mesa</strong></td>
<td>Palmer/Loma Verde Gap Closure – Coordinate with Marin County to utilize the existing easement between Called de la Mesa and Ignacio Boulevard to provide a direct connection from Palmer Drive to the walkway that connects to Loma Verde Elementary School</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>San Jose Middle School</strong></td>
<td></td>
<td></td>
<td>Evaluate the school drop-off vehicle path of travel to Ignacio Boulevard adjacent to Kathy Court to relieve congestion on Sunset Parkway and Merritt Drive and reduce pedestrian-vehicle conflict at school crossing; Enhanced pedestrian crosswalk improvements Ignacio Boulevard/Laurelwood Drive, Ignacio Boulevard/Country Club Drive</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Olive Elementary School</strong></td>
<td></td>
<td></td>
<td>Plum Street sidewalk gap closure</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Rancho Elementary School</strong></td>
<td></td>
<td></td>
<td>Cambridge Street/Arthur Street sidewalk gap closure; Enhanced pedestrian crosswalk improvements at S. Novato Boulevard/Lark Court, S. Novato Boulevard/Yukon Way; Intersection improvements at Adams Street &amp; Johnson Street and at Cambridge Street and Johnson Street; Construct bulb-outs with drainage inlets and</td>
<td>TBD</td>
</tr>
<tr>
<td>Route/School</td>
<td>Begin</td>
<td>End</td>
<td>Description</td>
<td>Cost</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Rancho Elementary School</td>
<td>Harrison Court</td>
<td>Cambridge Street</td>
<td>Modification to drain lines on all four corners</td>
<td>TBD</td>
</tr>
<tr>
<td>Novato High School</td>
<td></td>
<td></td>
<td>Construct curb ramps on northwest and southwest corners and accommodate existing valley gutter across Harrison Court</td>
<td>TBD</td>
</tr>
<tr>
<td>Loma Verde Elementary School</td>
<td></td>
<td></td>
<td>Cambridge Street/Arthur Street sidewalk gap closure; Enhanced pedestrian crosswalk improvements at S. Novato Boulevard/Lark Court, S. Novato Boulevard/Yukon Way; Solar Powered Radar Speed Information Sign Installations; Pedestrian circulation alterations (Arthur Street and Cambridge Street); School area signing and pavement markings</td>
<td>TBD</td>
</tr>
<tr>
<td>Hamilton Elementary School</td>
<td></td>
<td></td>
<td>Enhanced pedestrian crosswalk improvements Ignacio Boulevard/Laurelwood Drive, Ignacio Boulevard/Country Club Drive; Improve pedestrian safety with additional signage, street striping, curb ramps, and pedestrian refuge</td>
<td>TBD</td>
</tr>
<tr>
<td>Pleasant Valley Elementary School</td>
<td></td>
<td></td>
<td>Solar Powered Radar Speed Information Sign Installations; Reduce sign clutter along Main Gate Road, update signage to comply with the California MUTCD 2006 standards, high-visibility striping or raised crosswalk and yield markings at crosswalk in front of school; Re-stripe Bolling Circle and Randolph Drive to ten foot travel lanes with bike lanes and parking on one side</td>
<td>TBD</td>
</tr>
<tr>
<td>San Marin High School</td>
<td></td>
<td></td>
<td>Solar Powered Radar Speed Information Sign Installations; School area signing and pavement markings; Pedestrian circulation alterations (San Marin Drive)</td>
<td>TBD</td>
</tr>
<tr>
<td>Lu Sutton Elementary School</td>
<td></td>
<td></td>
<td>Intersection Improvements and traffic calming</td>
<td>TBD</td>
</tr>
<tr>
<td>Novato Charter School</td>
<td></td>
<td></td>
<td>Intersection alterations (Main Gate Road); Pedestrian crossing alterations (Hamilton Parkway)</td>
<td>TBD</td>
</tr>
<tr>
<td>Route/School</td>
<td>Begin</td>
<td>End</td>
<td>Description</td>
<td>Cost</td>
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<td>-----------------------------------</td>
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<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>San Ramon Elementary School</td>
<td></td>
<td></td>
<td>Alter all school area signage to fluorescent yellow-green per 2006 CA MUTCD, re-stripe existing school area crosswalks to hi-visibility ladder, construct bulb-outs at San Ramon Way/San Benito Way and San Ramon Way/San Juan Court, re-fresh school area curb striping, install permanent signs at driveway entrance prohibiting vehicles from entering to drop-off children during morning drop-off hours, and widen sidewalks in front of school.</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Total Pedestrian Projects $3,144,500

*Project cost split evenly between bicycle and pedestrian components (See page 52)*

Proposed pedestrian facilities focus on sidewalk and path gap closures and improving intersection safety. Sidewalk gap closures are recommended along Arthur Street, Center Road, Chase Street, Mill Road, Olive Avenue, and Redwood Boulevard. Intersection alterations are recommended at Atherton Avenue and Binford Boulevard, Grant Avenue and Virginia Avenue, Grant Avenue and 8th Street, Chase Street and Olive Avenue, and Diablo Avenue and George Street. Potential mid-block crossings should be evaluated along Redwood Boulevard between Diablo Avenue and Grant Avenue, Novato Boulevard between Nave Court and the Novato Fair Shopping Center, and Diablo Avenue between Redwood Boulevard and Novato Boulevard. A major area of concern is the segment of Novato Boulevard between 7 Street/Tamalpais Avenue to the intersection of Novato Boulevard and Diablo Avenue. This is one of Novato’s three major arterial roadways and contains gaps in the sidewalk network or existing paths that are unsuitable for access by the physically impaired. Because of resident desire to maintain on-street parking, the conversion of Peach Street to a woonerf, a Dutch term for a street that prioritizes pedestrian right-of-way without eliminating automobile access, is recommended. Figure 5-1 shows the proposed pedestrian projects.
Figure 5-1: Proposed Pedestrian Projects
5.2 Recommended Pedestrian Programs & Policies

This section outlines priority actions for improving walking in Novato, with a focus on meeting plan objectives, including the strong desire to improve safety while maintaining existing infrastructure. The following sections summarize positive actions that can be undertaken or considered as part of this plan’s implementation using the “Five E’s” of transportation planning: engineering, education, enforcement, encouragement, and evaluation.

5.2.1 Engineering

Adoption of the Complete Streets Policies White Paper and the planned City of Novato General Plan update requires review of the all documents for consistency. The City should adopt a more rigorous policy for pedestrian accommodation, including specific streets (e.g., all minor and collector arterials) where ADA-compliant sidewalks or pathways are a priority. These recommendations should be included in the City's Standard Specifications as permitted/desired treatments.

5.2.2 Education

Partnering with local student groups can provide youth engagement opportunities, bring enthusiasm to projects, and help build community buy-in. Environment-focused groups, the Novato Park and Recreation Department or the Conservation Corps North Bay, may be natural partners for the goals of increasing active transportation in Novato.

5.2.3 Encouragement

Residents and community members are excellent resources for garnering support and enthusiasm for pedestrian facility improvements. The City could work with volunteers to substantially reduce implementation and maintenance costs, particularly for unpaved walkways. Local schools, community groups, or dedicated neighbors group may help sponsor projects, possibly by working with a local designer or engineer. Work parties can be formed to help clear right-of-way where needed. Local construction companies can donate or discount services. Potential volunteers include neighborhood and other community groups, including Boy Scouts of America, for a community-service project.

Create a strong pedestrian culture that welcomes and celebrates walking through:

- Support local advocacy groups and reach out to local schools or groups in order to promote pedestrian-related projects and to maximize public-private funding opportunities such as development of walking maps and/or path maintenance.
- Support bike-to-work and walk-to-work Days by hosting energizer stations and by promoting the events through available media outlets.
- Support International Walk and Roll to School Day in October through coordinated efforts with Novato-area schools.
5.2.4 Enforcement

Strive to improve safety for all users by:

- Considering a 15/20 MPH zone speed limit for application in select school zones
- Conducting crosswalk “stings” in areas with reported issues.
- Communicate safe and appropriate rules of the road for all roadways users through targeted enforcement and education.
- Encourage the Novato Unified School District, as well as private schools, to fund crossing guards to assist with active school commutes.

5.2.5 Evaluation

Continue to use the B/PAC to evaluate the progress of plan implementation.

Data Collection

Pedestrian counts are important because they provide documentation of actual pedestrian activity, allowing the City to make informed decisions to target improvements in areas where they will be most beneficial. Project-specific “before and after” counts are also valuable to assess progress in encouraging active transportation, and are increasingly required to compete for outside grant funding (including the statewide Active Transportation Program, or ATP).

- Create a program to conduct regular pedestrian data collection efforts at strategic screen lines to assess activity level trends.
- Update citywide traffic counts for all modes, including automobile counts, to assist the feasibility and design for including pedestrian facilities in new projects.
- Create and maintain a regularly updated sidewalk inventory and sidewalk condition database, as well as a maintenance plan to address identified issues.
5.3 Project Prioritization

Once a bikeway and pedestrian network has been identified, the next challenge is to identify the priority projects that will offer the greatest benefit to bicyclists and pedestrians once they are implemented. The project prioritization in the following section was developed through a qualitative analysis based on stated priorities of the B/PAC and City staff, priorities communicated by the public at the City of Novato Bicycle / Pedestrian Plan public workshops held on September 17, 2014 and November 12, 2014, priorities from the 2007 Novato Bicycle Plan, and the criteria detailed below.

- **Continuity** – Does the project provide new or significantly improved connectivity on established corridors or between major activity areas that does not currently exist or is not currently usable by the general public?
- **Gap Closure** – Does the project provide a new connection between major activity centers or on a major corridor that currently either does not exist or has convenience/safety issues?
- **Demand Patterns** – Does the project serve a significant existing or potential demand, as evidenced by (a) counts or observed activity, (b) comments from the public, (c) connectivity and proximity to major generators, and/or (d) projections from an acceptable demand model?
- **Safety** – Does the project address a significant safety concern in a community as evidenced by collision data, field observations, and/or public perception and comments?
- **Project Readiness** – Are the key feasibility issues of the project (right-of-way, environmental impacts, engineering issues, cost issues, neighborhood support) understood and not expected to negatively affect or delay the project? Has any formal feasibility study, engineering or design been conducted?
- **Multi-Modal Integration** – Does the project provide enhanced connectivity to existing transit services?
- **Cost/Benefit analysis** – Will the project provide the greatest benefit to cyclists and/or pedestrians for the amount of investment required to build it?

It is important to remember that the lists of bikeway and pedestrian projects and programs are flexible concepts that serve as guidelines to those responsible for implementation. The priority projects list, and perhaps even the overall system and segments themselves, may change over time as a result of changing bicycling patterns and implementation constraints and opportunities. Project prioritization is not meant as an absolute value, rather as an indication of project’s relative importance only. These priorities should be considered a living document. The B/PAC and City staff should review the priority projects list on an annual basis to ensure that it reflects the most current priorities, needs, and opportunities for implementing the bikeway network in a logical and efficient manner. In particular, the list should be adjusted to take advantage of all available funding opportunities and grant cycles. As projects are implemented and taken off the list, new projects should be moved up into priority projects status.
5.3.1 Class I Bikeway Priorities
1. Novato Boulevard Sidewalk – West City Limit to Sutro Avenue/San Marin Drive
2. SMART Path – Olive Avenue to San Marin Drive
3. SMART Path – State Access Road to Bel Marin Keys Boulevard

5.3.2 Class II Bikeway Priorities
1. Atherton Avenue – Redwood Boulevard to Bay Tree Hollow
2. Franklin Avenue – Reichert Avenue to the SMART Path
3. Grant Avenue – Novato Boulevard to 7th Street
4. Lamont Avenue – Reichert Avenue to SMART Path
5. Redwood Boulevard – San Marin Drive to Buck Center Drive
6. San Marin Drive – Novato Boulevard to Simmons Lane
7. Sutro Avenue – Vineyard Road to Center Road
8. Vineyard Road – Sutro Avenue to Eucalyptus Avenue
9. Vineyard Road – Williamson Court to Wilson Avenue

Note: Class II projects listed above are not in priority order; each should be given equal priority and implemented as opportunities arise either through stand-alone projects or as a part of larger roadway maintenance or reconstruction activities.

5.3.3 Class III Bikeway Priorities
1. Center Road – Sutro Avenue to Novato Boulevard
2. Armstrong Avenue from Atherton to Cherry Street, Cherry Street from Armstrong Avenue to Chase Street, and Chase Street from Cherry Street to Olive Avenue

5.3.4 Pedestrian Project Priorities
1. Atherton Avenue – Binford Road and Redwood Boulevard intersection alterations
2. Novato Boulevard – Nave Court and Novato Fair Shopping Center mid-block crossings
3. Diablo Avenue – Redwood Boulevard and Novato Boulevard mid-block crossings
4. State Access Road – Nave Drive to C Street sidewalk construction
6 Plan Implementation

This chapter identifies steps towards implementation of the proposed facilities and programs identified in this plan, the estimated costs for the proposed improvements and maintenance, and strategies on funding and financing.

The steps between the network improvements and concepts identified in this Plan and the final completion of the improvements will vary from project to project, but typically include:

- Adoption of the Novato Bicycle / Pedestrian Plan by the Novato City Council
- Conduct public outreach
- Preparation of a feasibility study involving a conceptual design (with consideration of possible alternatives and environmental issues) and cost estimate for individual projects as needed
- Secure, as necessary, outside funding and any applicable environmental approvals
- Consider the parking needs of businesses and residents in the development of new bicycle lanes through a thorough community engagement process
- Approval of the project by the City Council, including the commitment by the latter to provide for any unfunded portions of project costs
- Include project in the City’s Capital Improvement Plan
- Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s)
- Construction of project
- Monitor project performance (bicycle and pedestrian counts)

7 Maintenance

Maintenance costs for the bikeway and pedestrian network should be relatively low. The existing and recommended bikeway network is predominately made up of on-street bike lanes and routes that will be treated as part of the normal roadway maintenance program. As part of the normal roadway maintenance program, extra emphasis should be put on keeping the bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility or creeping into the roadway, such as frequent sweeping schedules for roadways on the bikeway network. As required under the city code, the costs to maintain the sidewalk network will primarily be the responsibility of property owners. Intersection and crossing projects will also be treated as part of the normal roadway maintenance program.
8 Marketing the Plan

The success of the Novato Bicycle / Pedestrian Plan depends largely on the community’s acceptance and promotion of the plan’s contents. City departments and commissions should incorporate the policies, objectives and spirit of the plan into their respective projects and responsibilities. The following steps will help ensure the plan becomes a living document, helping shape Novato’s future.

- Distribute copies of the plan to members of the Planning Commission, B/PAC, Streetscape Committee, and Parks, Recreation & Community Services.
- Distribute copies of the plan to City of Novato’s Engineering, Parks and Recreation, Planning, Police, and Public Works Departments.
- Provide copies of the City of Novato bicycle facilities map to local schools, bicycle and recreational groups, transit agencies, bicycle shops and major employers.
- Post the plan on the City’s website.
- Publish a press release about the adoption of the plan.
- Provide copy of plan to public libraries.
- Reference elements of the plan in staff reports for relevant City Council legislation.
- Provide regular reports to City Council regarding the implementation of the plan.
- Reference the Novato Bicycle / Pedestrian Plan in the City of Novato General Plan.
Appendix A: Funding Sources

This chapter provides information on potential funding sources for bicycle and pedestrian improvements. Federal, state and local government agencies invest billions of dollars every year in the nation’s transportation system. Only a fraction of that funding is used in development projects, policy development and planning to improve conditions for pedestrians and bicyclists. Even though appropriate funds are limited, they are available. To support agency efforts to find outside funding sources to implement bicycle and pedestrian improvements, a summary by source type is provided below.

Federal Sources

Moving Ahead for Progress in the Twenty-First Century (MAP-21)

The largest source of federal funding for bicycle and pedestrian projects is the USDOT Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since passage of the Federal-Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty-First Century (MAP-21) was enacted in July 2012 as Public Law 112-141. The Act replaces the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 - June 2012. SAFETEA-LU contained dedicated programs including Transportation Enhancements, Safe Routes to School, and Recreational Trails, all commonly tapped sources of funding to make active transportation alterations nationwide. MAP-21 combines these programs into a single source called the ‘Transportation Alternatives Program (TAP).


MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27 month period between July 2012 and September 2014. A recent congressional bill extended Map-21 authorization through May 2015. It is not possible to guarantee the continued availability of any listed MAP-21 programs or to predict their future funding levels or policy guidance. Nevertheless, many bicycle and pedestrian transportation improvements programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and thus may continue to provide capital for active transportation projects and programs.

In California, federal monies are administered through the California Department of Transportation (Caltrans). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing intermodal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system. There are a number of programs identified within MAP-21 that are applicable to bicycle and pedestrian projects. These programs are discussed on the following pages.
Transportation Alternatives

Transportation Alternatives Program (TAP) is a new funding source under MAP-21 that consolidates three formerly separate programs under SAFETEA-LU: Transportation Enhancements (TE), Safe Routes to School (SR2S and SRTS), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and complete street projects including sidewalks, bikeways, multi-use paths, and rail-trails. TAP funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TAP does not provide a guaranteed set-aside for this activity as SAFETEA-LU did. MAP-21 provides $85.0 million nationally for the RTP.

Eligible activities under the TAP Program include:

1. **Transportation Alternatives** as defined by Section 1103 (a)(29). This category includes the construction, planning, and design of a range of bicycle and pedestrian infrastructure including “on-road and off-road trail facilities for pedestrians, bicyclists, and other active forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990.” Infrastructure projects and systems that provide “Safe Routes for Non-Drivers” is a new eligible activity.


2. **Recreational Trails Program (RTP).** TAP funds may be used to develop and maintain recreational trails and trail-related facilities for both active and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other active and motorized uses. These funds are available for both paved and unpaved trails but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

RTP funds may be used for:

- Maintenance and restoration of existing trails
- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails, including unpaved trails
- Acquisition or easements of property for trails
- State administrative costs related to this program (limited to seven percent of a state’s funds)
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state’s funds)
Under MAP-21, dedicated funding for the RTP continues at FY2009 levels – roughly $85.0 million annually. California will receive $5,756,189 in RTP funds per federal fiscal year through FY2014.


3. Safe Routes to School. There are two separate Safe Routes to School programs administered by Caltrans. There is the federal program referred to as SRTS, and the state-legislated program referred to as SR2S. Both programs are intended to achieve the same basic goal of increasing the number of children walking and bicycling to school by making it safer for them to do so. All projects must be within two miles of primary or middle schools (K-8). The Safe Routes to School Program funds active transportation facilities in conjunction with improving access to schools through the Caltrans Safe Routes to School Coordinator. Eligible projects may include:

- **Engineering improvements.** These physical improvements are designed to reduce potential bicycle and pedestrian conflicts with motor vehicles. Physical improvements may also reduce motor vehicle traffic volumes around schools, establish safer and more accessible crossings, or construct walkways, trails or bikeways. Eligible improvements include sidewalk improvements, traffic calming/speed reduction, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, and secure bicycle parking facilities.

- **Education and Encouragement Efforts.** These programs are designed to teach children safe bicycling and walking skills while educating them about the health benefits, and environmental impacts. Projects and programs may include creation, distribution and implementation of educational materials; safety based field trips; interactive bicycle/pedestrian safety video games; and promotional events and activities (e.g., assemblies, bicycle rodeos, walking school buses).

- **Enforcement Efforts.** These programs aim to ensure that traffic laws near schools are obeyed. Law enforcement activities apply to cyclers, pedestrians and motor vehicles alike. Projects may include development of a crossing guard program, enforcement equipment, photo enforcement, and pedestrian sting operations.

More information: http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm

4. Planning, designing, or constructing roadways within the right-of-way of former Interstate routes or divided highways. At the time of writing, detailed guidance from the Federal Highway Administration on this new eligible activity was not available.
Average annual funds available through TAP over the life of MAP-21 equal $814.0 million nationally, which is based on a 2% set-aside of total MAP-21 authorizations. Projected MAP-21 apportionments for California total $3,546,492,430 for FY2013 and $3,576,886,247 for FY2014 (http://www.fhwa.dot.gov/MAP21/funding.cfm). The 2% set-aside for TAP funds in California will be about $71,000,000 for the next two fiscal cycles. State DOTs may elect to transfer up to 50% of TAP funds to other highway programs, so the amount listed above represents the maximum potential funding. TAP funds are typically allocated through MPOs and require a 20% local match.

**Surface Transportation Program**

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of bicycle and pedestrian improvements are eligible, including on-street bicycle facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded bicycle and pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. 50% of each state’s STP funds are sub-allocated geographically by population. These funds are funneled through Caltrans to the MPOs in the state. The remaining 50% may be spent in any area of the state.

More information:

**Highway Safety Improvement Program**

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides $2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural Roads Program unless safety statistics demonstrate that fatalities are increasing on these roads. HSIP is a data-driven funding program, and eligible projects must be identified through analysis of crash experience, crash potential, crash rate, or other similar metrics. Infrastructure and non-infrastructure projects are eligible for HSIP funds. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. All HSIP projects must be consistent with the state’s Strategic Highway Safety Plan.

More information:
Pilot Transit-Oriented Development Planning

MAP-21 establishes a new pilot program to promote planning for Transit-Oriented Development. At the time of writing, the details of this program are not fully clear; although, the bill text states that the Secretary of Transportation may make grants available for the planning of projects that seek to “facilitate multimodal connectivity and accessibility,” and “increase access to transit hubs for pedestrian and bicycle traffic.”

Transportation Investments Generating Economic Recovery

The Transportation Investment Generating Economic Recovery (TIGER Discretionary Grant Program) provides a unique opportunity for the U.S. Department of Transportation to invest in road, rail, transit and port projects that promise to achieve critical national objectives. The U.S. Congress has dedicated more than $4.1 billion to the program since inception: $1.5 billion for TIGER I, $600.0 million for TIGER II, $526.9 million for FY2011, $500.0 million for FY2012, $473.8 million for FY2013, and $600.0 million for the FY2014 round to fund projects that have a significant impact on the nation, a region or a metropolitan area. The TIGER Discretionary Grant Program's highly competitive process, galvanized by tremendous applicant interest, has allowed USDOT to fund 271 innovative capital projects throughout the nation. Each project is multi-modal, multi-jurisdictional or otherwise challenging to fund through existing programs. The TIGER Discretionary Grant Program enables USDOT to use a rigorous process to select projects with exceptional benefits, explore ways to deliver projects faster and save on construction costs, and make investments in the nation’s infrastructure that make communities more livable and sustainable. Many awards have been made to construct bicycle and pedestrian infrastructure, including projects in Atlanta, GA, Birmingham, AL, Fresno, Indianapolis, IN, and Philadelphia, PA.

Partnership for Sustainable Communities

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to “improve access to affordable housing, provide more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure - “Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.” The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including the TIGER grants). MCOG and Caltrans should track Partnership communications and be prepared to respond proactively to announcements of new grant programs.

More information: http://www.epa.gov/smartgrowth/partnership/
**Rivers, Trails, and Conservation Assistance Program**

The Rivers, Trails and Conservation Assistance Program (RTCA) is the community assistance arm of the National Park Service. RTCA provides technical assistance to communities in order to preserve open space and develop trails. The assistance that RTCA provides is not for infrastructure, but rather building plans, engaging public participation, and identifying other sources of funding for conversation and outdoor recreation projects.

More information: [http://www.nps.gov/pwro/rtca/who-we-are.htm](http://www.nps.gov/pwro/rtca/who-we-are.htm)

**Community Development Block Grants**

The Community Development Block Grants (CDBG) program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal CDBG grantees may “use Community Development Block Grant funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grant funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs.” Trails and greenway projects that enhance accessibility are the best fit for this funding source. CDBG funds could also be used to write ADA Transition Plans.

More information: [www.hud.gov/cdbg](http://www.hud.gov/cdbg)

**Community Transformation Grants**

Community Transformation Grants administered through the Centers for Disease Control (CDC) support community-level efforts to reduce chronic diseases such as heart disease, cancer, stroke, and diabetes. Active transportation infrastructure and programs that promote healthy lifestyles are a good fit for this program, particularly if such improvements benefit groups experiencing the greatest burden of chronic disease.


**National Scenic Byways Program**

The Federal Highway Administration (FHWA), part of the USDOT manages the National Scenic Byways Grant Program, which recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities by providing grants that support projects that manage and protect these roads and improve visitor facilities.

Federal Recovery Act State Fiscal Stabilization Funding

As part of the Federal Recovery Act of 2009, states will be receiving $53.6 billion in state fiscal stabilization funding. States must use 18.2% of their funding – or $9.7 billion – for public safety and government services. An eligible activity under this section is to provide funding to K-12 schools and institutions of higher education to make repairs, modernize, and make renovations to meet green building standards. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System, developed by the U.S. Green Building Council (USGBC), addresses green standards for schools that include bicycle and pedestrian facilities and access to schools. Another $5.0 billion is provided for the Energy Efficiency and Conservation Block Grant Program. This provides formula funding to cities, counties and states to undertake a range of energy efficiency activities. One eligible use of funding is for bicycle and pedestrian infrastructure.


State Sources

Active Transportation Program

With the consolidation of federal funding sources in MAP-21, the California State Legislature has moved to consolidate a number of state-funded programs centered on active transportation into a single program. The resulting Active Transportation Program (ATP) will consolidate the federal programs, Bicycle Transportation Account, the Safe Routes to Schools Program, and the Recreational Trails Program. The ATP’s authorizing legislation (signed into law by the Governor on September 26, 2013) also includes placeholder language to allow the ATP to receive funding from the newly established Cap-and-Trade Program in the future. The Statewide Competitive ATP will have $180 million available statewide for the 2014/2015 and 2015/2016 fiscal cycles. The Regional Competitive ATP will have $30 million available for the Metropolitan Transportation Commission (MTC) region 2014/2015 and 2015/2016 fiscal cycles. The California Transportation Commission writes guidelines and allocates funds for the ATP, while the ATP will be administered by the Caltrans Division of Local Assistance. Goals of the ATP are currently defined as the following:

1) Increasing the proportion of trips accomplished by biking and walking;
2) Increasing safety and mobility for active transportation users;
3) Advancing active transportation efforts of regional agencies to achieve the greenhouse gas reduction goals;
4) Enhancing public health;
5) Ensuring that disadvantaged communities fully share in the benefit of the program; and,
6) Providing a broad spectrum of projects to benefit many types of active transportation users.

More information: http://www.dot.ca.gov/hq/Local Programs/atp/index.html
State Highway Operations & Protection Program

The State Highway Operations and Protection Program (SHOPP) is a four year program that funds projects on the state highway system to maintain and preserve the asset. The program is primarily funded by federal highway trust funds. The federal funds that make up the SHOPP are National Highway Performance Program (NHPP), the Surface Transportation Program (STP), and the Highway Safety Improvement Program (HSIP). The new federal act, Moving Ahead for Progress in the 21st Century (MAP-21), requires that the states implement targets based on performance measures that will be forthcoming. This will dictate how funds need to be programmed based on meeting the targets. The emphasis of the federal bill is to maintain and/or improve the current asset condition and to address the safety needs. The cycle includes identification of rehabilitation and reconstruction needs in the ten year plan, the estimation of available funding in the fund estimate, and finally a financially-constrained portfolio of projects in the four-year SHOPP. As required by statutes, the SHOPP is updated every two years. The SHOPP project funding process is internal to Caltrans. SHOPP projects are originally scoped through the ten year SHOPP plan process. The ten year SHOPP plan has a fiscally-constrained list of program areas that have specific estimated amounts of funding. The determination of the balance of funds for each of the areas is based on federal funding programs, priorities as agreed between the Caltrans and the CTC, and direction from the Caltrans SHOPP Executive Committee. The priorities are:

1. Collision reduction, major damage restoration, and mandates such as ADA and storm water management
2. Pavement, bridge, roadside, and facility preservation
3. Mobility

There is clearly not enough funding to fund the SHOPP needs and thus each category has constrained funding. More information:


Caltrans Planning Grants

Caltrans also administers the Transportation Planning Grant Program that funds projects to improve mobility. In the past year, Caltrans awarded $10.0 million in grant funding to 70 applicants, in two sub-categories: Environmental Justice grants and Community Based Transportation Plan grants.


Environmental Justice Grant Program

The Environmental Justice (EJ) Grant Program promotes the involvement of low-income, minority communities, and Native American tribal governments in the planning for
transportation projects. EJ grants have a clear focus on transportation and community development issues to prevent or mitigate disproportionate, negative impacts while improving mobility, access, safety, and opportunities for affordable housing and economic development. Grants are available to cities, counties, transit districts, and tribal governments.

More information: [http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects_ej.html](http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects_ej.html)

**Community Based Transportation Planning Grant Program**

The Community Based Transportation Planning (CBTP) grant program promotes transportation and land use planning projects that encourage community involvement and partnership. These grants include community and key stakeholder input, collaboration, and consensus building through an active public engagement process. CBTP grants support livable and sustainable community concepts with a transportation or mobility objective to promote community identity and quality of life.

More information: [http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects_cbtp.html](http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects_cbtp.html)

**Petroleum Violation Escrow Account**

In the late 1970s, a series of federal court decisions against selected United States oil companies ordered refunds to the states for price overcharges on crude oil and refined petroleum products during a period of price control regulations. To qualify for Petroleum Violation Escrow Account (PVEA) funding, a project must save or reduce energy and provide a direct public benefit within a reasonable time frame. In the past, the PVEA has been used to fund programs based on public transportation, computerized bus routing and ride sharing, home weatherization, energy assistance and building energy audits, highway and bridge maintenance, and reducing airport user fees. In California, Caltrans Division of Local Assistance administers funds for transportation-related PVEA projects. PVEA funds do not require a match and can be used as match for additional federal funds.

More information: [www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g22state.pdf](http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g22state.pdf)

**Office of Traffic Safety Grants**

The Office of Traffic Safety (OTS) distributes grants statewide to establish new traffic safety programs or fund ongoing safety programs. OTS grants are supported by federal funding under the National Highway Safety Act and MAP-21. Grants are used to establish new traffic safety programs, expand ongoing programs or address deficiencies in current programs. Bicycle safety is included in the list of traffic safety priority areas. Eligible grantees are governmental agencies, state colleges, state universities, local city and county government agencies, school districts, fire departments, and public emergency services providers. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Grants are awarded on a competitive basis, and priority is given
to agencies with the greatest need. Evaluation criteria to assess need include potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants. The California application deadline is January of each year. There is no maximum cap to the amount requested; however, all items in the proposal must be justified to meet the objectives of the proposal.

More information: http://www.ots.ca.gov/Grants/Apply/default.asp

**Environmental Enhancement and Mitigation Funds**

The Environmental Enhancement Mitigation Program (EEMP) provides grant opportunities for projects that indirectly mitigate environmental impacts of new transportation facilities. Projects should fall into one of the following three categories: highway landscaping and urban forestry, resource lands projects, or roadside recreation facilities. Funds are available for land acquisition and construction. The local Caltrans district must support the project. The average award amount is $250,000.

More information: http://www.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm

**Land and Water Conservation Fund**

The Land and Water Conservation Fund is a federal program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. The fund is administered by the California State Parks Department. Cities, counties, and districts authorized to acquire and develop park and recreation space are eligible for grant funding. While non-profits are ineligible, they are allowed to apply in partnerships with eligible agencies. Applicants must fund the project entirely and will be reimbursed for half of the cost. Up to $2.0 million was available in California in the 2012 round of grant funding.

More Information: http://www.parks.ca.gov/?Page_id=21360

**California Strategic Growth Council**

The Strategic Growth Council is a state agency that manages the Sustainable Communities Planning Grant and Incentives Program, as well as the Affordable Housing and Sustainable Communities (AHSC) program. The first program provides grants for development and implementation of plans that lead to significant reductions in greenhouse gas emissions, improve air and water quality, promote public health, promote equity, increase housing affordability, increase infill and compact development, revitalize urban and community centers, protect natural resources and agricultural lands, reduce automobile usage and fuel consumption, improve infrastructure systems, promote water conservation, promote energy efficiency and conservation, and strengthen the economy. The second program provides funding for land use,
housing, transportation, and land preservation projects to support infill and compact development that reduces greenhouse gas emissions.

More information: http://sgc.ca.gov/m_grants.php

Climate Ready Grant Program - California State Coastal Conservancy

Climate Ready grants are intended to encourage local governments and non-governmental organizations to advance planning and implementation of on-the-ground actions that reduce greenhouse gas emissions and lessen the impacts of climate change on California’s coastal communities. The grant program makes eligible “development of multi-use trails with clearly identified greenhouse gas (GHG) reduction goals; (and) protecting and managing open space lands with clearly identified GHG reduction goals.” A total of $1,500,000 is available on a competitive basis, with a minimum award of $50,000 and a maximum of $200,000. The size of awarded grants will be based on each project’s needs, its overall benefits, and the extent of competing demands for funds. Applications were due November 17, 2014. It is not clear whether additional application solicitations will be made.


Regional & Local Sources

Developer Impact Fees

As a condition for development approval, municipalities can require developers to provide certain infrastructure improvements, which can include bikeway projects. These projects have commonly provided Class II facilities for portions of on-street, previously-planned routes. They can also be used to provide bicycle parking or shower and locker facilities. The type of facility that should be required to be built by developers should reflect the greatest need for the particular project and its local area. Legal challenges to these types of fees have resulted in the requirement to illustrate a clear nexus between the particular project and the mandated improvement and cost.

Roadway Construction, Repair and Upgrade

Future road widening and construction projects are one means of providing improved pedestrian and bicycle facilities. To ensure that roadway construction projects provide these facilities where needed, it is important that the review process includes input pertaining to consistency with the proposed system. In addition, California’s 2008 Complete Streets Act and Caltrans’s Deputy Directive 64 require that the needs of all roadway users be considered during “all phases of state highway projects, from planning to construction to maintenance and repair.”

**Utility Projects**

By monitoring the capital improvement plans of local utility companies, it may be possible to coordinate upcoming utility projects with the installation of bicycle and pedestrian infrastructure within the same area or corridor. Often times, the utility companies will mobilize the same type of forces required to construct bikeways and sidewalks, resulting in the potential for a significant cost savings. These types of joint projects require a great deal of coordination, a careful delineation of scope items and some type of agreement or memorandum of understanding, which may need to be approved by multiple governing bodies.

**Cable Installation Projects**

Cable television and telephone companies sometimes need new cable routes within public right-of-way. Recently, this has most commonly occurred during expansion of fiber optic networks. Since these projects require a significant amount of advance planning and disruption of curb lanes, it may be possible to request reimbursement for affected bicycle facilities to mitigate construction impacts. In cases where cable routes cross undeveloped areas, it may be possible to provide for new bikeway facilities following completion of the cable trenching, such as sharing the use of maintenance roads.

**Marin County Measure A**

A one-quarter cent retail transactions and use tax passed as Measure A in November 2012 to care for Marin’s existing parks and open spaces, support regional community parks projects and programs, and further farmland preservation. An expenditure plan guides the use of the funds, as follows:

- 65 percent will be used by Marin County Parks to restore natural resources, maintain county parks and open space preserves, restore and improve public access, and protect natural lands.

- 20 percent will be dedicated to saving family farms and ranches through the purchase of agricultural conservation easements in voluntary transactions and landowners.

- 15 percent will be used by cities, towns, and applicable special districts to enhance and manage parks, nature preserves, recreation programs, and vegetation to reduce wildfire risk.

Several grant programs have been established to distribute funds including the Breathe/Respira Community Grant Program, Marin County Park and Open Space Program, and the City, Town, and Special District Program.

BAAQMD Grants

The Bay Area Air Quality Management District (BAAQMD) established several grant programs aimed at reducing emissions of oxides of nitrogen, reactive organic gasses, and particulate matter.

- Transportation Fund for Clean Air (TFCA) – provides grants to projects that implement the most cost-effective projects in the Bay Area that will decrease motor vehicle emissions, and thereby improve air quality. Projects must be consistent with the 1988 California Clean Air Act and the Bay Area Ozone Strategy.

- Environmental Justice Small Grants Program – provides up to $20,000 in grants to eligible community-based grassroots organizations and federally recognized tribal governments that are located in areas adversely affected by environmental pollution and hazards and are involved in addressing environmental justice concerns.

More information: [http://www.baaqmd.gov/Divisions/Strategic-Incentives/Funding-Sources.aspx](http://www.baaqmd.gov/Divisions/Strategic-Incentives/Funding-Sources.aspx)

MTC Grants

The OneBayArea Grant Program (OBAG) established program commitments and policies for investing roughly $800 million over the four-year Cycle 2 period (FY’s 2012-13 through 2015-16), funded by federal funds authorized by Congress in Moving Ahead for Progress in the 21st Century (MAP 21).

OBAG is a new funding approach that integrates the region’s federal transportation program with California's climate law (Senate Bill 375, Steinberg, 2008) and the Sustainable Communities Strategy. Funding distribution to the counties will consider progress toward achieving local land use and housing policies by:

- Rewarding jurisdictions that accept housing allocations through the Regional Housing Need Allocation (RHNA) process and produce housing using transportation dollars as incentives.

- Supporting the Sustainable Communities Strategy for the Bay Area by promoting transportation investments in Priority Development Areas (PDAs) and by initiating a pilot program that will support open space preservation in Priority Conservation Areas (PCAs)

- Providing a higher proportion of funding to local agencies and additional investment flexibility by eliminating required program investment targets. The OBAG program allows flexibility to invest in transportation categories such as Transportation for
Livable Communities, bicycle and pedestrian improvements, local streets and roads preservation, and planning activities, while also providing specific funding opportunities for Safe Routes to Schools (SR2s) and Priority Conservation Areas.

More information: [http://www.mtc.ca.gov/funding/onebayarea/](http://www.mtc.ca.gov/funding/onebayarea/)

### Private Sources

Private funding sources can be acquired by applying through the advocacy groups such as the League of American Bicyclists and the Bikes Belong Coalition. Most of the private funding comes from foundations seeking to enhance and improve bicycle facilities and advocacy. Grant applications will typically be through the advocacy groups as they leverage funding from federal, state and private sources. Following are several examples of private funding opportunities available.

#### PeopleForBikes Community Grant Program

PeopleForBikes (FKA Bikes Belong) is a coalition of bicycle suppliers and retailers that has awarded $2.5 million in grants and leveraged an additional $650.0 million since its inception in 1999. The program funds small corridor improvements, mountain bike trails, BMX parks, trail, and park access. PeopleForBikes also administers the Green Lane Project, which is a technical support and peer exchange program for U.S. cities working on the installation of protected bicycle lanes and cycle tracks. PeopleForBikes is funded through private donations.


#### Bank of America Charitable Foundation, Inc.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grant program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Program, and specifically the Program Related Investments subcategory. This program targets low- and moderate-income communities and seeks to encourage entrepreneurial business development.


#### The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972, and today, it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To assure that all Americans have access to basic health care at a reasonable cost
• To improve care and support for people with chronic health conditions
• To promote healthy communities and lifestyles
• To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

More information: http://www.rwjf.org/applications/

The Wal-Mart Foundation

The Wal-Mart Foundation offers a Local, State, and National Giving Program. The Local Giving Program awards grants of $250 to $5,000 through local Wal-Mart and Sam's Club Stores. Application opportunities are announced annually in February with a final deadline for applications in December. The State Giving Program provides grants of $25,000 to $250,000 to 501c3 nonprofits working within one of five focus areas: Hunger Relief & Nutrition, Education, Environmental Sustainability, Women's Economic Empowerment, or Workforce Development. The program has two application cycles per year: January through March and June through August. The Wal-Mart Foundation's National Giving Program awards grants of $250,000 and more, but does not accept unsolicited applications.

More information: http://foundation.walmart.com/apply-for-grants

The Kodak American Greenways Program

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants ($250 to $2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying or political activities.

More information: http://www.conservationfund.org

Community Action for a Renewed Environment (CARE)

CARE is a competitive grant program that offers an innovative way for a community to organize and take action to reduce toxic pollution in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them. By providing financial and technical assistance, EPA helps CARE communities get on the path to a renewed environment. Transportation and “smart-growth” types of projects are eligible. Grants range between $90,000 and $275,000.

More information: http://www.epa.gov/care/
Corporate Donations

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Employers recognize that creating places to bike and walk is one way to build community and attract a quality work force. Bicycling and outdoor recreation businesses often support local projects and programs. Municipalities typically create funds to facilitate and simplify a transaction from a corporation’s donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented. Such donations can improve capital budgets and/or projects.

Other Sources

Local sales taxes, fees and permits may be implemented as new funding sources for pedestrian and bicycling projects, such as Measure A approved by voters in 2004. However, any of these potential sources would require a local election. Volunteer programs may be developed to substantially reduce the cost of implementing some routes, particularly multi use paths. For example, a local college design class may use such a multi-use route as a student project, working with a local landscape architectural or engineering firm. Work parties could be formed to help clear the right of way for the route. A local construction company may donate or discount services beyond what the volunteers can do. A challenge grant program with local businesses may be a good source of local funding, in which the businesses can “adopt” a route or segment of one to help construct and maintain it.
Appendix B: Municipal Code

Municipal Code – Bicycle Policies

5.11 - Bikeways.

5.11.002 Requirements.

a. Bikeways shall be provided as an element of any affected permit or approval process when such application bears a direct relationship to a bikeway designated on the Novato General Plan or upon an adopted specific plan.

b. Additionally bikeways shall be provided when required as a condition of approval of any affected permit or approval process where it is determined by the approving authority that such bikeways are necessary in the interests of public safety or convenience.

(Ord. No. 750, § 9.11.002)


Bicycle parking shall be provided for all multi-family projects and non-residential uses in compliance with this Section.

A. Number of Bicycle Spaces Required.

1. Multi-family projects shall provide bicycle parking spaces equal to a minimum of 10 percent of the required vehicle spaces, unless separate secured garage space is provided for each unit. The bicycle spaces shall be distributed throughout the project.

2. Retail commercial uses shall provide bicycle parking spaces equal to a minimum of five percent of the required vehicle spaces, distributed to serve customers and employees of the project.

3. Other non-residential uses providing employment shall provide bicycle parking spaces equal to a minimum of 10 percent of the required vehicle spaces, distributed to serve employees and visitors to the project.

4. Places of public assembly shall provide bicycle parking spaces equal a minimum of 10 percent of the required vehicle spaces, distributed to serve customers, visitors, and employees.

B. Bicycle Parking Design and Devices.

1. Parking Equipment. Each bicycle parking space shall include a stationary parking device to adequately secure the bicycle.

2. Parking Layout

   a. Aisles providing access to bicycle parking spaces shall be at least five feet in width.
b. Each bicycle space shall be a minimum of two feet in width and six feet in length, and have a minimum of seven feet of overhead clearance.

c. Bicycle spaces shall be conveniently located and generally within proximity to the main entrance of a structure.

d. Bicycle spaces shall be separated from motor vehicle parking spaces or aisles by a fence, wall, or curb, or by at least five feet of open area, marked to prohibit motor vehicle parking.

C. Required Shower Facilities. All new buildings and additions to existing buildings that result in a total floor area as shown in the following table shall be required to provide showers and dressing areas for each gender as shown in the following table:

<table>
<thead>
<tr>
<th>Type of Land Use</th>
<th>Number of Showers Required for Specified Building Floor Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Shower for Each Gender</td>
</tr>
<tr>
<td></td>
<td>1 Additional Shower for Each Gender</td>
</tr>
<tr>
<td>Office Uses (business, professional)</td>
<td>50,000 to 149,999 sf</td>
</tr>
<tr>
<td></td>
<td>Each 100,000 sf over 150,000</td>
</tr>
<tr>
<td>Retail Trade, Service Uses</td>
<td>100,000 to 299,999 sf</td>
</tr>
<tr>
<td></td>
<td>Each 200,000 sf over 300,000</td>
</tr>
<tr>
<td>Manufacturing and Industrial Uses</td>
<td>50,000 sf or more</td>
</tr>
<tr>
<td></td>
<td>N.A</td>
</tr>
</tbody>
</table>

D. Required Locker Facilities. Land uses required by this Section to provide bicycle parking spaces shall also provide one locker for each required bicycle parking space. Required lockers shall be located in relation to required showers and dressing areas to permit access to locker areas by either gender.

E. Required Bicycle/Pedestrian Paths. Land uses required to provide bicycle parking spaces shall provide bicycle and pedestrian paths to and from the required parking and locker facilities; access across the site frontage; and provide connections through the interior of the site to any adjacent public open space, rights-of-way, park or community facilities.

(Ord. No. 1576, § 2 (Exh. A, amd.) , 10-23-2012)

18-7.2 Stopping, Standing or Parking on Parkways, Bicycle Lanes, Bicycle Paths or Horse Trails. No person shall stop, stand or park a vehicle on any parkway, bicycle lane, bicycle path or horse trail.

(Ord. No. 758, § 30)

18-14 - Trip Reduction

An employer trip reduction program may include, but is not limited to, any or all of the following services, incentives and measures.

e. Bicycle and pedestrian:

1. Bicycling financial subsidies or rewards;

2. Financial subsidy to employees for the purchase of bicycles for commute trip use;
3. Bicycle lockers or other secure, weather-protected bicycle parking facilities;
4. Bicycle access to building interior;
5. Bicycle and/or walking route information;
6. On-site bicycle registration.

f. On-site facilities/services:
   1. Employee shower facilities and clothes lockers;
   2. Site modifications that would encourage walking, transit, carpool, vanpool, and bicycle use;
   3. On-site services to reduce midday vehicle trips, e.g., cafeteria, ATMs, apparel cleaning, etc.;
   4. On-site transportation fair to promote commute alternatives.

19.28.040 - Landscape Standards
5. Safety Requirements. Landscape materials shall be located so that at maturity they do not:
   a. Interfere with safe sight distances for vehicular, bicycle, or pedestrian traffic;
   b. Conflict with overhead utility lines, overhead lights, or walkway lights; or
   c. Block pedestrian or bicycle ways.

**Municipal Code – Pedestrian Policies**

5-34 - Pedestrian Circulation
5-34.002 Requirement. Sidewalks, walkways and/or paths shall be provided as an element of each use or development.
5-34.008 Standards.
a. Sidewalks.
1. Where Required.
   (a) Sidewalks shall be provided on both sides of all streets in industrial, office and commercial areas.
   (b) Sidewalks shall be required on both sides of all streets in residential areas where the average street frontage is less than 150 feet per unit taking access from the street.
   (c) Sidewalks shall be provided on one side of all streets in residential areas where the average street frontage is more than 150 feet but less than 250 feet per unit taking access from the street.
(d) Sidewalks may be required along streets where they are otherwise not required, by (a), (b), (c) above, if known or projected pedestrian traffic volumes support such a requirement.

2. Design.

(a) Widths. Sidewalks shall be at least four feet wide in residential, office and industrial areas and at least eight feet wide in commercial areas. In areas with potentially high volumes of pedestrian traffic, such as near schools or places of public assembly, additional width may be required.

(b) Paving. Sidewalk paving shall be four inches of Portland cement concrete, where Portland cement concrete curbs and gutters are also to exist, and two inches of asphalt concrete over four inches of base rock where no concrete curb and gutters are to exist.

(c) Alignment. Sidewalks shall be adjacent to the edges of the street when a curb is also provided. Where no curb is provided sidewalks may be separated from the street but shall be located within the street right-of-way.

(d) Obstructions. Obstructions such as utility boxes, poles, grates, covers (except for such covers as specifically permitted by the city engineer) and fire hydrants shall not be located within the required width section of a sidewalk.

(e) Wheelchair Ramps. Wheelchair ramps (depressed curb sections) shall be provided at all street intersections and at all other designated street crossing points, whenever sidewalks are required for both sides of a street.

(f) Sidewalks shall be in conformance with the latest regulations for handicapped access adopted by the Office of the State Architect.

**General Plan – Bicycle and Pedestrian Objectives and Policies**

From the Transportation Chapter:

**TR Objective 1** Help reduce regional traffic growth.

**TR Policy 2** Regional Alternatives to the Single-Occupant Vehicle. Support regional transportation policies and programs that increase the use of public transit, carpools, bicycles and other alternative modes of transportation and limit the growth of single-occupant vehicle traffic.

**TR Objective 3** Ensure that the transportation system contributes to the quality of life of the community.

**TR Policy 10a** Retain the existing no-access strip at the terminus of Clasing Avenue to preclude vehicular, bicycle and pedestrian access from Landing Court.

**TR Objective 4** Develop a circulation system that is safe and efficient.

**TR Policy 12** Continuation of Streets. Facilitate the continuation of streets and bicycle and pedestrian paths through developments wherever reasonable and feasible.
TR Objective 6 Make it easier and safer for people to travel by bicycle and on foot.

TR Policy 20 Comprehensive Bicycle Path System. Establish a comprehensive and safe system of bicycle routes that connects all parts of the City.

TR Policy 21 Bicycle Parking. Promote and provide adequate bicycle parking at public transit facilities, Park-and-Ride lots, schools, the library, parks, city offices, and commercial areas, as feasible.

TR Policy 22 Pedestrian Facilities. Promote, provide, and maintain a safe and convenient pedestrian system

From the Environment Chapter:

EN Objective 14 Provide an attractive and comprehensive system of parks and trails throughout the city to meet the recreational needs of the entire community.

EN Policy 48 Greenways. Provide a system of greenways, consisting of natural lands, wildlife corridors, open space, watersheds, forests, landscaped borders, and landscaped pathways for pedestrians and bicycles. Greenways should connect major open space areas, and habitat areas including perimeter open space, creeks, Stafford Lake, O'Hair Park, and Scottsdale Pond, with the developed parts of the City.

From the Community Identity Chapter:

CI Objective 4 Encourage compact development that reduces the need for annexations and urban sprawl.

CI Policy 8 Pedestrian-Oriented Land Uses. Encourage pedestrian-oriented, rather than auto-dependent uses in areas such as Downtown, Ignacio, and other activity centers where mixed uses, shared parking (on- and off-street), transit service, and other conditions facilitate pedestrian circulation.

CI Objective 6 Improve the appearance and effectiveness of outdoor lighting and reduce conflicts related to lighting.

CI Policy 15 Pedestrian Paths. Provide for maximum feasible pedestrian circulation. Pedestrian paths and walkways should connect residential areas, parking facilities, schools and commercial areas.

CI Objective 10 Improve the appearance and attractiveness of the Downtown.

CI Policy 26 Pedestrian Movement. Encourage a pedestrian-friendly Downtown with outdoor seating.
Appendix C: Bicycle Parking Guidelines

The goal of the Bicycle Parking Guidelines is to provide secure bicycle parking, typically through the installation of bolted or embedded ‘U’ type racks and/or bicycle lockers located at specific bicycle destinations to encourage increased bicycle use.

Basic Bicycle Rack & Locker Provisions

1. Bicycle parking guidelines are included at www.walkbikemarin.org in the Bicycle Parking Guidelines recommended by the Association of Pedestrian and Bicycle Professionals.
2. Bicycle racks shall be permanently anchored and tamper-proof bolts should be used where appropriate.
3. Bicycle racks should be compact and attractive as street furniture and coated to minimize damage.
4. Parking racks/lockers must be placed close enough to user destinations (such as public or employee entrances) to encourage their use, i.e. closer than automobile parking if possible since secure bicycle parking needs to be competitive with the other transportation alternatives.
5. Parking devices are to be placed so as not block or diminish accessibility to sidewalks, entrances, etc.
7. The recipient is encouraged to use the bicycle parking supplier used by the City of Novato (www.madrax.com, ‘U’ Rack), Town of Fairfax (www.bicycleparking.com, WSH36), or a supplier of their choice (see Exhibit D) to purchase and install the agreed upon bicycle parking infrastructure.
8. Parking racks/lockers must be placed according to the minimum space requirements provided for in these guidelines, with adequate room for cyclists to maneuver their bicycles in and out of place. Racks/lockers must be well secured to an immovable object (e.g. the ground or wall). It is preferred that bicycle parking will be placed in a sheltered area with easy access for cyclists.
9. Bicycle lockers are intended for destinations where long-term storage is required, where access is restricted, or weather protection is necessary.
10. Bicycle racks and lockers are to be installed per supplier recommendations.
11. Bicycle racks shall be located away from traffic and delivery vehicles and in cases where this is not possible, then bollards or raised concrete slabs are acceptable to protect them from damage.
12. Bicycle parking directional signage should be considered as appropriate.
Basic Bicycle Cage Provision

1. Bicycle cages should be secure and it is recommended that they include a cover or cage top.
2. Bicycle cages are ideal for locations where bicycle users arrive in and leave en masse at regular times.
3. Chain link is an acceptable material for day use, but if the users are expecting to leave their bicycle overnight, the cage material may need to be stronger.
4. Bicycle cage subsidies will be agreed upon based on the applicant’s design.
Exhibit A: Bicycle Rack Designs and Specifications

GENERAL NOTES

1. Bicycle racks are to be of the “inverted U” style with either a semi-circle or flat top, similar to the cycle-safe U2™ model or the Dero hoop rack or approved equal.
2. Bicycle rack shall be a minimum of schedule 40 pipe.
3. Bicycle rack shall be mounted with an embedded anchor mount or flanged surface mount. Flange mounted installations must use vandal/theft resistant bolts.
4. Bicycle rack and rack clearances shall not interfere with ADA pedestrian clearances.
5. Bicycle rack may be color treated if desired, with color scheme subject to City approval to ensure color compatibility.
6. The City recommends the application of stickers or decals to the bike racks demonstrating proper use of the “inverted U” style bike rack.

STANDARD BICYCLE RACK
Spacing for Bike Bars

Spacing Between Racks:
Each bike bar accommodates two bicycles, and requires a total “foot print” space 2'x6'. Aisles between the foot prints should be at least 1' wide, and 2' aisles are preferred. Bars should be centered in the foot print space.

Spacing Between Racks and Building when Bikes Are Parallel to Building:
When bicycles will be parked parallel to a building, bike bars should be located at least 3' from the obstruction to allow for maneuvering handlebars between the locking devices and the building.

Spacing Between Racks and Curb When Bikes Are Parallel to Curb:
When bicycles will be parked parallel to a curb, bike bars should be at least 2' from the curb.

Spacing Between Racks and Obstruction When Bikes Are Perpendicular to Obstruction:
When bicycles will be parked perpendicular to a building, curb, or other obstruction, locking devices may be located as shown in the diagram at left.

Spacing When Racks Are Placed in a Diagonal Formation:
When bicycle bars will be placed diagonally to a building or other obstruction the angle may be varied; however, the bike parking area must still maintain a 2'x6' footprint and the aisles between the footprints should be at least 1' but preferably 2'.

EXHIBIT B
Locked Room or Cage

To the left is an example of an interior bicycle storage room. Notice the cyclone fence enclosure. This facility has electronic locks activated by the user’s security fob. There are men’s and women’s locker rooms with showers located adjacent to this enclosure and accessed from within.

A fully enclosed room or a cage should be covered by industrial grade chain link or equivalent. It should also have a heavy-duty combination or tumbler lock on the entrance. Bicycle parking as shown below is provided within to economize parking spaces yet still provide bicycle security. Unless bicycles can be wheeled straight in from door to parking stall, there should be a 60 inch wide aisle inside the enclosure that allows bikes to be maneuvered in and out.

Double-decker

Inverted U rack

Space Saver vertical racks
Appendix D: Shared-use Path and Trail Etiquette

Notifying bicyclists, pedestrians, skaters, equestrians, and other users of acceptable behavior and etiquette is a common issue on a shared-use paths and trails. The purpose of a code of conduct is to promote user safety and enhance enjoyment for all. Yielding the right-of-way is not only a courtesy, but a necessary part of a safe path and trail experience.

Existing Path and Trail Rules

The Marin County Code includes ordinances for path and trail use and are shown in the table below. Important elements include a) the classification of shared-use paths as “parks,” b) the delegation of enforcement to any authorized department employee, official designee or peace officer, and c) the application of the California Vehicle Code.

Marin County Code – Trails and Paths

<table>
<thead>
<tr>
<th>Code Location*</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.05.050 - Bicycles</td>
<td>No person shall operate any bicycle or similar vehicle within parks except upon paved roads, fire protection roads, designated bicycle pathways or public roads not signed against such use. Furthermore, no person shall operate or possess any bicycle or similar vehicle elsewhere within parks, including trails, unless signed specifically to permit such operation.</td>
</tr>
<tr>
<td>10.05.040 – Speed limits</td>
<td>No person shall operate any land vehicle, including bicycles, at speeds in excess of fifteen miles per hour within parks, unless otherwise posted. No vehicle shall be operated at a speed greater than is reasonable for safe operation, nor in any manner which may endanger the safety of others or the protection of facilities and environmental resources.</td>
</tr>
</tbody>
</table>
| 10.05.050 – Parking and vehicle removal | No person shall park, leave, abandon, possess or otherwise store any vehicle within parks, except in locations designated for such use. No person shall park any vehicle within parks during periods when parking areas or lands are closed, nor in the following locations:
  A. Within the traveled portion of any road;
  B. On any service road or trail;
  C. In front of any gate;
  D. On any undisturbed or natural hillside;
  E. In areas designated for persons with disabilities, unless the person has appropriate authorization;
  F. In more than one parking space per vehicle;
  G. Within posted “no parking” areas;
  H. In a manner that obstructs the use of a boat ramp;
  I. In any manner obstructing the free flow of traffic.

Except in designated overnight parking areas, no person shall park any vehicle for more than twelve consecutive hours. Any enforcement officer mentioned in California Vehicle Code Section 22651 is authorized to remove any vehicle
parked in violation of this section.

Except as otherwise provided in these regulations, the provisions of the California Vehicle Code shall be applicable to the operation of vehicles within parks.

Any person operating a bicycle or motorized bicycle within the County of Marin shall comply with all provisions of the California Vehicle Code which pertain to bicycles and motorized bicycles.

The provisions of Section 21201 of the Vehicle Code requiring lighting equipment on highways shall apply to the operation of bicycles on a paved bicycle path or paved multipurpose recreational trail within the County of Marin.

Any person operating a bicycle on a multipurpose recreational trail shall yield the right-of-way to pedestrians and horses.

a) It shall be unlawful for any person to operate, ride, propel or park a motorized bicycle on any county multipurpose recreational trail or bicycle trail, except the bike paths from:
   1. Gate Six in Sausalito to the former Marin County Heliport;
   2. The west shoulder of Highway 101 from Lincoln Avenue to Los Ranchitos Road; and
   3. The west shoulder of Highway 101 from Miller Creek Road to Alameda Del Prado; and
   4. Highway 37 to Hamilton Drive.

b) Any motorized bicycle which is authorized to be operated on a multipurpose recreational trail or bicycle trail shall not exceed a maximum speed of fifteen miles per hour on said trail.

c) For the purposes of this section, vehicles not registered with the department of motor vehicles being used by and designed primarily for the purpose of assisting persons with disabilities are exempted.

Any employee of the Marin County fire department or any other duly constituted public agency having jurisdiction over a fire trail or hiking trail, shall be deemed to be a peace officer for the purpose of enforcing this chapter. ³

No school, club or other organization shall hold running, jogging, or cross-country meets, events or practice sessions on district lands without prior written approval of the district. No person shall run or jog in such a way as to

³ "Parks" as referred to in this code means any park, playground, bicycle and multi-use path, recreation center or any other area or facility owned or managed by the county and devoted to active or passive recreation. Marin County Municipal Code 10.01.030 - Definitions.
<table>
<thead>
<tr>
<th>Code Location*</th>
<th>Code</th>
</tr>
</thead>
</table>
| 2.02.080 – Games and miscellaneous activities. | No person shall engage in games or other activities which interfere with others using district lands or which endanger property, public safety or environmental resources. Non-permitted activities include:  
A. Participating in volleyball, baseball, softball, soccer, football and other similar organized sports;  
B. Participating in bicycle races;  
C. Hitting golf balls;  
D. Operating self-propelled model airplanes, boats, automobiles or other model craft;  
E. Throwing, releasing or discharging missiles, rockets, stones, paintballs or other similar projectiles;  
F. Hang-gliding, paragliding or parachuting;  
G. Operating or landing aircraft of any nature;  
H. Skateboarding, roller skating, in-line skating or any similar activity;  
I. Participating in any activity or operating any device in such fashion which interferes with others using district lands or endangers property, public safety or environmental resources. |
| 02.03.035 – Tools and trail building equipment. | No person shall possess, use or carry while on district lands any shovel, rake, pick, mattock, Pulaski, or other trail building equipment without prior written approval of the district. |
| 02.04.020 – Bicycles and similar vehicles. | No person shall operate any bicycle on district lands except upon fire protection roads, designated bicycle pathways or public roads not signed against such use. Furthermore, no person shall operate or possess any bicycle else here on district lands, including trails, unless signed specifically to permit such possession. All person operating a bicycle on district lands during hours of darkness shall carry and use a lamp which emits a white light visible from a distance of three hundred feet. No person shall operate or possess roller-skates, inline skates, grass skates, or any self-propelled or motorized skateboard, scooter or other similar device on district lands. |
| 02.04.040 – Speed limits. | No person shall operate any land vehicle, including bicycles, at speeds in excess of fifteen miles per hour unless otherwise posted. Bicycles and similar vehicles shall slow to five miles per hour when passing others or approaching blind turns. No person shall operate any watercraft or other vessel in excess of five miles per hour. No vehicle, including bicycles shall be operated at a speed greater than is reasonable for safe operation, no in any manner which may endanger the safety of others or the protection of environmental resources. |
| 02.04.050 – Right-of-way | All person operating vehicles on district lands, including bicycles, shall yield the right-of-way to hikers and equestrians. Hikers shall yield the right-of-way to equestrians. District and emergency vehicles have the right-of-way on district lands at all times. |
| 02.05.010 - Dogs and other animals. | Dogs and other domestic animals are allowed on District lands when under the direct and immediate control of a responsible person. Up to three dogs per |
individual are allowed, with exceptions beyond that number granted only through issuance by the District General Manager of a Special or Commercial Use Permit. On maintained and designated fire protection roads three dogs off-leash per individual are allowed. In all other areas, dogs and other domestic animals must be fastened to and restrained by a chain or leash not exceeding six feet in length. No person shall do any of the following on District lands:

a) allow any dog or other domestic animal to enter environmentally sensitive or restricted areas of District lands;

b) allow any dog or other domestic animal to interfere with, bother or disturb others using District lands;

c) allow any dog or other domestic animal to hunt, pursue or harass other animals or wildlife;

d) bring or keep a noisy, vicious or dangerous dog or other animal;

e) bring or keep a dog four months of age or more without proof that the dog has a valid rabies inoculation and a valid license;

f) fail to promptly remove from District lands any dog or other domestic animal after being ordered by District personnel to do so.

g) allow excrement from dogs under their control to remain on District land.

h) bring dogs or other domestic animals onto district lands without possessing a chain or leash not exceeding six feet in length for each dog or animal so that they shall be prepared to restrain their animals, if necessary.

* County of Marin Municipal Code (2014)
Proposed Shared-use Path and Trail Guidelines

In addition to the rules, this plan also proposes additional guidelines for path and trail users. As paths and trails become more popular and congested, they can also become more hazardous. These guidelines will help users behave safely and courteously to make for an enjoyable experience for all. Some of the items in the code of conduct are based on the existing and proposed path and trail rules, but are rephrased into simpler sentences.

The table below shows the proposed path and trail guidelines:

<table>
<thead>
<tr>
<th>Rule*</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be Courteous and Predictable</td>
<td>Bicyclists always yield to pedestrians. The speed limit is 15 mph, and &lt;10mph when passing pedestrians. No vehicle shall be operated at a speed greater than is reasonable for safe operation, nor in any manner which may endanger the safety of others of the protection of facilities and environmental resources.</td>
</tr>
<tr>
<td>Don’t Block the Trail</td>
<td>Ride, walk, or run no more than two abreast and single file when passing others. When stopping, move off of the trail. Beware of others approaching you from behind and make sure they know you are pulling over.</td>
</tr>
<tr>
<td>Keep Right</td>
<td>Stay as near to the right side of the trail as is safe, except when passing another user.</td>
</tr>
<tr>
<td>Pass on the Left</td>
<td>Pass others, going your direction, on their left. YIELD TO SLOWER AND ONCOMING TRAFFIC. Use hand signals to alert those behind you of your moves. Look ahead and back to make sure the lane is clear before you pull out and pass. Pass with ample separation and do not move back to the right until safely past. REMEMBER: KIDS AND PETS CAN BE UNPREDICTABLE.</td>
</tr>
<tr>
<td>Give Audible Warning BEFORE Passing</td>
<td>Give a clear signal by announcing “on your left” and ringing bell before passing.</td>
</tr>
<tr>
<td>Obey All Traffic Signs and Signals</td>
<td>Use extra caution where trails cross streets. Stop at all STOP signs and intersections and be cautious when crossing driveways. When entering or crossing a trail yield to traffic already on the trail.</td>
</tr>
<tr>
<td>Use Lights at Night</td>
<td>If on a trail at any time from dusk to dawn, make yourself visible to others.</td>
</tr>
<tr>
<td>Keep Animals Safe and under Control</td>
<td>Keep pets on a short leash less than six feet long. Walk pets on the right-hand shoulder and be aware of the potential hazard of leashes for passing bicyclists, skaters, and equestrians. Clean animal waste from the trail.</td>
</tr>
<tr>
<td>Have You Outgrown Trails?</td>
<td>Trails have engineering and design limits. If your speed or style endangers other users, check for alternative routes better suited to your needs. Selecting the right location is safer and more enjoyable for all concerned.</td>
</tr>
</tbody>
</table>

* Alta Planning + Design; International Bike Fund (http://www.ibike.org/education/trail-sharing.htm)
Education and Awareness

The education of path and trail users is a critical part of creating a safe environment for all users. A code of conduct should be clearly posted at path and trail access points and intersections. Additionally, informational signs can help communicate basic etiquette along the way, such as the two examples shown below.

![Bikes yield to pedestrians; Crescent Trail, Bethesda, MD; photo by Stuart Macdonald, 16 June 2007](image1)

![Walkers keep right, cyclists pass on the left on West River Parkway, Minneapolis; photo by Stuart Macdonald, 29 Oct 2010](image2)

Educational curricula, similar to Safe Routes to School programs, could be used to encourage safe practices by various path and trail users. Below is an example brochure from the City of Portland’s Share the Path campaign. The brochure communicates trail etiquette using illustrations and captions, which are easy to read and understand. Marin County Parks will be launching a new safety, education, and etiquette campaign regarding shared-use paths. This campaign is expected to launch in May 2015.

![Share the Path campaign, City of Portland](image3)
A kickoff campaign can be used to advertise the new etiquette guidelines. The City of Atlanta held the #BeltLineCharm campaign to remind users of the Atlanta BeltLine shared-use path to be safe while walking and biking. Volunteers held up positive, humorous and attention-grabbing signs along the trail reminding users of appropriate trail etiquette. Examples from the #BeltLineCharm campaign are shown below.

Source: [www.beltline.org/beltlinecharm](http://www.beltline.org/beltlinecharm)
The City of Novato is considering application to League of American Bicyclists for designating the city as a “Bicycle Friendly Community”. The Bicycle Friendly Community (BFC℠) program provides a roadmap to improve conditions for bicycling and the guidance to implement Novato’s vision for a better, bikeable community a reality.

A BFC welcomes bicyclists by providing safe accommodations for bicycling and encouraging people to bike for transportation and recreation. Making bicycling safe and convenient are keys to improving public health, reducing traffic congestion, improving air quality and improving quality of life.

The program provides guidance and benchmarking for building a Bicycle Friendly Community, the application itself is a rigorous and an educational tool in itself. Since its inception, more than 800 communities have applied for the five levels of the award – diamond, platinum, gold, silver and bronze — providing a clear incentive for communities to continuously improve.

Each Bicycle Friendly Community℠, Bicycle Friendly Business℠ and Bicycle Friendly University℠ recognized by the League is different. Each with their own natural benefits and challenges — from climate and topography to culture and population density. But there are essential elements across five categories — known as the Five E’s — that are consistent in making great places for bicycling.

THE 5 E’S

Engineering: Creating safe and convenient places to ride and park
Education: Giving people of all ages and abilities the skills and confidence to ride
Encouragement: Creating a strong bike culture that welcomes and celebrates bicycling
Enforcement: Ensuring safe roads for all users
Evaluation & Planning: Planning for bicycling as a safe and viable transportation option

The following diagram is a visual tool for differentiating the various levels, and the criteria for each.
City staff has recommended the City make the application to have the League of American Bicyclists evaluate Novato as is, and then assess the cost impacts of making the improvements needed to receive the various levels of award. The item would be brought to the City Council in the form of a Capital Improvement Project that would compete with other needed City projects for available funding.

WALK FRIENDLY COMMUNITIES PROGRAM

Walk Friendly Communities is a national recognition program developed to encourage towns and cities across the United States to establish or recommit to prioritizing safe walking environments. The program recognizes communities that are working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort. Funding for the program comes from FedEx and the U.S. Department of Transportation Federal Highway Administration, and maintenance of the program comes from the University of North Carolina’s Highway Safety Research Center.

Communities can apply to the program to receive recognition in the form of a Bronze, Silver, Gold, or Platinum designation. By applying for a Walk Friendly Community designation, your community will receive specific suggestions and resources on how to make needed changes for pedestrian safety. Through the questions in the assessment tool, your communities will be able to identify the areas of needed improvements that can form the framework for your comprehensive pedestrian improvement plan.

To apply, community members and individuals from multiple agencies must work collaboratively. The program recommends that there be one application coordinator to oversee the process. Applications are accepted twice a year: May 1st – June 15th and November 1st – December 15th. There is no cost to apply for
Walk Friendly Community designation, but the program estimates that it requires a time commitment of approximately 20-60 hours.

To get started, the application coordinator should download the Walk Friendly Community Assessment Tool which contains the questions and resources needed to complete the online application. The program suggests the application coordinator familiarizes himself or herself with the individuals and departments that will need to provide input on the application. Additionally, the applicant can fill out the application online and save as he or she progresses and can assess the Walk Friendly Community resources through their online Resource page.
Appendix F: Priority Project Details

City of Novato
Atherton Avenue - US 101 Overpass Active Transportation Alterations

STUDY AREA AND PROJECT CONCEPTS

Legend
- High-Visibility Crosswalk
- NWPRA
- Proposed Sidewalk
- Existing Class II Bike Lane
- Proposed Class II Bike Lane
- Proposed Conflict-Zone Markings
- Existing Trail
- Proposed Trail Re-Alignment

Existing aerial view of project concepts: San Marin Drive/Atherton Avenue from Redwood Boulevard to Bay Tree Hollow (not to scale)

Overpass Cross Sections

Existing Cross Section*
(Looking Eastbound)

Concept Cross Section*
(Looking Eastbound)

*All concepts are preliminary in nature and show approximate dimensions.
Existing Conditions

The conditions that make the Atherton Avenue - US 101 Overpass difficult to travel by walking or bicycling include:

- The travelway possesses a high vehicular capacity with seven vehicular travel lanes at its widest section, as well as multiple high-volume on- and off-ramps.
- It contains no bicycle facilities; existing bicycle facilities end at Redwood Boulevard just west of the overpass and just east of the overpass near Bay Tree Hollow.
- Pedestrian safety concerns result from long crossing distances and low pedestrian visibility at crosswalks.
- Wide turning radii for vehicles onto Atherton Avenue allow high speed right-turning movements and create opportunities for conflicts between motor vehicles, bicyclists, and pedestrians.

Project Description

A need exists for enhanced east-west bicycle and pedestrian connectivity along Atherton Avenue between Binford Road and Redwood Boulevard to improve access to nearby schools, parks, trails, and planned SMART station. Project elements include:

- Reducing turning radii at 11 corners.
- Re-striping the Atherton Avenue - US 101 Overpass with eastbound and westbound buffered bicycle lanes (approximately 0.45 miles total).
- Adding green lane markings to denote conflict zones for bicyclists at intersections.
- Re-striping all crosswalks as high-visibility.
- Widening the existing pedestrian refuge island on the west leg of the Atherton Avenue and Redwood Boulevard intersection.
- Connecting the proposed buffered bicycle lane to the existing trail east of US 101 through a minor trail re-alignment.
- Constructing sidewalks east of US 101.

Cost Estimate

(CSW)

Design .............................................................................................................................................$76,000
Environmental Planning and Permitting ......................................................................................$64,000
Property Acquisition ......................................................................................................................$50,000
Construction Management .........................................................................................................$51,000
Construction .................................................................................................................................$606,000
Contingency ..................................................................................................................................$212,000

Total Cost .................................................................................................................................$1,059,000
City of Novato
Novato Boulevard Sidewalk - Stafford Lake Park Extension

Study Area

Novato Boulevard Cross Section

Existing Cross Section* (Looking Westbound)

Path  Gravel  Shoulder  Eastbound Travel Lane  Turning Travel Lane  Westbound Travel Lane  Bike Lane  Sidewalk

5'  5'  5'  11'  11'  11'  5'  4.5'

Concept Cross Section* (Looking Westbound)

Multi Use Path  Landscape Strip  Eastbound Travel Lane  Turning Travel Lane  Westbound Travel Lane  Bike Lane  Sidewalk

12'  5'  11'  11'  11'  5'  4.5'

*All concepts are preliminary in nature and show approximate dimensions.
Existing Conditions

Novato Boulevard between Sutro Avenue and the western city limits is a key east-west route for bicyclists and pedestrians. The 1/2 mile segment can be separated into two different sections:

Western Residential (1/4 mile)
- Center dual-turning lane with westbound right-turn pockets for two residential streets and one eastbound right-turn pocket for a parking lot to a dog park.
- The westbound travel lane possesses a sidewalk and Class II bike lane with faded pavement colors.
- The eastbound travel lane possesses a shoulder and path with tree obstructions and maintenance needs.
- No physical separation between travel lane and westbound bicycle lane.
- Eastbound and westbound bicycle lanes are adjacent to traffic with no buffer or markings across intersections.

Eastern Farm and Commercial (1/4 mile)
- Westbound path begins at Sutro Avenue and transitions to sidewalk 300' before Sandy Creek Way; eastbound path runs the entire length of the segment.
- One lane of traffic in each direction, with a westbound Class II bicycle lane.
- Eastbound path is too narrow to accommodate both pedestrians and bicyclists at the same time.

Project Description

There is a need to improve bicycle and pedestrian safety and connectivity on the Novato Boulevard corridor. The existing Class II bike lanes are inadequate for use by the numerous school children in the area. Project recommendations include:
- Construct an eastbound 12-foot wide multi-use path that is elevated and separated from the eastbound travel lane by a 5-foot landscaped buffer (approximately 0.55-mile in length); may require right-of-way acquisition.
- Re-stripe westbound bicycle lanes (approximately 0.55-mile).
- Stripe six high-visibility continental crosswalks to improve connectivity to the new multi-use path.

Cost estimate

(CSW)
Design..................................................$128,000
Environmental Planning and Permitting..................................................$106,000
Property Acquisition..................................................$290,000
Construction Management..................................................$85,000
Construction..................................................$1,063,000
Contingency..................................................$418,000

Total Cost..................................................$2,090,000
Appendix G: Plan Adoption

City of Novato Bicycle / Pedestrian Plan was adopted by Novato City Council on March 24, 2015.

Councilmember Lucan moved, Seconded by Councilmember Athas, to Approve Resolution No. 1515 (see attached) adopting the City of Novato Bicycle/Pedestrian Plan 2015. The motion was carried 4-0-1, with Councilmember Kellner being absent.
CITY COUNCIL OF THE CITY OF NOVATO

RESOLUTION NO. 15-15

RESOLUTION ADOPTING THE CITY OF NOVATO BICYCLE / PEDESTRIAN PLAN 2015

WHEREAS, the City of Novato adopted its first Bicycle and Pedestrian Master Plan in 1995; and

WHEREAS, an agency’s Bicycle and Pedestrian Master Plan must be updated and adopted every five years in order for the agency to remain eligible to apply for numerous grants, such as the Bicycle Transportation Account grant; and

WHEREAS, on September 25, 2007 the 1995 Bicycle and Pedestrian Master Plan was updated and adopted as the 2007 Bicycle and Pedestrian Master Plan; and

WHEREAS, on June 18, 2013, the City Council readopted the 2007 Bicycle and Pedestrian Master Plan; and

WHEREAS, the City of Novato Bicycle / Pedestrian Plan 2015 was developed in conjunction with the Transportation Authority of Marin (TAM), City staff, the Bicycle and Pedestrian Advisory Committee (BPAC) and City Council; and

WHEREAS, the City of Novato Bicycle / Pedestrian Plan 2015 Plan was developed to be consistent with regional and state requirements in addition to Novato’s General Plan; and

WHEREAS, at their March 11, 2015 meeting, the Bicycle and Pedestrian Advisory Committee voted to recommend that the City Council adopt the City of Novato Bicycle / Pedestrian Plan 2015; and

WHEREAS, the City of Novato Bicycle / Pedestrian Plan 2015 is exempt from the requirements of the California Environmental Quality Act (CEQA), pursuant to CEQA Guidelines Section 15304 as set forth in the Staff Report of even date herewith.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Novato hereby adopts the City of Novato Bicycle / Pedestrian Plan 2015.

*     *     *     *     *     *     *     *

I HEREBY CERTIFY that the foregoing resolution was duly and regularly adopted by the City Council of the City of Novato, Marin County, California, at a meeting thereof, held on the 24th day of March, 2015, by the following vote, to wit:
AYES: Councilmembers Athas, Eklund, Lucan MacLeamy
NOES: Councilmembers None
ABSTAIN: Councilmembers None
ABSENT: Councilmembers Kellner

Sheri Hartz, City Clerk

Approved as to form:

City Attorney of the City of Novato